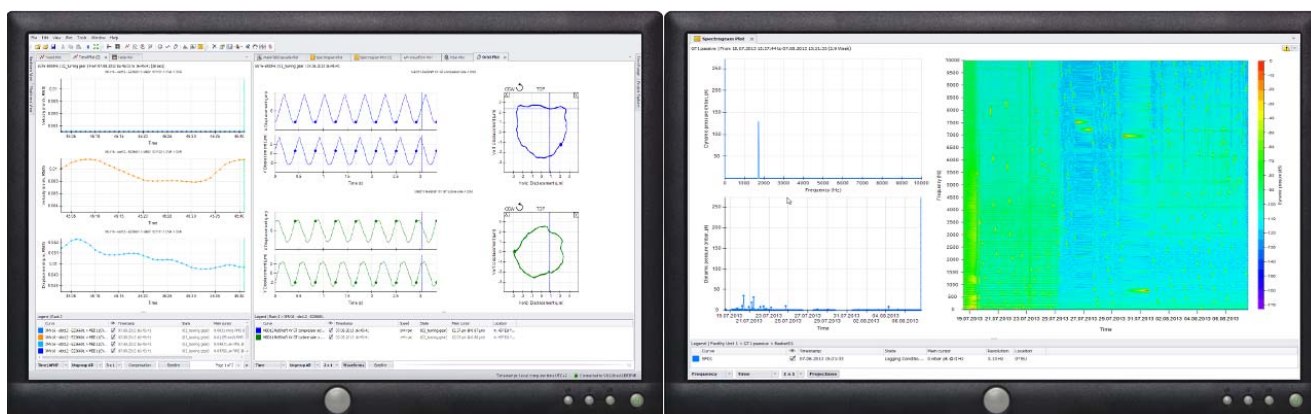




MEGGITT

SOFTWARE MANUAL

VibroSight® 3.6.0



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REVISION RECORD SHEET

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PREFACE

About this manual

This manual provides reference information on how to use the VibroSight® 3.6.0 software.

This information is also available electronically as the  *VibroSight* help (VibroSight.chm), which is copied to your computer as part of the VibroSight software installation process.

For installation information, see the  *Getting started with VibroSight®* installation guide.

About Meggitt, Meggitt Sensing Systems and Vibro-Meter

Headquartered in the UK, Meggitt PLC is a global engineering group specialising in extreme environment components and smart sub-systems for aerospace, defence and energy markets.

Vibro-Meter is the operating division of Meggitt specialising in sensing and monitoring systems, which has operated through its antecedents since 1927 under the names of ECET, Endevco, Ferroperm Piezoceramics, Lodge Ignition, Sensorex and Vibro-Meter. Today, these operations are integrated under one strategic business unit called Vibro-Meter, headquartered in Switzerland and providing complete systems, using these renowned brands, from a single supply base.

The Vibro-Meter facility in Fribourg, Switzerland operates as the legal entity Meggitt SA (formerly Vibro-Meter SA). This site produces a wide range of vibration, dynamic pressure, proximity, air-gap and other sensors capable of operation in extreme environments, electronic monitoring and protection systems, and innovative software for aerospace and land-based turbomachinery. This includes the VibroSight® software produced for the Vibro-Meter® product line.

Who should use this manual?

The manual is intended for use by qualified engineering personnel (for example, machine room operators and vibration engineers).

NOTE: Personnel involved in the operation of equipment from Meggitt Sensing Systems are assumed to have the necessary technical training in electronics or mechanical engineering and/or machine diagnostics (professional certificate/diploma, or equivalent) to enable them to operate the equipment correctly and safely.

Licensing

The purchase of the VibroSight® software includes licenses for the VibroSight software.

Applicability of this manual

This manual applies to version 3.6.0 of the VibroSight software package. It reflects the features available with version 3.6.0, and may not be applicable to earlier or later versions of the software.

Note that this manual describes use of the VibroSight software with a Windows® 7 or Windows® XP or computer in English. If using a different locale, you may need to modify certain parameters, for example, use a comma (",") as the decimal point in numbers.

Respect the instructions!

The procedures described in this manual should be strictly adhered to in order to ensure the correct configuration and operation of the software.

Personnel involved in the use of equipment from Meggitt Sensing Systems must respect general safety procedures as well as general and specific machine constructor guidelines and instructions.

Limitation of this document

Not all operating possibilities are described in this manual. Nevertheless, several specific configurations are described in detail. These can often be adapted to specific applications. When in doubt, contact Meggitt Sensing Systems so that an optimum measurement solution can be determined.

Related publications and documentation

Further information on products can be found in their corresponding data sheets. For example:

-  *VibroSight® software total monitoring solution data sheet*
-  *VibroSight® XMV16 / XIO16T extended vibration monitoring card pair data sheet*
-  *Getting started with VibroSight® installation guide.*

Further documentation concerning the VibroSight software is provided in the  *VibroSight* help (VibroSight.chm), which is copied to your computer as part of the VibroSight software installation process.

These documents can be obtained from your local Meggitt Sensing Systems representative.

SAFETY

Symbols and styles used in this manual

The following symbols are used in this manual where appropriate:



The WARNING safety symbol

THIS INTRODUCES DIRECTIVES, PROCEDURES OR PRECAUTIONARY MEASURES WHICH MUST BE EXECUTED OR FOLLOWED. FAILURE TO OBEY A WARNING CAN RESULT IN INJURY TO THE OPERATOR OR THIRD PARTIES.



The CAUTION safety symbol

This draws the operator's attention to information, directives or procedures which must be executed or followed. Failure to obey a caution can result in damage to equipment.



The ELECTROSTATIC SENSITIVE DEVICE symbol

This indicates that the device or system being handled can be damaged by electrostatic discharges.

Refer to **Handling precautions for electrostatic sensitive devices** on page iii for further information.

NOTE: This is an example of the NOTE paragraph style. This draws the operator's attention to complementary information or advice relating to products or their installation.

Important remarks on safety



Read this manual carefully and observe the safety instructions before using the equipment.

Every effort has been made to include specific safety-related procedures in this manual using the symbols described above. However, operating personnel are expected to follow all generally accepted safety procedures.

Safety procedures should be communicated to all personnel who may operate any piece of equipment described in this manual.

Meggitt Sensing Systems does not accept any liability for injury or material damage caused by failure to obey any safety-related instruction or due to any modification, transformation or repair carried out on the equipment without written permission from Meggitt SA. Any modification, transformation or repair carried out on the equipment without written permission from Meggitt Sensing Systems will invalidate any warranty.

Equipment used in potentially explosive atmospheres



THIS MANUAL COVERS EQUIPMENT THAT CAN BE USED IN POTENTIALLY EXPLOSIVE ATMOSPHERES, AS WELL AS EQUIPMENT THAT CANNOT BE USED IN POTENTIALLY EXPLOSIVE ATMOSPHERES.

TO ENSURE THAT THE EQUIPMENT CAN SAFELY BE USED IN POTENTIALLY EXPLOSIVE ATMOSPHERES, IT IS ESSENTIAL TO:

- **VERIFY IT IS IDENTIFIED WITH SPECIAL MARKING DESCRIBED IN THE “EC TYPE EXAMINATION CERTIFICATE” FOR THE PRODUCT**
- **RESPECT THE CRITERIA MENTIONED IN THE SAME “EC TYPE EXAMINATION CERTIFICATE”**

AN “X” OR A “U” PLACED AFTER THE CERTIFICATE NUMBER INDICATES THAT THE EQUIPMENT IS SUBJECT TO SPECIAL CONDITIONS FOR SAFE USE. THESE CONDITIONS ARE MENTIONED IN THE “SCHEDULE” SECTION OF THE CERTIFICATE.

General handling precautions

Meggitt Sensing Systems' proximity transducers are rugged devices which can withstand a certain amount of careless handling. Nevertheless, certain precautions should be taken when handling this equipment.



Read the following recommendations carefully before handling transducers.

- Do not drop the transducer onto a hard surface or subject it to violent shocks.
- Protect the body/head of the transducer when it is being handled, stored or transported. Remove this protection only when mounting the transducer or when inspecting/testing it.
- Check for dents when inspecting the transducer as this is a sign that it could have suffered a physical shock by impact. This may have caused damage to components within the transducer.
- Do not excessively bend the integral cable or associated cables. Respect the minimum bend radius quoted in the appropriate data sheet.
- When storing and using the equipment, respect the environmental specifications (temperature, humidity) quoted in the appropriate data sheet.

Handling precautions for electrostatic sensitive devices

Certain devices used in electronic equipment can be damaged by electrostatic discharges resulting from built-up static electricity. Special precautions must be taken to minimize or eliminate the possibility of these electrostatic discharges occurring.



Read the following recommendations carefully before handling electronic circuits, printed circuit boards or modules containing electronic components.

- Before handling electronic circuits, discharge the static electricity from your body by touching and momentarily holding a grounded metal object (for example, a pipe or cabinet).
- Avoid the build-up of static electricity on your body by not wearing synthetic clothing material, as these tend to generate and store static electric charges. Cotton or cotton blend materials are preferred because they do not store static electric charges.
- Do not handle electronic circuits unless it is absolutely necessary. Only hold modules by their front panel handles.
- Do not touch printed circuit boards, their connectors or their components with conductive devices or with your hands.
- Put the electronic circuit, printed circuit board or module containing electronic components into an antistatic protective bag immediately after removing it from the system rack.

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About VibroSight help

This is the  VibroSight help (VibroSight.chm) that comes with the VibroSight software from Meggitt Sensing Systems. This help is divided into the following main sections: Before starting, VibroSight software and VibroSight-compatible hardware. It also includes a Troubleshooting section and a Glossary.

Before starting

The Getting Started section highlights important information on the installation, configuration and application of the VibroSight software.

Note:

Please read the **Before starting** section of this help before using the VibroSight software, as the information it contains could be relevant to your installation and application.

VibroSight software help

Different sections of the VibroSight software give specific information on each of the available software clients, most of which are available from the  VibroSight Welcome Center:

-  VibroSight Configurator
-  VibroSight Event Viewer
-  VibroSight Mimic
-  VibroSight Scope
-  VibroSight Server
-  VibroSight System Manager
-  VibroSight Vision.

All of the software listed above – except for VibroSight Scope – is applicable to both VM600 rack-based and VibroSmart module-based (DMS) systems. However, VibroSight Scope can only be used with VibroSmart DMS modules, at present.

VibroSight hardware help

Depending on the hardware being used, VibroSight-based machinery monitoring systems can be used for machinery protection and/or condition monitoring applications:

- VM600 XMx16 cards are used for condition monitoring applications.
- VibroSmart DMS modules are used for machinery protection and condition monitoring applications.

The VibroSight-compatible hardware is divided into sections giving essential safety information and

details of the different types of hardware from Meggitt Sensing Systems' Vibro-Meter product line:

- VM600 system hardware
- VibroSmart DMS hardware.

Other

The  VibroSight help also contains some Troubleshooting guidelines, and a list of Abbreviations and a Glossary of Terms that should be useful sources of information. In addition to terminology specific to VibroSight, the Abbreviations and Glossary of Terms include industry-wide terms from the fields of vibration monitoring and combustion monitoring.

Finding information

At any time, the Search pane of the  VibroSight help can be used to rapidly find the information that you are looking for.

Feedback

If you discover any problems with the VibroSight – software, hardware or documentation – please use one of the Feedback and Bug Reporting options. These are available from the Help menu in the VibroSight Welcome Center.

Meggitt Sensing Systems is always happy to hear from its customers as your feedback enables us to improve the quality of our products.

Further information

A useful source of further information is the Meggitt Vibro-Meter® website.

- [Using the VibroSight help](#)

Related information

[Meggitt Vibro-Meter website \(external website\)](#)

Using the VibroSight help

The  VibroSight help (VibroSight.chm) allows you browse, search, and print help documentation about the VibroSight software. The documentation is organized into sets of information that are analogous to books. The help system also includes a full-text search capability for finding the information you need by searching for a keyword or phrase.

The help window

You can access the VibroSight help directly from the menu bar of any running VibroSight software modules by clicking Help > Contents.

When the  VibroSight help is started, the first topic shown in the main help window is called About VibroSight help. The table of contents for the product documentation is shown by default,

while the Search tab can be clicked to start a search for information and display the search results. You can navigate through the contents of the VibroSight help in one of the following ways:

- Double-click on an  icon to expand it and view its contents and double-click on an  icon to collapse it and hide its contents.
- Click on the  and  icons in the tree structure to expand and collapse their contents.
- Click on a  topic icon to view its contents in the main help window.

Embedded help

In addition to the VibroSight help, the VibroSight software includes embedded help in certain windows and dialog boxes in order to provide more immediate information on the user interface.

Wherever the  embedded help icon is seen, move the pointer over the  to display an on-screen tip that provides more information about a control and its options.

Parent topic: [About VibroSight help](#)

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Safety

Important remarks on safety



For the VibroSight-compatible hardware being used, refer to and carefully read each relevant hardware manual and observe the safety instructions before using the equipment. Important safety information is included in the following manuals:

- **VM600 CMS hardware manual (MSS document ref. MACMS-HW).**
- **VM600 MPS hardware manual (MSS document ref. MAMPS-HW).**
- **VibroSmart DMS hardware manual (MSS document ref. MADMS-HW).**

Every effort has been made to include specific safety-related procedures in Meggitt Sensing Systems (Meggitt SA) manuals using the symbols described below. However, operating personnel are expected to follow all generally accepted safety procedures.

Safety procedures should be communicated to all personnel who are liable to operate the equipment described in these manuals.

Meggitt Sensing Systems does not accept any liability for injury or material damage caused by failure to obey any safety-related instructions or due to any modification, transformation or repair carried out on the equipment without written permission from Meggitt SA. Any modification, transformation or repair carried out on the equipment without written permission from Meggitt SA will invalidate any warranty.

Symbols used in Meggitt Sensing Systems manuals

The following symbols are used in manuals from Meggitt SA where appropriate:



The WARNING safety symbol.

This introduces directives, procedures or precautionary measures which must be executed or followed. Failure to obey a warning can result in injury to the operator or third parties.



The CAUTION safety symbol.

This draws the operator's attention to information, directives or procedures which must be executed or followed. Failure to obey a caution can result in damage to equipment.



The ELECTROSTATIC SENSITIVE DEVICE symbol.

This indicates that the device or system being handled can be damaged by electrostatic discharges. Refer to [Handling Precautions for Electrostatic Sensitive Devices](#) for further information.

Note: The NOTE symbol draws the operator's attention to complementary information or advice relating to the subject being treated.

VibroSight software prerequisites

The VibroSight software requires prerequisite software that must be installed on the computer before VibroSight can be used.

For VibroSight 3.4.0 or later, the following prerequisite software must be installed on the computer before VibroSight can be installed and used:

- Microsoft .NET Framework 4.7.1
- Microsoft Visual C++ Redistributable Package for Visual Studio 2015
- OPC Core Components Redistributable.

Starting with VibroSight 3.4.0, the above prerequisite software is automatically installed on the computer by the VibroSight installer. More specifically, if any of the prerequisite software is not installed on the computer, the VibroSight installer will detect this and automatically install it as part of the VibroSight software installation process.

Note:

On a Windows computer, it is recommended that a system administrator installs VibroSight.

Refer to the  *Getting Started with VibroSight* installation guide for information on installing the VibroSight software.

Microsoft .NET Framework 4.7.1

Note: Microsoft .NET Framework 4.7.1 replaces .NET Framework versions 4.0 to 4.7. Different versions of Microsoft .NET Framework can coexist on the same computer, so do not remove other versions, which could be required by other software running on the computer.

Microsoft Visual C++ Redistributable Package for Visual Studio 2015

Note: Different versions of Microsoft Visual C++ Redistributable Packages can coexist on the same computer, so do not remove other versions, which could be required by other software running on the computer. Both the 64-bit and the 32-bit versions of a Microsoft Visual C++ Redistributable Package package can coexist on the same computer

The Microsoft Visual C++ Redistributable Package installed depends on the version of VibroSight software to be used: the 64-bit version of the package (“vc_redist.x64.exe”) is installed by the 64-bit version of VibroSight and the 32-bit version of the package (“vc_redist.x86.exe”) is installed by the 32-bit version of VibroSight.

OPC Core Components Redistributable

The OPC Core Components Redistributable used depends on the version of VibroSight software used: the 64-bit version of the package (“OPC Core Components Redistributable (x64) 106.0”) is installed by the 64-bit version of VibroSight and the 32-bit version of the package (“OPC Core Components Redistributable (x86) 106.0”) is installed by the 32-bit version of VibroSight.

Related reference

[VibroSight software, Windows operating system and Microsoft .NET Framework compatibility](#)

Related information

[VibroSight operating system dependencies](#)

[Microsoft .NET Framework downloads \(external website\)](#)

[Microsoft Visual C++ Redistributable Package for Visual Studio 2015 \(external website\)](#)

VibroSight software, Windows operating system and Microsoft .NET Framework compatibility

Information on VibroSight software, Windows operating system and Microsoft .NET Framework compatibility is provided in the following tables.

VibroSight software and Windows operating system compatibility

The following table shows VibroSight software and Windows operating system compatibility:

	Windows 7	Windows 8.1	Windows 10
VibroSight software compatible?	Yes (but not recommended for new installations as Microsoft support for Windows 7 ends in January 2020)	Yes	Yes

VibroSight software and Windows Server operating system compatibility

The following table shows VibroSight software and Windows Server operating system compatibility:

	Windows Server 2008 R2	Windows Server 2012	Windows Server 2016
VibroSight software compatible?	Yes (but not recommended for new installations as Microsoft support for Windows Server 2008 R2 ends in January 2020)	Yes	Yes

VibroSight software and Microsoft .NET Framework requirements

The following table shows VibroSight software and the Microsoft .NET Framework requirements:

VibroSight software version	Microsoft .NET Framework requirements
VibroSight 3.4.0 or later	.NET Framework 4.7.1 ^{See note 1}
VibroSight 3.0.0 or later	.NET Framework 4.6
VibroSight 2.12.0 or later	.NET Framework 4.5 and .NET Framework 2.0 ^{See note 2}
VibroSight 2.9.4 or later	.NET Framework 4.5
VibroSight 2.9.3 and 2.9.2	.NET Framework 4 (Standalone Installer)
VibroSight 2.9.1 or earlier	.NET Framework 3.5 SP1

Notes:

1. Microsoft .NET Framework 4.7.1 replaces .NET Framework versions 4.0 to 4.7.
2. Since Microsoft .NET Framework 3.5 also includes .NET Framework 2.0 and .NET Framework 3.0, installing Microsoft .NET Framework 3.5 SP1 is the recommended solution for most computers (rather than installing Microsoft .NET Framework 2.0).

Related information

[VibroSight software prerequisites](#)

[VibroSight operating system dependencies](#)

VibroSight operating system dependencies

After installing the VibroSight software, some configuration of the Windows operating system can be required.

Installation as an administrator on a Windows 7 computer

Windows 7 implements a system of privilege levels and user account controls (UACs) that “helps defend your computer against hackers and malicious software”. As a result, it may be necessary to run VibroSight software modules as an administrator and/or change the UAC settings on the computer.

Note:

On a  Windows 7 computer, it is recommended that a system administrator installs VibroSight.

Refer to the  *Getting Started with VibroSight* installation guide for information on installing the VibroSight software.

Related tasks

[Running as an administrator](#)

[Logging in as Admin](#)

Related reference

[VibroSight software, Windows operating system and Microsoft .NET Framework compatibility](#)

Related information

[VibroSight software prerequisites](#)

[Windows Firewall settings](#)

[VibroSight networking](#)

Support for 64-bit Windows operating systems

Starting with VibroSight version 2.9.0, support for the 64-bit versions of Windows operating systems has been added to VibroSight.

32-bit vs. 64-bit Windows

32-bit versions of Windows have a limited memory space (< 4 GB) that must be shared between all software running on the computer. 64-bit Windows can address much more memory and allows separate programs running on the computer to use up to 4 GB. When VibroSight runs on 64-bit Windows, the individual software modules such as VibroSight Server and VibroSight Vision can all use up to 4 GB each, which helps to eliminate memory and performance issues that can occur due to the limitations of the 32-bit memory space.

Note:

Another possible solution to balance the load is to use separate computers to run VibroSight clients. However, this approach has the disadvantage that multiple computers must be bought, set up and maintained.

WOW64

Note: The VibroSight software is still a 32-bit application.

Windows 64-bit operating systems include Windows on Windows 64 (WOW64), an x86 emulator that allows 32-bit Windows-based applications to run seamlessly on 64-bit Windows. WOW64 is provided with the operating system and does not have to be explicitly enabled.

Program files and registry settings

Using WOW64, Windows 64-bit operating systems maintain separate program file folders (file redirection) and registry keys (registry redirection) for 32-bit and 64-bit applications. (This allows 32-bit and 64-bit versions of an application to be installed on the same computer without overwriting each other's settings).

File redirection ensures that there are separate folders for program and operating system files for 32-bit and 64-bit applications. On 64-bit versions of Windows:

- C:\Windows\SysWOW64 is the default folder for 64-bit system files.
- C:\Program Files is the default folder for 64-bit applications files.
- C:\Windows\System32 is the default folder for 32-bit system files.

- C:\Program Files (x86) is the default folder for 32-bit applications files.

Note:

As a result, all references to the program files folder should be adapted by removing or adding (x86) as required. For example, when adapting or copying command-line scripts from 32-bit to 64-bit operating systems.

Registry redirection ensures that registry keys specific to 32-bit applications are redirected from HKEY_LOCAL_MACHINE\Software to HKEY_LOCAL_MACHINE\Software\WOW6432Node. Registry entries may also be seen else elsewhere, although this is unusual, for example, HKEY_CURRENT_USER\Software\WOW6432Node.

The WOW64 file and registry redirectors ensure that requests from 32-bit applications are automatically redirected to the appropriate 32-bit folders and registries.

Related reference

[Default VibroSight files](#)

[Default VibroSight folders](#)

Windows Firewall settings

After installing the VibroSight software, some configuration of the Windows Firewall settings can be required in order to allow the communication ports required by VibroSight.

On a Windows 7 computer

Windows Firewall is on by default in Windows 7, so VibroSight systems running on Windows 7 require configuration of the Windows Firewall settings before VibroSight can be used.

VibroSight systems running on Windows 7 require that either Windows Firewall is turned off or all VibroSight software modules are selected in the list of allowed programs (the exceptions list) in Windows Firewall. The VibroSight software modules that must be allowed to communicate through the Windows Firewall are:

-  VibroSight Welcome Center (XmsWelcomeCenter.exe)
-  VibroSight Configurator (XmsConfigurator.exe)
-  VibroSight Event Viewer (VibroSightEventViewer.exe)
-  VibroSight Mimic (VibroSightMimic.exe)
-  VibroSight Scope (VibroSightScope.exe)
-  VibroSight Server (Xms.Server.Client.exe, XmsServerService.exe and XmsHostService.exe)
-  VibroSight System Manager (XmsSystemManager.exe)
-  VibroSight Vision (VibroSightVision.exe).

In addition, the IP (TCP and UDP) port numbers listed in the following table must be added as allowed ports to the exceptions list in Windows Firewall:

IP port	Required by	Description
TCP 55000	VibroSight Server (Xms.Server.Client.exe)	Used by a VibroSight Server for communication with (client) VibroSight software modules. Note: VibroSight Servers support TCP port binding in order to allow a VibroSight Server to always use a specific TCP port. The TCP port number used by a VibroSight Server is displayed in the main VibroSight Server window, under Connection Info, and in VibroSight System Manager in the VibroSight Hosts view.
TCP 50000 (TCP 50001, TCP 50002, ...)	VibroSight Host Service (XmsHostService.exe)	Used by the VibroSight Host Service for communication with VibroSight System Manager. By default, when the VibroSight Host Service starts, it will take the next available TCP port number starting at 50000. That is, if TCP Port 50000 is being used, the VibroSight Host Service will take TCP Port 50001, and so on.
TCP 30740 TCP 50003 UDP 50003	VM600 XMx16 cards	VM600 XMx16 cards use three services for communication: • Main service for commands such as configuration and data, using TCP port number 30740. • System configuration such as firmware updates and NTP Configuration, using TCP port number 50003. • System configuration such as network interface (IP address), using UDP port number 50003.
TCP 30740 TCP 30741 UDP 30750	VibroSmart DMS devices	VibroSmart DMS devices use three services for communication: • Main service for commands such as configuration and data, and system configuration such as firmware updates and NTP Configuration, using TCP port number 30740. • Service for diagnostic data, using TCP

		port number 30741. System configuration, such as network interface (IP address), using UDP port number 30750.
UDP 5353	Zero-configuration networking (zeroconf)	Used by the multicast Domain Name System (mDNS) messages required for device discovery.
UDP 123	Network time protocol (NTP)	Used by NTP (UDP/IP packets are used because of the fast connection setup and response times). Note: Only required if the VibroSight system is being used with an NTP server as a time reference.

Since VibroSight 2.9.7, it is no longer necessary for incoming ICMP echo requests to be allowed through Windows Firewall, as the use of ICMP was replaced entirely by TCP.

Related concepts

[VibroSight Server and TCP port binding](#)

Related information

[VibroSight networking](#)

[VibroSight operating system dependencies](#)

VibroSight networking

VibroSight uses zero-configuration networking (zeroconf) in order to automatically create usable networks of VibroSight-compatible devices with the minimum amount of network administration.

Zero-configuration networking

VibroSight uses a proprietary implementation of the zero-configuration networking (zeroconf) protocols for all required networking operations. This includes the automatic discovery of and communications between VibroSight-system components, such as VibroSight software modules, VM600 XMx16 cards and VibroSmart DMS modules.

Note:

The zero-configuration networking (zeroconf) protocols use multicast Domain Name System (mDNS) messages on UDP port 5353 for device discovery, so this UDP port number must be added as an allowed UDP port to the exceptions list in Windows Firewall.

If the automatic discovery does not work (for example, due to a network not meeting the requirements of zeroconf), then connections between the VibroSight-system components can be established manually by using the IP addresses of the components.

For example:

- For (client) VibroSight software module to VibroSight Server communications:

- Use the IP address and TCP port number for a VibroSight Server that is displayed in the main VibroSight Server window, under Connection Info, and in VibroSight System Manager in the VibroSight Hosts view.
- For VibroSight System Manager to VM600 XMx16 card communications:
 - It is possible to connect from VibroSight System Manager to a VM600 XMx16 card (even if the card does not have a valid IP address) if the host computer running VibroSight System Manager and the card are on the same network.

If necessary, a direct connection between the computer and the device can be made in order to bypass the network.

VibroSight network requirements

A network that meets the requirements of zero-configuration networking (zeroconf) is recommended in order to reduce the need to establish connections between VibroSight-system components manually.

Network bandwidth and latency recommendations depend on the monitoring system hardware being used:

- VM600 XMx16 cards – A network that supports bandwidth and latency requirements equivalent to 1000 Mbps (1 Gbps) LAN or better is recommended.
- VibroSmart DMS modules – A network that supports bandwidth and latency requirements equivalent to 100 Mbps LAN or better is recommended.

Note:

However, the highly configurable nature of the VibroSight software and monitoring system hardware, and the wide variation in machinery monitoring applications makes it impossible to define operating limits for a VibroSight network that are correct under all circumstances.

Wide area networking

It is not recommended to use WANs between VibroSight-system components for reasons of bandwidth, latency and security.

A Windows Remote Desktop Connection is recommended for accessing VibroSight-systems via a WAN.

- **[VibroSight and Apple Bonjour](#)**
VibroSight originally used Apple Bonjour for Windows to discover and locate network-enabled devices from Meggitt Sensing Systems, such as VM600 cards and VibroSmart DMS modules. However, Apple Bonjour for Windows is no longer required.

Related tasks

[Setting up an Ethernet connection](#)

Related information

[Windows Firewall settings](#)

[VibroSight operating system dependencies](#)

VibroSight and Apple Bonjour

VibroSight originally used Apple Bonjour for Windows to discover and locate network-enabled devices from Meggitt Sensing Systems, such as VM600 cards and VibroSmart DMS modules. However, Apple Bonjour for Windows is no longer required.

Note:

Starting with VibroSight 2.9.6, Apple Bonjour for Windows is no longer required, as a proprietary implementation of the zero-configuration networking (zeroconf) protocols has been implemented to replace the use of Apple Bonjour and UPnP networking protocols for all required networking operations.

However, the installation of Apple Bonjour for Windows (itself an implementation of zeroconf) remains a prerequisite for the operation of older versions of VibroSight, which uses Bonjour to recognise and communicate with VM600 cards and VibroSmart DMS modules.

Apple Bonjour for Windows is free software and is available from Meggitt Sensing Systems customer support.

Note:

If Apple Bonjour for Windows is required, the 64-bit version of Bonjour must be installed on 64-bit Windows operating systems and the 32-bit version of Bonjour must be installed on 32-bit Windows operating systems.

VibroSight 2.9.6 or later

Since VibroSight 2.9.6, Apple Bonjour for Windows is not required and may be uninstalled (if it is not required by other software installed on the computer running VibroSight).

VibroSight 2.8.x or later

Only Apple Bonjour for Windows version 3.0 or later should be used with VibroSight 2.8.x or later.

VibroSight 2.7.x or earlier

Only Apple Bonjour for Windows version 1.0.106 should be used with VibroSight 2.7.x or earlier.

Apple Bonjour and iTunes

Unwanted automatic updates or upgrades of Apple Bonjour for Windows may occur if iTunes is installed on the computer running VibroSight.

Note: To prevent unwanted updates to Apple Bonjour, iTunes should not be installed on a computer running VibroSight

Parent topic: [VibroSight networking](#)

VibroSight monitoring system time reference

requirements

Starting with VibroSight 2.11.1, a VibroSight monitoring system can be deployed either without or with a network time protocol (NTP) server as a time reference.

VibroSight 2.11.1 supports a new mode of operation that does not require an NTP server as a time reference (that is, NTP-free) in order to supplement the existing mode of operation that does require an NTP server. This means that VibroSight systems can now be deployed as follows:

- VibroSight system without an NTP server (NTP-free)

Recommended for the vast majority of machinery monitoring applications and should be used as the default mode of operation.

- VibroSight system with an NTP server

Recommended for machinery monitoring applications requiring more accurate data synchronisation.

VibroSight systems without an NTP server (NTP-free)

NTP-free operation is recommended for the vast majority of machinery monitoring applications that work with long-term historical trends. This mode of operation is characterised by:

- Easier to deploy as no NTP server required.
- Synchronisation:
 - Data correlation ≤ 100 ms for data from the same VM600 XMx16 card
 - Data correlation ≤ 1 s for data from different VM600 XMx16 cards.

VibroSight systems with an NTP server

Operation with an NTP server is recommended for those machinery monitoring applications that require data synchronicity ≤ 100 milliseconds. These deployments are characterised by:

- Less easy to deploy as an NTP server is mandatory (associated administrative burden).
- Synchronisation:
 - Data correlation < 100 ms for data from the same VM600 XMx16 card
 - Data correlation < 100 ms for data from different VM600 XMx16 cards.

Note:

The highly configurable nature of the VibroSight software and VM600 XMx16 cards and the wide variation in machinery monitoring applications makes it impossible to define operating limits for VibroSight that are correct under all circumstances.

In practice, the correlation of data from the same VM600 XMx16 card is usually better than 100 ms,

depending on the data type and certain configuration settings. For example, the sample-by-sample correlation of waveforms that are acquired with similar configuration parameters (such as bandwidth, filtering and reference speed) is possible to 1 ms, while the sample-by-sample correlation of trends and dynamic data is possible to 100 ms.

Related concepts

[VibroSight Server and time reference requirements](#)

[VibroSight Server and time zones](#)

[VibroSight Vision timestamps](#)

Related tasks

[Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

[Setting the reference clock for a VibroSight server](#)

[Setting up an NTP server on a Windows 7 computer](#)

[Setting up the Meinberg NTP package on a Windows computer](#)

Network connections

Each XMC16 card and XMV16 card needs the appropriate input/output card to create the monitoring card pair. Depending on the card pair, there can be a choice of Ethernet communication ports to use in your system.

The following table shows which Ethernet communication ports are available for the various card pairs:

Card pair	Front Ethernet port	Rear Ethernet port
XMC16 and XIO16T	√	√
XMV16 and XIO16T	√	√

Note:

The factory assigned defaults for a VM600 card pair is as follows:

- The front Ethernet port (XMC16 and XMV16) is enabled
- The rear Ethernet port (XIO16T) is disabled.

Therefore, when a card pair is connected to a network for the first time, the front Ethernet port (XMC16 and XMV16) should be used.

The decision to use either the rear Ethernet port (XIO16T) or the front Ethernet port (XMV16 and XMC16) as the connection to the network in your system depends on two main factors:

- Network cable lengths: the XIO16T can support a distance of up to 60 m at 1 000 Mbps. The XMV16 and XMC16 can support a distance of up to 100 m at 1 000 Mbps (1 000BASE-T compliant).
- Network port accessibility: depending on your installation, it may be easier to access the network port on the front or the rear of your rack.

Note:

Only the used Ethernet port should be enabled. The other Ethernet port (if applicable) should be disabled using VibroSight System Manager.

That is, if the rear Ethernet port is the primary port in your system, the front Ethernet port should be disabled. And if the front Ethernet port is the primary port in your system, the rear Ethernet port should be disabled.

Related tasks

[Enabling and disabling Ethernet ports for a VM600 card pair](#)

Related reference

[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)

VibroSight software, configuration and firmware compatibility

The VibroSight software uses on-screen messages to inform the user of any compatibility issues that result from updates and upgrades to the VibroSight software.

Types of compatibility issue

There are two main sources of compatibility issue after a VibroSight software update or upgrade:

- The version of the firmware running on a VibroSmart DMS module is incompatible (too old or too new) with the VibroSight software.
- The configuration running on a VibroSmart DMS module is incompatible with the VibroSight software.

In both of these cases, the VibroSight software concerned will display an on-screen message that describes and provides information on how to resolve the compatibility issue.

Note:

Refer to the  *VibroSight software* release notes for the version of VibroSight software being used in order to obtain compatibility information specific to that particular software release.

Related tasks

[Changing firmware](#)

[Checking the firmware](#)

Default VibroSight files

VibroSight uses a number of different default files and file name extensions that are associated with different VibroSight software clients. Log files and an access rights file are also used.

VibroSight files and file name extensions

The default files used by the VibroSight software can be identified by their different file name extensions.

VibroSight Configurator:

- A *.vscfg file is a configuration file for a VibroSight Server that is generated by VibroSight Configurator when a VibroSight Server configuration is saved using File > Save As > File. A *.vscfg file contains information about the configuration of the VM600 XMx16 cards and VibroSmart DMS devices used by a specific application.

Double-clicking a *.vscfg file in Windows Explorer will automatically start VibroSight Configurator and open the VibroSight Server configuration. The file can also be manually opened in VibroSight Configurator using File > Open > File.

Note:

In VibroSight 2.12.4 or earlier, *.xml was the file name extension used for a configuration file for a VibroSight Server.

- A *.mscfg file is a configuration file for a VibroSight Modbus Server that is generated by VibroSight Configurator when a VibroSight Modbus Server configuration is saved using File > Save As > File. A *.mscfg file contains information about the configuration of a Modbus Server used by a specific application.

Double-clicking a *.mscfg file in Windows Explorer will automatically start VibroSight Configurator and open the VibroSight Modbus Server configuration. The file can also be manually opened in VibroSight Configurator using File > Open > File.

- A *.opscfg file is a configuration file for a VibroSight OPC Server that is generated by VibroSight Configurator when a VibroSight OPC Server configuration is saved using File > Save As > File. A *.opscfg file contains information about the configuration of an OPC Server used by a specific application.

Double-clicking a *.opscfg file in Windows Explorer will automatically start VibroSight Configurator and open the VibroSight OPC Server configuration. The file can also be manually opened in VibroSight Configurator using File > Open > File.

VibroSight Event Viewer:

- A *.vsevtvi file is a project file for VibroSight Event Viewer that is generated by VibroSight Event Viewer when a project is saved using File > Save Project As. A *.vsevtvi file contains information about a VibroSight Event Viewer project, including settings such as the data source and options such as user preferences.

Double-clicking a *.vsevtvi file in Windows Explorer will automatically start VibroSight

Event Viewer and open the project. The file can also be manually opened in VibroSight Event Viewer using File > Open Project.

VibroSight Mimic:

- A *.vsmimic file is a project file for VibroSight Mimic that is generated by VibroSight Mimic when a project is saved using File > Save Project As. A *.vsmimic file contains information about a VibroSight Mimic project, including settings such as the data source, individual mimic documents, and options such as user preferences.

Double-clicking a *.vsmimic file in Windows Explorer will automatically start VibroSight Mimic and open the project. The file can also be manually opened in VibroSight Mimic using File > Open Project.

VibroSight Scope:

- A *.vsscope file is a project file for VibroSight Scope that is generated by VibroSight Scope when a project is saved using File > Save Project As. A *.vsscope file contains information about a VibroSight Scope project, including settings such as the data source and options such as user preferences.

Double-clicking a *.vsscope file in Windows Explorer will automatically start VibroSight Scope and open the project. The file can also be manually opened in VibroSight Scope using File > Open Project.

VibroSight Server:

- A *.vssrvcfg file is a configuration file for a VibroSight Server database that is generated by VibroSight Configurator when a VibroSight Server configuration is saved using File > Save As > Server/Database. A *.vssrvcfg file contains information about the configuration of the VibroSight Server and VibroSight Server database used by a specific application.

Double-clicking a *.vssrvcfg file in Windows Explorer will automatically start VibroSight Server using the VibroSight Server configuration and VibroSight Server database.

Note:

In VibroSight 2.9.6 or earlier, *.config was the file name extension used for a configuration file for a VibroSight Server database.

- A *.vssrvdb file is a database file for a VibroSight Server that is generated by VibroSight Configurator when a VibroSight Server configuration is saved using File > Save As > Server/Database. A *.vssrvdb file is the actual database file that contains all of the logged measurement data stored by a specific application. It also contains information about the configuration of the VibroSight Server and VibroSight Server database.

Double-clicking a *.vssrvdb file in Windows Explorer will automatically start VibroSight Server using the VibroSight Server configuration and VibroSight Server database.

Note:

In VibroSight 2.9.6 or earlier, *.db was the file name extension used for a database file for a VibroSight Server database.

VibroSight Vision:

- A *.vsvision file is a project file for VibroSight Vision that is generated by VibroSight Vision when a project is saved using File > Save Project As. A *.vsvision file contains information about a VibroSight Vision project, including settings such as the data source, individual views and plots, and options such as user preferences.

Double-clicking a *.vsvision file in Windows Explorer will automatically start VibroSight Vision and open the project. The file can also be manually opened in VibroSight Vision using File > Open Project.

Note:

In VibroSight 2.9.7 or earlier, *.xmsproj was the file name extension used for the main project file for VibroSight Vision. Related project files were identifiable by extensions to the main project file name. For example, *_Layout.xml was an associated system file to store information on the layout of windows in the user interface.

VibroSight historical data archive:

- A *.vshda file is a VibroSight historical data archive (HDA), a proprietary file format used to store and work with historical measurement data in VibroSight. A *.vshda file is generated by VibroSight Configurator when a VibroSight Server database (*.vssrvdb) is copied using the Data Repositories Copy command with historical data archive (HDA) specified as the output. So, just like a VibroSight Server database file, a VibroSight HDA file contains logged measurement data from a specific application.

A *.vshda file is treated by VibroSight as a data repository (source), like the other available data sources such as VibroSight Server databases and VibroSight devices (VibroSmart DMS devices). However, because the VibroSight HDA file format is highly optimised for the retrieval and handling of large data sets, it is much faster and very responsive when analysing large quantities of logged measurement data (compared to a database).

Double-clicking a *.vshda file in Windows Explorer will automatically start VibroSight Vision with a new (empty) project and with the VibroSight HDA as the data source.

Log files

VibroSight software uses log files to record the behaviour of the software. This information is recorded to help investigate and debug any potential problems that might occur during the operation of the software.

Note:

The Technical Log Files view of the Tools > Options menu in a VibroSight software module can be used to change the default folders and file names used for system log files. The level of detail (amount of information) recorded to a log file can also be modified using these options.

The default folder used for VibroSight log files (*.log and *.xlog) is:

- On a  Windows 7 computer: C:\ProgramData\Meggitt\VibroSight\Log Files

The default VibroSight file names used are:

- XmsWelcomeCenter.xlog is the log file for the VibroSight Welcome Center.
- XmsConfigurator.log is the log file for VibroSight Configurator.
- VibroSightEventViewer.xlog is the log file for VibroSight Event Viewer.
- VibroSightMimic.xlog is the log file for VibroSight Mimic.
- VibroSightScope.xlog is the log file for VibroSight Scope.
- Xms.Server.Client.exe.log and XmsHostService.xlog are the log files for the VibroSight Server and the VibroSight Host Service.
- XmsSystemManager.xlog is the log file for VibroSight System Manager.
- VibroSightVision.xlog is the log file for VibroSight Vision.

Access rights file

VibroSight software uses an access rights file to manage the system of user levels (access rights) used by the software.

The default folder used for the VibroSight access rights file is:

- On a  Windows 7 computer: C:\ProgramData\Meggitt\VibroSight

The default VibroSight file name used is:

- XmsAccessRights.dat is the access rights file for VibroSight.

Related tasks

[Starting VibroSight Configurator](#)

[Starting VibroSight Event Viewer](#)

[Starting VibroSight Mimic](#)

[Starting VibroSight Scope](#)

[Starting a VibroSight Server](#)

[Starting VibroSight Vision](#)

[Saving a configuration for a VibroSight Server as a file](#)

[Saving a configuration for a VibroSight Server as a VibroSight Server](#)

Related reference

[Default VibroSight folders](#)

Related information

[Support for 64-bit Windows operating systems](#)

Default VibroSight folders

VibroSight uses a number of different default folder locations for the organisation and storage of system files, as well as the files and folders created by the user.

VibroSight folders

The default folders used by the VibroSight software are as follows:

Note:

The default location for the Windows program files folder depends on the operating system installed on the computer:

- C:\Program Files (x86) on 64-bit versions of Windows.
- C:\Program Files on 32-bit versions of Windows.

As a result, all references to the program files folder should be adapted by removing or adding (x86) as required.

- C:\Program Files (x86)\Meggitt\VibroSight

This is the default application folder (application path directory), where the VibroSight software is installed and related files such as documentation and firmware are stored.

- C:\Program Files (x86)\Meggitt\VibroSight\Bin

This is the folder where executable program files are stored for the VibroSight software modules.

- C:\Program Files (x86)\Meggitt\VibroSight\Firmware

This is the folder where firmware (embedded software) is stored.

The firmware files for any VM600 card, identified by their *.tgz file name extension, can be found in the appropriate VM600 subfolder. The firmware files for any VibroSmart DMS device, identified by their *.fw file name extension, can be found in the appropriate VibroSmart DMS subfolder.

Any firmware updates received from Meggitt Sensing Systems should also be stored here.

- C:\VibroSight Data

This is the default data folder (data path directory), where measurement data (VibroSight Server data repositories (VibroSight historical data folders (*.vshdf) and VibroSight historical data archives (*.vshda))) and VibroSight system configuration information are stored.

Note:

A VibroSight historical data folder is identified by a *.vshdf file and an associated Storage subfolder.

The default VibroSight data folder can be changed at any time using VibroSight System Manager.

- C:\VibroSight Data\Examples

These folders contain example VibroSight configurations, data repositories and mimics for different typical machinery monitoring applications.

- C:\VibroSight Data\Templates

This folder contains an example VibroSight configuration for a typical turbine that can be used as a template for other machinery monitoring applications.

- C:\VibroSight Data\Tools

These folders contain VibroSight configurations and data repositories that can be used as tools to help debug and/or start working with VM600 XMx16 cards.

- On a  Windows 7 computer: C:\Users\username\My Documents\VibroSight\Projects, where username is your Windows account name.

This is the default projects folder. It is where the project files created by users are stored.

Related tasks

[Changing the default folders](#)

[Changing the default VibroSight data folder](#)

[Accessing the program data folder \(ProgramData\) in Windows 7](#)

[Saving a configuration for a VibroSight Server as a file](#)

[Saving a configuration for a VibroSight Server as a VibroSight Server](#)

Related reference

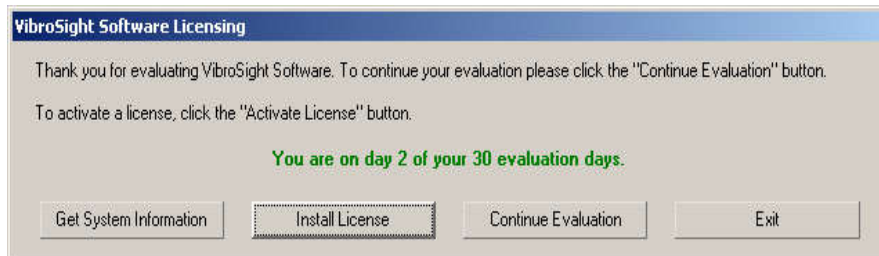
[Default VibroSight files](#)

Related information

[Support for 64-bit Windows operating systems](#)

An introduction to VibroSight licensing

When first installed, the VibroSight software will run in demonstration mode (see the screen shot below). This 'demo' mode is fully functional – there are no limitations – and lasts for an evaluation period of 30 days.



The window presented when VibroSight is running in demonstration mode

However, it is important to activate your user licence as soon as possible in order to avoid being limited to the evaluation period and to have full access to Meggitt Sensing Systems' customer support. This also helps ensure that your software is a legal copy and is installed in compliance with the Meggitt Sensing Systems (Meggitt SA) software licence agreement.

Note:

Starting with VibroSight version 2.9.1, the following VibroSight software modules do not require a user licence in order to run: VibroSight Configurator, VibroSight Scope and VibroSight System Manager.

There is only one setup for all installation types, whatever the software edition or options (such as application packages) that are purchased. The user can install all software functions or be more selective with their installation. It is the licence file that enables or disables the functionality of the software.

Note: During the installation of the VibroSight software, the terms and conditions of the Meggitt Sensing Systems (Meggitt SA) software licence agreement were accepted. These terms and conditions can be reviewed at any time, in one of the following ways:

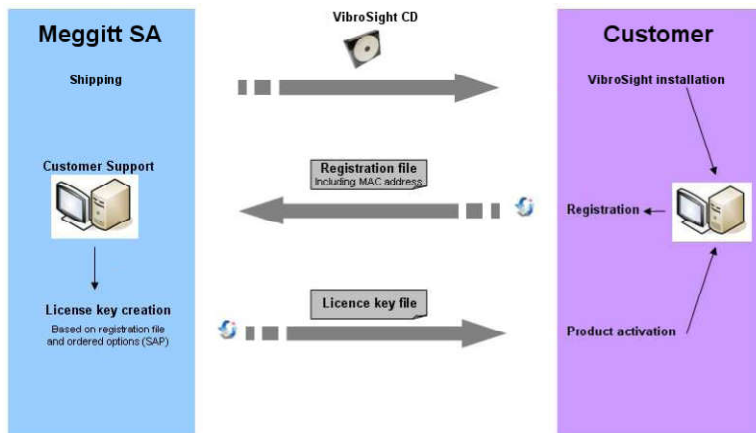
- Click the Start button, then click All Programs > Meggitt > VibroSight > Documentation > License Agreement.
- From the VibroSight Welcome Center, click Licencing > Licence Agreement.

VibroSight software activation process

The VibroSight software activation process should be started as soon as possible after the installation of your software.

Note: The VibroSight software will run in demonstration mode when the software is initially installed. As the demonstration mode is fully functional and lasts for an evaluation period of 30 days, the customer can start using VibroSight while the licence key is being generated.

The software activation process consists of the steps outlined in the diagram below.



The VibroSight software activation process
The steps are:

1. Installing the VibroSight software.

The VibroSight CD is used to install the VibroSight software on a computer.

2. Generating a registration file.

System information is obtained from the VibroSight computer and sent to Meggitt Sensing Systems customer support. (The system information is captured automatically by the VibroSight software, which generates a registration file when requested to do so by the user.)

3. Generating a licence key.

Meggitt Sensing Systems customer support combines the registration file with the order information (a list of purchased software options from SAP) to generate a licence key. The licence key file is sent to the customer.

4. Installing a licence key file.

The licence key file is installed on the VibroSight computer by the user. This activates the VibroSight user licence, verifying that the software is a legal copy and enabling the purchased software options.

Note:

The licence key is tied to a specific computer. All library files remain on the hard disk of the computer but only purchased (that is, licensed) libraries will be accessible.

VibroSight software upgrade process

When upgrading the VibroSight software, it may also be necessary to upgrade the user licence.

A new licence key file is required for:

- Major or minor level (x.x.x) software upgrades requiring a later version of the VibroSight software. For example, from version 2.11.x to version 2.12.x.

- Expansion of a VibroSight system to support additional channels or tags using the existing version of the VibroSight software.

In general, the licence key file remains unchanged for update level releases (x.x.x). For example, from version 2.11.5 to version 2.11.6.

Note:

Refer to the *VibroSight software* data sheet for further information.

To obtain a new VibroSight licence key file or for further information on licence keys, contact Meggitt Sensing Systems customer support.

Related tasks

[Activating a licence](#)

Installing the VibroSight software

Refer to the  *Getting Started with VibroSight* installation guide for information on installing the VibroSight software.

The installation guide can be found in the documentation folder of the VibroSight CD, for example: D:\Documentation.

Related tasks

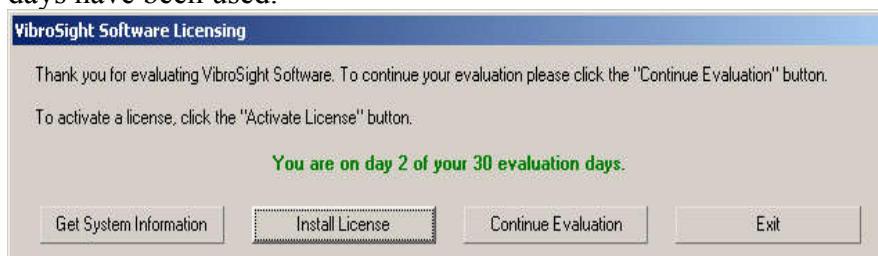
[Removing the VibroSight software](#)

Generating a registration file

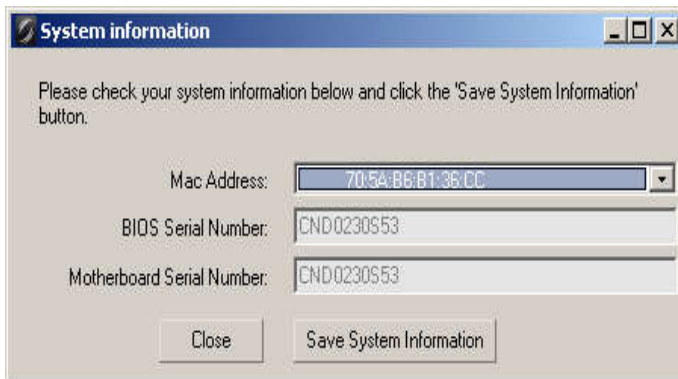
The information necessary to generate a licence key for the VibroSight software requires some information about the computer on which the software has been installed.

The required registration (system information) file is automatically generated by the VibroSight software. The information captured is specific to the computer on which the software is installed. Typically, this includes the MAC address, BIOS serial number and motherboard serial number.

1. Start VibroSight Vision. Running in demonstration mode, the VibroSight software will always show a VibroSight Software Licensing dialog box that indicates how many of the evaluation days have been used.



2. Click the Get System Information button. The System information dialog box appears.



Note:

On a Windows 7 computer, the fields for Mac Address and BIOS Serial Number might remain blank (that is, not be obtained correctly) if the computer is not connected to a network. In this case, connecting the network adapter (network interface card) of the computer running VibroSight to a network or a network switch may be necessary in order to obtain the system information.

3. Click the Save System Information button and use the resultant Save As dialog box to indicate in which folder and under what name the information should be saved.

Note: The VibroSight software uses a default file name that consists of the MAC address and the *.xsi file name extension. If you prefer, you can choose another file name, for example, VibroSight_registration.xsi.

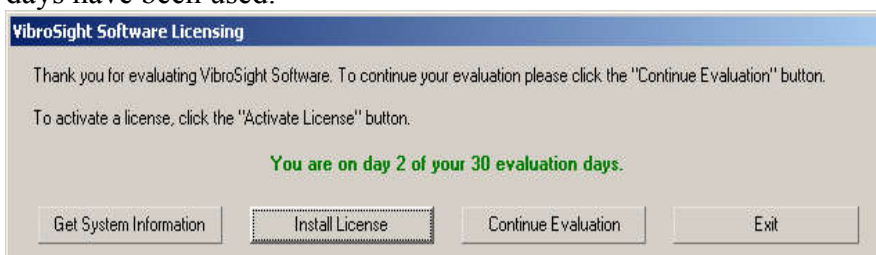
4. Email the registration file to: energysupport@ch.meggitt.com. Meggitt Sensing Systems customer support will generate the required licence key and sent the information to the user.

Installing a licence key file

The information necessary to activate your user licence, verifying that a software product is a legal copy and ensuring full product support, is contained in a licence key file.

The licence key file is generated by Meggitt Sensing Systems customer support using two sources of information:

- the registration file - containing information specific to the computer that VibroSight is installed on
 - the order information - containing details of your purchased VibroSight software options.
1. Start VibroSight Vision. Running in demonstration mode, the VibroSight software will always show a Welcome to VibroSight Software dialog box that indicates how many of the evaluation days have been used.



2. Click the Install License button.
3. Use the resultant Open dialog box to navigate the folders on your computer and select the licence key file obtained from Meggitt Sensing Systems customer support. Click OK.

Note: The VibroSight software licence key file uses a default file name that includes the MAC address and the *.lic file name extension.

4. The VibroSight software will read the information from the licence key file and use it to activate the user licence agreement. Your VibroSight software has now been activated and it will no longer show the VibroSight Software Licensing dialog box that indicates the number of evaluation days used.

An introduction to VibroSight Configurator

The VibroSight software uses a client-server architecture to distribute the functional requirements of the system across several software modules and  VibroSight Configurator is used to configure the specific parameters required by an application.

Note:

Starting with VibroSight version 2.9.1, the VibroSight Configurator software does not require a user licence in order to run.

For example, VibroSight Configurator is used to configure machine specific parameters for data logging and transient acquisition, and the data required to be extracted.

VibroSight Configurator is also used to configure external interfaces such as Modbus and OPC.

VibroSight Server configurations

A VibroSight Server configuration contains all of the parameters of a VibroSight-compatible hardware measurement chain, including both the machinery being monitored and the monitoring equipment.

The machinery being monitored (Machinery view) includes: Facility Units, Machine Units, Shafts, Stages, Bearing Planes and Points.

For VM600 XMx16 cards, the monitoring equipment (Hardware view) includes:

- VM600 racks and their cards (XMC16, XMV16 and/or XMVS16).
- Input channels (dynamic and/or tacho).
- Processing blocks (dynamic, tacho, dual shaft relative and/or dual shaft absolute) and their outputs (spectra, waveforms and extracted data entities).

For VibroSmart DMS modules, the monitoring equipment (Hardware view) includes:

- VibroSmart measurement blocks and their modules (VSI010 and/or VSV30x).
- Input channels (dynamic and/or auxiliary).
- Processing blocks (asynchronous absolute bearing vibration, shaft relative vibration, narrow band vibration, tacho, position, broad band pulsation and/or dual shaft relative) and their outputs (spectra, waveforms and extracted data entities).

Also included in a configuration for a VibroSight Server are machine-specific parameters for data alarms, data logging, transients and so on.

A configuration for a VibroSight Server can be permanently saved to disk as either an XML-based file (*.vscfg) or as a VibroSight Server/Database (that is, VibroSight historical data folder (*.vshdf) and the associated Storage subfolder).

For VM600 XMx16 card-based systems, a configuration for a VibroSight Server must be saved as a VibroSight Server/Database and then activated on the VibroSight Server before it can be accessed by VibroSight software clients. For example, by VibroSight Vision to import live or historical data and display plots.

Similarly, for VibroSmart DMS module-based systems, a configuration for a VibroSight Server can be saved as a VibroSight server/database and then activated on the VibroSight Server before access by VibroSight software clients. (This is known as a “server connection”.)

Alternatively, for VibroSmart DMS module-based systems, a configuration for a VibroSight Server can be saved as a file and then activated directly on the VibroSmart DMS devices, before access by VibroSight software clients. (This is known as a “direct connection” or a “stand-alone” VibroSmart DMS.)

Note:

A VibroSmart DMS module-based system operating as a “stand-alone” VibroSmart DMS is capable of handling live data directly from VibroSmart DMS modules only: no data logging is possible without a VibroSight Server.

Related tasks

[Managing VibroSight Server configurations](#)

[Creating a VibroSight Server configuration](#)

[Saving a configuration for a VibroSight Server as a VibroSight Server](#)

Related reference

[Configuration root parameters](#)

Configurator Modes

VibroSight Configurator has two main modes of operation – Hierarchical Mode and Multi Edit Mode.

Hierarchical Mode is an organization of Configurator windows that uses the Data Storage view, Machinery view and Hardware view. This arrangement provides the maximum amount of configuration parameter information to the user for an individual channel or processing block.

Note:

In Hierarchical Mode, information can only be viewed on a per channel or processing block basis, so it is the recommended view for initially entering configuration information.

Multi Edit Mode is an organization of Configurator windows that uses the Hardware view and Properties window. This arrangement provides summary information that supports the comparison of configuration parameters.

Note:

In Multi Edit Mode, information can be viewed and modified for more than one channel and processing block at a time, so it is the recommended view for comparing and modifying configuration data that has already been entered.

Hierarchical Mode and Multi Edit Mode are selected using the View command on the Configurator menu bar. Only one mode can be active at a time.

Related concepts

[VibroSight Configurator user interface](#)

Facility Units

A *facility unit* is a collective name for the buildings, machine rooms, or other facilities in which the machinery being monitored is installed.

Related reference

[Facility Unit Parameters](#)

Machine Units

The term *machine unit* is used to describe complex machinery types, particularly multi-shaft systems. Sensors are installed in or on the machine to measure vibration, position, speed, pressure, power, and other parameters.

Multi-shaft systems can include:

- Machine trains, for example, steam turbine to boiler feed pump to gearbox to booster pump.
- Machines with more than one shaft.

Related reference

[Machine Unit Parameters](#)

Shafts

Each machine unit can have one or multiple shafts. A shaft is a rotating, reciprocating, or oscillating component of a machine, usually operating within a cylinder or housing.

Related reference

[Shaft Parameters](#)

Points

A point is a unique data collection location, for example, a vibration sensor mounted adjacent to a rotor shaft. One point must be configured for each set of measurement data collected. Digital, analogue and vibration point types can be created.

Related reference

[Point Parameters](#)

Racks

A VM600 series rack from Meggitt Sensing Systems' Vibro-Meter product line contains a combination of condition monitoring, machinery protection, input/output, relay, and power supply cards. This includes the XMV16 / XIO16T and XMC16 / XIO16T card pairs.

Related reference

[VM600 Rack parameters](#)

Cards

XMV16 and XMC16 extended monitoring cards are completely software configured using the VibroSight Configurator software.

All of these cards are designed specifically for use with the machinery protection equipment from Meggitt Sensing Systems' VM600 product line. See the topics in the *VibroSight hardware help* section of this help for more detailed information.

Related reference

[VM600 XMV16 card parameters](#)

[VM600 XMC16 card parameters](#)

Input channels

An input channel is the hardware path that measurement data takes. For example, from a measurement device such as a sensor, through a XMV16 measurement card in a VM600 rack or a VSV30x measurement module in a VibroSmart DMS, then through to the VibroSight software.

Types of input channel

Different input channels contain dedicated electronic circuitry for working with different types of electrical signal, such as tachometer channels for speed signals and dynamic channels for analog signals.

VM600 XMx16 cards

VM600 XMx16 cards support:

- 16 dynamic input channels for vibration or pressure signals.
- 4 tacho input channels for speed and phase reference signals.

Note:

Refer to a VM600 XMx16 card data sheet for further information and detailed specifications on input channels.

VibroSmart DMS modules

VibroSmart VSV30x modules support:

- 2 dynamic input channels for vibration or pressure signals.
- 1 auxiliary input channel configurable for either a speed signal or a DC signal.

Note:

Refer to a VibroSmart DMS module data sheet for further information and detailed specifications on input channels.

Related concepts

[Processing blocks](#)

Speed Channels

An input channel assigned to an input signal that measures the velocity of a point, usually in terms of RPM. Also called a *tacho* signal.

- [Minimum tracked speed](#)
When a VM600 XMx16 dynamic channel is configured for order tracking, there is a minimum tracked speed below which the digital resampler on the XMx16 card cannot work and measurement data cannot be provided.

Minimum tracked speed

When a VM600 XMx16 dynamic channel is configured for order tracking, there is a minimum tracked speed below which the digital resampler on the XMx16 card cannot work and measurement data cannot be provided.

Accordingly, when the tachometer channel providing a 1/REV pulse as a speed reference to an order tracking dynamic channel goes below the technical limit for the minimum tracked speed, the data quality indicator for the associated outputs will be bad.

Note:

For each dynamic channel configured for order tracking, it is the maximum of the “technical limit for the minimum tracked speed” and the “user configurable limit for the minimum tracked speed” that is used. For example, if the user configurable limit for the minimum tracked speed is lower than the technical limit for the minimum tracked speed, then the technical limit is used (the user configurable limit is ignored).

Technical limit for the minimum tracked speed

The technical limit for the minimum tracked speed is defined by the size of the memory on a VM600 XMx16 card that is allocated to the digital resampler and the parameters configured for the card’s individual dynamic channels. Basically, if the waveform configured for the principal measurement mode can fit into the digital resampler then the XMx16 card can generate and provide measurement data (if the waveform cannot fit into the digital resampler then order tracked measurements cannot be provided).

So, for each dynamic channel configured for order tracking, the technical limit for the minimum tracked speed is defined by the bandwidth of the resampler (in orders for order tracking) and the waveform size (points) configured by the user. (Together, these parameters determine the number of rotations required per waveform.)

At the Dynamic Processing Block node level, under Resampler Settings, the Sampling Mode (Order Tracked) and the Bandwidth (nX orders) are configured.

For the Dynamic Processing Block, at the Spectra and Waveforms node level, under Waveform and Spectrum Processing, on the Principal Mode tab, Waveform Size is used to select the resolution of the waveform and the spectrum (Spectrum Size is for information only and cannot be edited directly).

Based on the parameters configured by the user, VibroSight automatically calculates the technical limit for the minimum tracked speed for each dynamic channel. The result of this calculation is displayed in the Computed at Min Speed of field (available for a Dynamic Processing Block, at the Spectra and Waveforms node level, under Waveform and Spectrum Processing, on the Principal Mode tab, under Spectrum).

User configurable limit for the minimum tracked speed

In addition to the technical limit for the minimum tracked speed, there is a user configurable limit for the minimum tracked speed that can be used if the user is not interested in measurements at speeds down to the technical limit.

At the Tacho Processing Block node level, Minimum Tracked Speed is used to enter the user configurable limit for the minimum tracked speed.

Parent topic: [Speed Channels](#)

Processing blocks

A processing block defines the signal processing performed on an input channel in order to produce the required measurements for physical output and data presentation in VibroSight.

Types of processing block

Different processing blocks use dedicated signal processing functions for working with different types of input channel in order to generate the required measurements (processed outputs and extracted data).

In general, VM600 XMx16 cards and VibroSmart DMS modules provide one processing block per input channel.

VM600 XMx16 cards

VM600 XMx16 cards support:

- 16 dynamic processing blocks (that is, one per dynamic input).
- 4 tacho processing blocks (that is, one per tacho input).

In addition, VM600 XMV16 and XMVS16 cards support:

- 12 dual-channel processing blocks.

The dual-channel processing blocks use the (single-channel) dynamic processing blocks as inputs in order to provide more advanced processing functions such as dual shaft absolute vibration and dual shaft relative vibration with outputs such as orbits, filtered orbits, shaft centerline, $S_{\max}$ and full spectrum.

Note:

The 12 dual-channel processing blocks per XMV16 and XMVS16 card can be configured with a maximum of 8 dual shaft relative processing blocks *or* a maximum of 8 dual shaft absolute processing blocks:

- Up to 8 dual shaft absolute processing blocks can be used when the spectrum resolution (Principal Mode) for the dynamic

processing blocks used as inputs to the dual shaft absolute processing blocks is configured as 800 lines or lower.

- Up to 4 dual shaft absolute processing blocks can be used when the spectrum resolution (Principal Mode) for the dynamic processing blocks used as inputs to the dual shaft absolute processing blocks is configured as higher than 800 lines.

For example, the following XMV16 and XMVS16 card configurations are permitted:

- Four tacho processing blocks and sixteen dynamic processing blocks, with eight dual shaft relative and four dual shaft absolute processing blocks (6400-line spectra).
- Four tacho processing blocks and sixteen dynamic processing blocks, with four dual shaft relative and eight dual shaft absolute processing blocks (800-line spectra).

For VM600 XMx16 cards, there is a 1:n relationship between the input channels and the processing blocks. That is, an input channel can be mapped to and used by more than one processing block.

Note:

Refer to a VM600 XMx16 card data sheet for further information and detailed specifications on processing blocks.

VibroSmart DMS modules

VibroSmart DMS modules support:

- 3 processing blocks (that is, two for the dynamic inputs and one for the auxiliary input).

Different processing blocks are available for use with different inputs, in order to provide different measurements:

- Asynchronous absolute bearing vibration – for use with dynamic inputs.
- Shaft relative vibration – for use with dynamic inputs.
- Narrow band vibration – for use with dynamic inputs.
- Tacho – for use with an auxiliary input configured as a speed signal.
- Position – for use with an auxiliary input configured as a DC signal or with dynamic inputs.
- Broad band pulsation – for use with dynamic inputs (pressure).
- Dual shaft relative – for use with the (single-channel) shaft relative vibration processing blocks as inputs in order to provide more advanced outputs, including orbits and $S_{\max}$ ($S_{\max}$ and/or X-Y max discriminator).

For VibroSmart DMS modules, there is a 1:1 relationship between the input channels and the processing blocks. That is, an input channel can be mapped to and used by only one single processing block.

Note:

Refer to a VibroSmart DMS module data sheet for further information and detailed specifications on processing blocks.

- [S_{max} processing](#)
S_{max} is a vibration measurement used in machinery monitoring systems, defined in ISO 7919-1 as the maximum vibratory displacement in the plane of measurement.

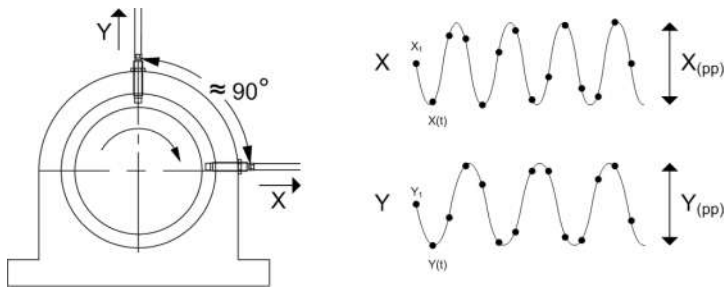
Related concepts

[Input channels](#)

S_{max} processing

S_{max} is a vibration measurement used in machinery monitoring systems, defined in ISO 7919-1 as the maximum vibratory displacement in the plane of measurement.

S_{max} monitoring is a special case of shaft relative vibration monitoring that measures the radial motion of the shaft. Like shaft relative vibration, it is typically measured using two proximity transducers (X and Y) mounted on the machine bearing at approximately 90° to each other, as shown below.



Measurement of $S_{\max}$ using two proximity transducers

In general, $S_{\max}$ processing extracts the peak amplitude of the vector described by the X and Y waveforms, corresponding to the maximum amplitude value of an orbit (maximum displacement). It is generally calculated over several rotations of the shaft.

There are different methods of calculating $S_{\max}$, defined as methods A, B and C in ISO 7919-1 Annex B.

In VibroSight Configurator, $S_{\max}$ processing is configured at the Processing blocks node level, by adding a Dual shaft relative processing block (with shaft relative vibration processing blocks as inputs), then adding an $S_{\max}$ data entity to the Dual shaft relative processing block. In addition, for VibroSmart VSV30x modules, the $S_{\max}$ data entity can be further configured to use either ISO 7919-1 method C in order to provide an $S_{\max}$ value or ISO 7919-1 method B in order to provide an X-Ymax discriminator value.

In VibroSight Vision, $S_{\max}$ and X-Ymax measurements are available as scalar data entities.

Method A – Resultant value of the peak-to-peak displacement values measured in two orthogonal directions

According to ISO 7919-1 method A, the value of $S_{\max(pp)}$ can be approximated from the following equation:

$$S_{\max(pp)} = (X_{(pp)}^2 + Y_{(pp)}^2)^{0.5}$$

However, according to ISO 7919-1, this method can overestimate the value of $S_{\max(pp)}$ by up to 40 (approximately).

Method B – Taking the maximum value of the peak-to-peak displacement values measured in two orthogonal directions

According to ISO 7919-1 method B, the value of $S_{\max(pp)}$ can also be approximated from the following equation:

$$S_{\max(pp)} = \text{Maximum} \{ X_{(pp)}^2, Y_{(pp)}^2 \}$$

(That is, taking whichever is the greater.)

However, according to ISO 7919-1, this method can underestimate the value of $S_{\max(pp)}$ by up to 30 (approximately).

Note:

The $S_{\max}$ processing implemented on VibroSmart VSV30x modules uses ISO 7919-1 method B to calculate the value of X-Ymax discriminator, that is, an output (true peak) corresponding to the higher of the two input signals.

The Dual mathematical function processing implemented on VM600 MPC4 cards can be configured as X Y MAX in order to use ISO 7919-1 method B to calculate an $S_{\max}$ value.

Method C – Measuring the real maximum displacement value ($S_{\max}$) directly from the orbit

According to ISO 7919-1 method C, the value of $S_{\max(pk)}$, the maximum value of displacement, can be calculated directly from the orbit using the following equation:

$$S_{\max(pk)} = \text{Maximum} \{ (X(t)^2 + Y(t)^2)^{0.5} \}$$

This also allows the value of $S_{\max(pp)}$ to be approximated from the following equation:

$$S_{max(pp)} = 2 \times S_{max(pk)}$$

Note:

The S_{max} processing on VM600 MPC4 cards, VM600 XMV16 cards and VibroSmart VSV30x modules uses ISO 7919-1 method C to calculate the value of S_{max} .

However, since the actual signal processing implemented by VM600 MPC4 cards, VM600 XMV16 cards and VibroSmart VSV30x modules is different, the calculated S_{max} values obtained from their respective S_{max} processing functions can be slightly different.

Parent topic: [Processing blocks](#)

Related reference

[VibroSmart VSV30x dual shaft relative processing block - Smax data entity](#)

Measurement modes

For VM600 XMx16 cards, the dynamic processing blocks associated with dynamic input channels acquire measurement data using different measurement modes that can be configured for a processing block: principal mode and auxiliary mode.

Principal mode

Most of the time, machines being monitored operate under nominal, steady state conditions without any alarms or malfunctions. In this case, it is normally sufficient to monitor the trend of a certain number of extracted variables using the principal measurement mode.

The extracted data is processed based on dynamic data (waveform or spectrum) with a moderate amount of data samples or frequency lines. The data measured in this mode is referred to as *principal mode data*.

In VibroSight Vision, principal mode data is available as waveforms, spectra and extracted variables.

Auxiliary mode

To complement the measurements obtained using the principal data acquisition mode, the auxiliary data acquisition mode allows more detailed measurement data (such as higher resolution waveforms and spectra) to be obtained from the machinery being monitored, at reduced update rates.

In VibroSight Vision, auxiliary mode data is available as waveforms and spectra.

Note:

By default, the principal measurement mode is enabled and the auxiliary measurement mode is disabled.

The different measurement modes are configured at the Spectra and Waveforms node level for a dynamic processing block using the corresponding Principal Mode and Auxiliary Mode tabs under Waveform and Spectrum Processing.

- [Principal measurement mode](#)
Measurement data is acquired from VM600 XMx16 cards using different measurement modes that are configured for a processing block: principal mode and auxiliary mode.
- [Auxiliary measurement mode](#)
Measurement data is acquired from VM600 XMx16 cards using different measurement modes that are configured for a processing block: principal mode and auxiliary mode.

Related concepts

[Principal measurement mode](#)

[Auxiliary measurement mode](#)

Principal measurement mode

Measurement data is acquired from VM600 XMx16 cards using different measurement modes that are configured for a processing block: principal mode and auxiliary mode.

Note:

By default, the principal measurement mode is enabled and the auxiliary measurement mode is disabled.

The different measurement modes are configured at the Spectra And Waveforms node level for a dynamic processing block using the corresponding Principal Mode and Auxiliary Mode tabs under Waveform and Spectrum Processing.

Principal mode

The principal measurement mode is the main data acquisition mode for VM600 XMx16 cards and is used to obtain measurements (waveforms, spectra and extracted data entities) from a dynamic input channel. The measurements are acquired continuously (every 1 second) and can also be periodically logged in the VibroSight Server database. The principal mode is suitable for normal operation of the machinery being monitored, such as increasing vibration levels and the capture of transients.

Note:

The principal measurement mode (Principal Mode) data can be logged in the VibroSight Server database.

Principal mode waveforms and spectra are obtained by sampling at a frequency that is 2.56 times the bandwidth configured by the user for the dynamic processing block. The size (resolution) of the waveforms and spectra are configured independently for the principal measurement mode, as are averaging (time or frequency domain), window function (spectrum) and the update rate. Integration is also available in the principal measurement mode.

The waveforms and spectra acquired in the principal measurement mode are then used to obtain the measurements (for example, extracted data entities in the frequency and/or time domains) which are typically used for the trending of the parameters of interest for the machinery being monitored.

Parent topic: [Measurement modes](#)

Related concepts

[Measurement modes](#)

[Auxiliary measurement mode](#)

Related tasks

[Configuring the principal measurement mode](#)

Auxiliary measurement mode

Measurement data is acquired from VM600 XMx16 cards using different measurement modes that are configured for a processing block: principal mode and auxiliary mode.

Note:

By default, the principal measurement mode is enabled and the auxiliary measurement mode is disabled.

The different measurement modes are configured at the Spectra And Waveforms node level for a dynamic processing block using the corresponding Principal Mode and Auxiliary Mode tabs under Waveform and Spectrum Processing.

Auxiliary mode

The auxiliary measurement mode allows a waveform and a spectrum from a dynamic channel to be acquired and periodically logged in the VibroSight data repository (VibroSight historical data folder (*.vshdf)). The auxiliary mode is typically used to obtain waveforms and spectra with more detail (higher resolution) but at slower update rates, in order to supplement the measurement data obtained using the principal mode.

Note:

Like the principal measurement mode (Principal Mode), the auxiliary measurement mode (Auxiliary Mode) data can be logged in the VibroSight data repository (VibroSight historical data folder (*.vshdf)).

Auxiliary mode waveforms and spectra are obtained by sampling at the same frequency as the principal measurement mode, that is 2.56 times the bandwidth configured by the user for the dynamic processing block. But the size (resolution) of the waveforms and spectra are configured separately for the auxiliary measurement mode, as are averaging (time or frequency domain), window function (spectrum) and the update rate. However, no integration is available in the auxiliary measurement mode.

Parent topic: [Measurement modes](#)

Related concepts

[Measurement modes](#)

[Principal measurement mode](#)

Related tasks

[Configuring the auxiliary measurement mode](#)

Extracted Variables

Tacho speed extraction elements allow you to define extracted variables for the associated speed channel.

Spectra and Waveforms

Spectra and waveforms are a data group/type extracted from an associated dynamic processing block.

Frequency

Frequency domain data are a data group/type extracted from an associated dynamic processing block.

Combustion Monitoring Processing Blocks

A Combustion Monitoring processing block is a container for combustion monitoring data processed for a machine. Using VibroSight Vision, you can import the data contained in a processing block and display it on special Combustion Monitoring plots such as the Moniturbine plot.

Related reference

[VibroSight Configurator VibroSight Server parameters](#)

Discrete signal interface

The discrete signal interface (DSI) provides control signals for the different types of hardware from Meggitt Sensing Systems' Vibro-Meter product line. These control inputs allow certain functions of the cards in a VM600 rack or the modules in a VibroSmart DMS to be controlled in response to external signals, for example, coming from a control room.

In general, the DSI inputs are available on one of the connectors to the device and a closed contact between a DSI input and the DSI common (that is, a short-circuit to ground) activates the DSI signal and its associated function.

The DSI signals and control functions available for Meggitt Sensing Systems' products are:

- Alarm bypass (AB)

The AB input is used to temporarily inhibit the alert and danger alarm outputs (Danger , Alert , Alert , Danger), and any associated relays, in a VibroSmart DMS. See also danger bypass (DB).

- Alarm reset (AR)

The AR input is used to reset (clear) the alarms (Danger , Alert , Alert , Danger), and any associated relays, that have been latched by the device.

- Danger bypass (DB)

The DB input is used to temporarily inhibit the danger alarm outputs (Danger , Danger), and any associated relays, for VM600 cards. See also alarm bypass (AB).

- Trip multiply (TM)

The TM input is used to temporarily increase the configured alarm levels (Danger , Alert , Alert , Danger) by a configured multiplying factor, for the device.

Note:

The DSI signals available for a device depend on the specific product. Not all DSI signals are available on every product.

Refer to a VM600 card or VibroSmart DMS module data sheet for further information and detailed specifications.

VM600 Card For VM600 cards, the DSI functions are controlled by the corresponding electrical signals on the DSI pins of the connector to the device only.

VibroSmart DMS For VibroSmart DMS modules, the DSI functions are controlled by either the corresponding electrical signals on the DSI pins of the connector to the device or by software commands issued from VibroSight Scope under user control.

In addition, for the VibroSmart DMS modules in a measurement block, it is possible for a single module to be configured as the DSI Master in order to share its DSI signals (electrical signals and software command) as common DSI control inputs for all of the devices in the measurement block. This feature can be used to reduce external wiring requirements and potential interconnection failures.

VibroSmart DMS logical functions

The VibroSmart DMS provides logical functions that allow the alarm and status information for a VibroSmart module to be logically combined to form aggregate bits (flags), which can be used to drive relay outputs.

Note: For measurement modules such as the VSV30x, only the alarm and status information local to the module can be used as inputs to the module's basic logical functions. However, for the VSI010 communications interface module, the alarm and status information from all of the modules in the same measurement block as the VSI010 can be used as inputs to the VSI010's basic logical functions.

Two types of logical function are implemented: basic logical functions and advanced logical functions.

Note: The number of basic logical functions and advanced logical functions available on a VibroSmart DMS module depends on the type

of the module.

Basic logical functions

A basic logical function is obtained by applying one of the following logical operators on selected alarm bits and/or status bits (module or sensor):

- A logical (Boolean) AND
- A logical (Boolean) OR
- A majority voting function.

The majority voting function requires that a configured number of inputs is true (n out of m) in order to have an output that is true.

Any of the inputs to a basic logical function can be individually inverted, that is, a logical (Boolean) NOT function.

Advanced logical functions

An advanced logical function is obtained by applying one of the following logical operators on the outputs of the basic logical functions:

- A logical (Boolean) AND
- A logical (Boolean) OR
- A majority voting function.

The majority voting function requires that a configured number of inputs is true (n out of m) in order to have an output that is true.

Any of the inputs to an advanced logical function can be individually inverted, that is, a logical (Boolean) NOT function.

VibroSmart DMS outputs

The VibroSmart DMS provides relay outputs and analog outputs that can be driven using information and signals from a VibroSmart module.

Note: For measurement modules such as the VSV30x, the alarm and status information and the logical functions local to the module can be used to drive a module's relay outputs. For the VSI010 communications interface module, the logical functions local to the module can be used to drive a module's relay outputs.

Note: For measurement modules such as the VSV30x, extracted data entities (DC) or processed outputs (AC) local to the module can be used to drive a module's analog outputs.

Two types of analog outputs are implemented: 4-20 mA (DC) and $5 V_{PEA}$ (AC).

Note: The types and number of outputs available on a VibroSmart DMS module depends on the type of the module.

Relay outputs

Note:

Normally De-energized (NDE) and Normally Energized (NE) refer to the relay coil state (that is, the relay switching circuit) when the hardware is powered and the signal driving the relay's control circuit is in a normal (non-alarm) condition.

A relay can be configured to be:

- Normally De-energized (NDE) or Normally Energized (NE)

For relays configured as Normally De-energized (NDE), the control input to the relay's coil is off by default so there is a closed circuit between the NC and COM contacts (and an open circuit between the NO and COM contacts) for a normal condition.

For relays configured as Normally Energized (NE), the control input to the relay's coil is on by default so there is an open circuit between the NC and COM contacts (and a closed circuit between the NO and COM contacts) for a normal (non-alarmed) condition. An advantage of NE relays is that the "de-energise to trip principle" allows problems with hardware to be detected (for example, due to power supply or wiring failures).

- Latched (or not)

Relays configured as latched will remain "tripped" (that is, in the state caused by the alarm condition) even if there is a change to the operating conditions that caused the alarm. The advantage of latched alarms is their permanence: these alarms should not be missed as they can only be cleared manually, using either the external alarm reset input signal (DSI AR) or a software command from VibroSight.

Relays not configured as latched will remain “tripped” (that is, in the state caused by the alarm condition) for the duration of the operating conditions that cause the alarm only. Because of this, unlatched alarms are more likely to be missed.

Analog outputs

An analog output can be configured to be either:

- 4-20 mA output (DC)

Analog outputs configured as DC outputs can be used for quasi-static module signals, such as extracted data.

Note:

Analog outputs configured as 4-20 mA outputs (DC) are nominally 4-20 mA. Depending on how they are configured, the actual output signal can have a signal range of either 4-20 or 2-23 mA.

- 5 V_{PEA} output (AC)

Analog outputs configured as AC outputs can be used for processed module signals, such as an AC filtered version of a dynamic input signal.

Note:

For a VibroSmart DMS module, all of the analog outputs must be configured to operate in the same mode (AC or DC).

Related tasks

[Adding a VibroSmart DMS output](#)

[Configuring a VibroSmart DMS analog output](#)

[Removing a VibroSmart DMS output](#)

Consistency checks

A configuration is not a simple set of independent elements: many elements of the configuration are related to each other. Changing a parameter of one element can have an impact on other elements further down or up the configuration’s hierarchy.

The Consistency Tool window provides a way to visually check the consistency of the complete configuration and not only the currently displayed configuration element.

A consistency check can be run at any time. The current implementation of VibroSight Configurator consistency checking verifies whether a value in a parameter field is:

- within its range (for example, that a sensor orientation value is between 0 and 359.999 °, or -179.999 and 179.999°, depending on the angle convention used)
- within its upper and lower limit (for example, that a low speed cutoff value is greater than the low speed trigger value).

Related concepts

[VibroSight Configurator user interface](#)

Related reference

[The Consistency Check Window](#)

Data logging

Data logging is used in VibroSight in order to allow the permanent storage of *live data* that is streamed from its measurement source. In this way, a permanent record of the behaviour of machinery over time (*historical data*) is created that can be consulted at any time.

Configuration

Data logging allows the user to decide which information that is streamed from the cards to keep and which information to discard:

- Data Storage groups are used to group together data entities for data logging reasons.
- Data Logging Rules are used to decide under what system conditions that data should be logged for the data storage groups.

Data Storage groups and Data Logging Rules are used to decide the data points to record and the rate at which they should be recorded. For example, all points related to a non-critical parts of the machine could be grouped together and logged at a low frequency interval (say, every hour). Other, more critical points could be grouped together and logged during transients or alarm states/conditions. Further, data logging rules can use time, machine speed (RPM), alarms and machine states to change their behaviour.

Note:

Logging rules dictate how much information is stored in the VibroSight data repository (VibroSight historical data folder (*.vshdf)) for later retrieval. It is the logging rules that most directly affect how quickly the database used by the system grows and therefore, the ultimate storage requirements of your system.

The Data Storage view window in VibroSight Configurator is used to configure and change the Data Storage groups and Data Logging Rules for a project.

Like other elements of the configuration, the data logging cannot be changed when a VibroSight project is running. A configuration must go through the usual process of editing, saving as a VibroSight server / database and activation (where the server must be restarted) before any logging changes take effect.

Related tasks

[Working with data logging](#)

Events logging

Events logging is used in VibroSight in order to allow the permanent storage of events that stream from the measurement source and from the measurement system. In this way, a permanent record of the behaviour of machinery and VibroSight itself over time (*historical data*) is created that can be consulted at any time.

The different types of event that can be logged are:

- Alarm events – depending on severity level ( Danger (4) ,  Alert (3) ,  Information (2) ,  Normal (1) and  Out of Range (0))
- VibroSight system events – depending on event level ( Error,  Warning and  Information).

Alarm events

Alarm events refer to the criticality of operating conditions experienced by the machine. For example, when the vibration level of trend data (of an extracted data entity) rises beyond a given level, the integrity of the machine can be endangered.

System events

System events refer to the CMS/MPS itself and concerns the operating conditions experienced by the monitoring system that do not necessarily imply a problem at the machine level. Examples, include running out of disk storage space or problems with time references.

Configuration

Events logging allows the user to decide which information that is streamed from the measurement source and the measurement system to keep and which information to discard:

- Events Storage groups are used to group together event entities for events logging reasons.
- Events Logging Rules are used to decide under what system conditions that events should be logged for the events storage groups.

Events Storage groups and Events Logging Rules are used to decide the events to record and the conditions under which they should be recorded. For example, only high severity level events ( Danger (4)) could be logged and all other less critical events ( Normal (1)) could be ignored. Further, conditions, such as machine speed (RPM), can be applied to events logging rules.

Note:

Logging rules dictate how much information is stored in the VibroSight data repository (VibroSight historical data folder (*.vshdf)) for later retrieval. It is the logging rules that most directly affect how quickly the database used by the system grows and therefore, the ultimate storage requirements of your system.

The Data Storage view window in VibroSight Configurator is used to configure and change the Events Storage groups and Events Logging Rules for a project.

Like other elements of the configuration, the events logging cannot be changed when a VibroSight project is running. A configuration must go through the usual process of editing, saving as a VibroSight server / database and activation (where the server must be restarted) before any logging changes take effect.

Related tasks

[Working with events logging](#)

Machine states (machine operating conditions)

VibroSight uses a system of machine states (machine operating conditions) to describe the operating states of the machinery being monitored.

During typical operation, a machine will pass through a series of operating states. The number of machine operating states, and the naming conventions used, depends on the field of application, for example gas turbines or hydro turbines. In general, however, the machine states (machine operating conditions) are related to the rotational speed and power of the machine.

For example, the machine states (machine operating conditions) of a gas turbine might be classified as follows:

- Sub transient – speed less than 50 RPM
- Turning gear – speed between 50 and 250 RPM
- Transient – speed between 251 and 2950 RPM
- Running on load – speed between 2951 and 3050 RPM
- Overspeed – speed greater than 3050 RPM.

Steady-state or transient

Machine states (machine operating conditions) can be classified in two groups based on the rates of change involved:

- Steady-state conditions occur when the machine operates under stable operating conditions. For example, running on load – with a constant rotational speed of the machine shaft and consistent power.
- Transient conditions occur when the machine operates under changing operating conditions. For example, a run-up or a coastdown – with an increasing or decreasing rotational speed of the machine shaft.

Basic mathematical post-processing

Basic mathematical post-processing allows new data to be created using the existing measurement data available in a system.

VibroSight Configurator can be used to configure VibroSight Server to create new data by performing basic mathematical post-processing on existing data. A library of mathematical operators, functions and constants is available in VibroSight Configurator that can be used to perform the required mathematics.

The mathematical post-processing is performed by the VibroSight Server, at the same data update rate as the existing measurement data (once per second). The resultant data is available for selection/viewing in the same way as measurement data in VibroSight Vision.

Related reference

[VibroSight Configurator VibroSight Server parameters](#)

Severity levels

VibroSight implements a colour-coded system of predefined severity levels, that are used consistently by all of the software modules, for example, to monitor and log events, including alarms.

Alarm severity levels can also be added as conditions to data logging rules.

A change from one severity level to another, which occurs when the value of an measurement (extracted data entity) reaches a severity threshold (defined by the alarm limits configured for the measurement), automatically generates a severity event which can be displayed by VibroSight Event Viewer.

Note:

Only a subset of the severity levels available in VibroSight are used in VibroSmart DMS-based systems.

Terminology

For compatibility with existing Meggitt Sensing Systems' products, VibroSight allows two different sets of terminology to be used: Standard and CMS. The only difference between these conventions is with the names used by the severity levels: in all other ways, they are both treated exactly the same by the VibroSight software.

Note:

Unless you are a Meggitt Sensing Systems' product user with a VM600 CMS software background, it is recommended to use the Standard severity level convention.

Related reference

[Severity levels and colour-coding for VM600 rack-based systems](#)

[Severity levels and colour-coding for VibroSmart DMS-based systems](#)

Starting VibroSight Configurator

There are several ways in which VibroSight Configurator can be started.

For example:

- From a Windows Explorer, by double-clicking a configuration file for a VibroSight Server (*.vscfg), a configuration file for a VibroSight Modbus Server (*.mscfg) or a configuration file for a VibroSight OPC Server (*.opcscfg).
- From a shortcut to the VibroSight Configurator executable program file ( XmsConfigurator.exe) on the Windows desktop.
- From the Windows Start menu, by clicking the Start button, then clicking All Programs Meggitt VibroSight Configurator.
- From the VibroSight Welcome Center, by clicking Configurator.

Starting VibroSight Configurator by double-clicking a configuration file for a VibroSight Server (*.vscfg), a VibroSight Modbus Server (*.mscfg) or a VibroSight OPC Server (*.opcscfg) in a Windows Explorer will start VibroSight Configurator and automatically open the configuration.

The other ways of starting VibroSight Configurator listed above will not open a configuration file. This allows a new configuration for a VibroSight Server, VibroSight Modbus Server or VibroSight OPC Server to be created or an existing configuration to be opened from a file, server/database or VibroSmart DMS device.

Related reference

[Default VibroSight files](#)

Managing VibroSight Server configurations

You can easily create new VibroSight Server configurations, or reopen existing configurations and modify their properties.

- [Creating a VibroSight Server configuration](#)
A VibroSight Server configuration contains all of the parameters of a VibroSight-compatible hardware measurement chain, including both the machinery being monitored and the monitoring equipment.
- [Configuring the principal measurement mode](#)
Measurement data is acquired from VM600 XMx16 cards using different measurement modes and the principal mode is used to obtain measurements (waveforms, spectra and extracted data entities) continuously (every 1 second) during the normal operation of the machinery being monitored.
- [Configuring the auxiliary measurement mode](#)
Measurement data is acquired from VM600 XMx16 cards using different measurement modes and the auxiliary mode is used to obtain measurements (waveforms and spectra) with more detail (higher resolution) than those obtained using the principal mode, but at slower update rates.
- [Checking for configuration errors](#)
A consistency check can be run at any time.
- [Opening a configuration for a VibroSight Server](#)
A configuration for a VibroSight Server can be opened from a file, a server / database, a device or a historical data archive.
- [Saving a configuration for a VibroSight Server](#)
A configuration for a VibroSight Server can be saved either as a file or as a VibroSight Server and database.
- [Apply changes to \(activate\) a running configuration](#)
After a configuration for a VibroSight Server has been created or changed, it must be uploaded to and applied to a running configuration (typically a VibroSight Server) in order to actually run on the VM600 XMx16 cards and/or VibroSmart modules.
- [Reverting to a running VibroSight Server configuration](#)
When working with a configuration for a VibroSight Server, the configuration running on the VibroSight Server can be reverted to, replacing (overwriting) the currently open VibroSight Server configuration.
- [Renaming a configuration for a VibroSight Server](#)
You can rename a configuration for a VibroSight Configurator. All information about the configuration is written to the new configuration file that you specify.
- [Closing a configuration for a VibroSight Server](#)
You can close a configuration for a VibroSight Configurator if, for example, you want to start working on a different configuration.

Related concepts

[VibroSight Server configurations](#)

Related reference

[Configuration root parameters](#)

Creating a VibroSight Server configuration

A VibroSight Server configuration contains all of the parameters of a VibroSight-compatible hardware measurement chain, including both the machinery being monitored and the monitoring equipment.

Note:

A VibroSight Server configuration is the starting point for all VM600 rack and/or VibroSmart measurement block configurations, even for VibroSmart measurement block configurations that do not use a VibroSight Server (that is, “stand-alone” VibroSmart systems).

1. Start a new VibroSight Server configuration in one of the following ways:
 - a. Click  New on the toolbar and then click VibroSight Server Configuration.
 - b. Or click File New VibroSight Server Configuration.
2. If the current configuration has been modified since it was last saved, you are prompted to save the changes before continuing. Click Yes to save the changes and continue.

A new, empty configuration is displayed with a  Configuration Root element in the Machinery View and Data Storage view tool windows, and a  Configuration Root element with a  child VibroSight Server element in the Hardware View tool window.

3. Add elements to the configuration by right-clicking on existing elements, choosing the element to add from the shortcut menu that appears, then configuring the new element’s parameters in the central area of the main window.

For example, to add a new VM600 rack and XMx16 card to the configuration:

- a. In the Hardware View, right-click on the  Configuration Root element, then click New VM600 Rack.

A new VM600 rack is added to the configuration with the next available default rack name and the main working area of VibroSight Configurator displays the parameters for the rack.

- b. Right-click on the  VM600 Rack element, then click New XMC16, New XMV16 or New XMVS16 as appropriate.

A new XMx16 card is added to the VM600 rack with the next available default card name and the main working area of VibroSight Configurator displays the parameters for the card. The XMx16 card contains Input Channels and Processing Blocks child nodes that are displayed in the Hardware View.

And to add a tachometer input channel and tacho processing block to the XMx16 card:

- a. In the Hardware View, right-click on the  Input Channels node, then click New Tacho Input Channel.

A new Tacho Input Channel is added to the configuration with the next available default tacho input channel name and the main working area of VibroSight Configurator displays the parameters that can be configured for the tacho input channel.

- b. Right-click on the  Processing Blocks node, then click New Tacho Processing Block.

A new Tacho Processing Block is added to the configuration with the next available default tacho processing block name and the main working area of VibroSight Configurator displays the parameters that can be configured for the tacho processing block.

- c. In the parameters window, use the Tacho Input Channel drop-down list box to select the tacho input channel to use as the input to this tacho processing block. (Select the tacho input channel that was configured in a previous step.)
- d. Right-click on the Tacho Processing Block node, then click New Speed Extraction.

A new Speed Extraction is added to the configuration with the next available default speed extraction name and the main working area of VibroSight Configurator displays the parameters that can be configured for the speed extraction.

4. Check for consistency errors in the configuration by clicking the  Run button in the Consistency Check window. Correct all errors and warnings listed.
5. The configuration should be saved periodically or when it is complete:
 - a. Use File Save As File to save the configuration as a file (*.vscfg).

Note:

Saving a configuration as a file is a useful temporary step for configurations that are not yet complete.

- b. Use File Save As Server / Database to save the configuration as a VibroSight Server / Database.

Note:

Saving a configuration as a server / database creates a VibroSight Server (server instance name) and a VibroSight data repository (VibroSight historical data folder (*.vshdf)), then automatically starts the VibroSight Server using the VibroSight data repository.

The default location for VibroSight data repositories is under VibroSight’s default data folder (data path directory), typically, C: VibroSight Data

A VibroSight historical data folder is identified by a *.vshdf file and an associated Storage subfolder.

6. After the configuration is saved, the  Apply changes to running configuration toolbar button can be used to activate the configuration.

Parent topic: [Managing VibroSight Server configurations](#)

Related concepts

[VibroSight Server configurations](#)

Related tasks

[Creating a VibroSight Modbus Server configuration](#)

[Creating a VibroSight OPC Server configuration](#)

Related reference

[The Consistency Check Window](#)

[VibroSight Configurator Standard toolbar](#)

[Configuration root parameters](#)

Configuring the principal measurement mode

Measurement data is acquired from VM600 XMx16 cards using different measurement modes and the principal mode is used to obtain measurements (waveforms, spectra and extracted data entities) continuously (every 1 second) during the normal operation of the machinery being monitored.

Note:

By default, the principal measurement mode is enabled and the auxiliary measurement mode is disabled.

The different measurement modes are configured at the Spectra And Waveforms node level for a dynamic processing block using the corresponding Principal Mode and Auxiliary Mode tabs under Waveform and Spectrum Processing.

In order for a VibroSight Server to use the waveforms, spectra and extracted data entities acquired by a VM600 XMx16 card in principal measurement mode:

- The principal measurement mode (Principal Mode) must be enabled (Output State) and configured in the hardware view at the Spectra And Waveforms level, under the processing block.
- A data logging rule in the Data Storage View must be added and configured to log the principal mode measurements (waveforms, spectra and/or extracted data entities) in the VibroSight data repository (VibroSight historical data folder (*.vshdf)).
- The logging of principal measurement data must also be enabled at the VibroSight Server level (Data Logging Database Logging).

To configure the principal measurement mode:

1. Configure principal measurement mode data acquisition in the Hardware View:
 - a. At the Spectra And Waveforms node level for the dynamic processing block, ensure that the Principal Mode tab under Waveform and Spectrum Processing has the output states set to Enabled. The Output State is configured independently for the waveform (under Waveform) and spectrum (under Spectrum) outputs.
 - b. The Principal Mode tab under Waveform and Spectrum Processing is also used to set the resolution (size) of the required measurements. This is configured using Waveform Size (under Waveform) and automatically calculated for the Spectrum Size (under Spectrum). The window function to be used for the spectrum must also be configured using Window Type (under Spectrum).

Note:

The waveform size and the spectra size have a fixed relationship. That is, $Spectrum\ Size = Waveform\ Size / 2.56$

- c. The Principal Mode tab under Waveform and Spectrum Processing is also used to select the window function to be used for the spectrum using Window Type (under Spectrum).
- d. At the dynamic processing block level, the Bandwidth (under Resampler Settings) is used to set the sampling frequency, according to the following formulae:

$$Sampling\ frequency = 2.56 \times Bandwidth$$

The sampling duration calculated by VibroSight Configurator is displayed in the Principal Duration (under Measurement Modes), together with a summary of the measurement resolutions (sizes) configured at the Spectra And Waveforms node level.

$$(Sampling)\ Duration = Waveform\ size\ or\ Spectrum\ size \times (1 / Sampling\ frequency)$$

Note:

The Bandwidth setting (under Resampler Settings) at the dynamic processing block level is common to all of the measurement modes configured for that processing block: Principal Mode and Auxiliary Mode.

2. Add an associated data logging rule in the Data Storage View:
 - a. At the configuration root level, add a New Data Storage group.
 - b. At the Data Entities node level under the new Data Storage group, select the waveform and/or spectrum acquired by the principal measurement mode in order to associate the data logging rule with the measurements. (The name can be found at the Spectra And Waveforms node level for the dynamic processing block, on the Principal Mode tab under Output Name, configured independently for the waveform (under Waveform) and spectrum (under Spectrum) outputs.)
 - c. Configure the data logging rule as required.

3. In VibroSight Configurator, save and activate the configuration as usual.
4. In VibroSight Server, use the Data Logging Database Logging menu command to ensure that the recording of principal measurement mode data is enabled.

Parent topic: [Managing VibroSight Server configurations](#)

Related concepts

[Principal measurement mode](#)

Configuring the auxiliary measurement mode

Measurement data is acquired from VM600 XMx16 cards using different measurement modes and the auxiliary mode is used to obtain measurements (waveforms and spectra) with more detail (higher resolution) than those obtained using the principal mode, but at slower update rates.

Note:

By default, the principal measurement mode is enabled and the auxiliary measurement mode is disabled.

The different measurement modes are configured at the Spectra And Waveforms node level for a dynamic processing block using the corresponding Principal Mode and Auxiliary Mode tabs under Waveform and Spectrum Processing.

In order for a VibroSight Server to use the waveforms and spectra acquired by a VM600 XMx16 card in auxiliary measurement mode:

- The auxiliary measurement mode (Auxiliary Mode) must be enabled (Output State) and configured in the hardware view at the Spectra And Waveforms level, under the processing block.
- A data logging rule in the Data Storage View must be added and configured to log the auxiliary mode measurements (waveform and/or spectrum) in the VibroSight data repository (VibroSight historical data folder (*.vshdf)).
- The logging of auxiliary measurement data must also be enabled at the VibroSight Server level (Data Logging Database Logging).

To configure the auxiliary measurement mode:

1. Configure auxiliary measurement mode data acquisition in the Hardware View:
 - a. At the Spectra And Waveforms node level for the dynamic processing block, the Auxiliary Mode tab under Waveform and Spectrum Processing is used to set the output states to Enabled. The Output State is configured independently for the waveform (under Waveform) and spectrum (under Spectrum) outputs.
 - b. The Auxiliary Mode tab under Waveform and Spectrum Processing is also used to set the resolution (size) of the required measurements. This is configured using Waveform Size (under Waveform) and automatically calculated for the Spectrum Size (under Spectrum). The window function to be used for the spectrum must also be configured using Window Type (under Spectrum).

Note:

The waveform size and the spectra size have a fixed relationship. That is, $Spectrum\ Size = Waveform\ Size / 2.56$

- c. The Auxiliary Mode tab under Waveform and Spectrum Processing is also used to select any averaging required for the waveform using Time Domain Processing and spectrum using Frequency Domain Processing (under Averaging).
- d. Finally, the Auxiliary Mode tab under Waveform and Spectrum Processing is used to specify the frequency at which the auxiliary measurements are acquired using Update rate (under Acquisition).

Note:

The auxiliary measurements (waveforms and spectra) are generated according to the configured update rate, aligned to exact minutes, hours or days.

- e. At the dynamic processing block level, the Bandwidth (under Resampler Settings) is used to set the sampling frequency, according to the following formulae:

$$Sampling\ frequency = 2.56 \times Bandwidth$$

The sampling duration calculated by VibroSight Configurator is displayed in the Auxiliary Duration (under Measurement Modes), together with a summary of the measurement resolutions (sizes) configured at the Spectra And Waveforms node level.

$$(Sampling)\ Duration = Waveform\ size\ or\ Spectrum\ size \times (1 / Sampling\ frequency)$$

Note:

The Bandwidth setting (under Resampler Settings) at the dynamic processing block level is common to all of the measurement modes configured for that processing block: Principal Mode and Auxiliary Mode.

2. Add an associated data logging rule in the Data Storage View:
 - a. At the configuration root level, add a New Data Storage group.

- b. At the Data Entities node level under the new Data Storage group, select the waveform and/or spectrum acquired by the auxiliary measurement mode in order to associate the data logging rule with the measurements. (The name can be found at the Spectra And Waveforms node level for the dynamic processing block, on the Auxiliary Mode tab under Output Name, configured independently for the waveform (under Waveform) and spectrum (under Spectrum) outputs.)
 - c. Configure the data logging rule as required.
3. In VibroSight Configurator, save and activate the configuration as usual.
4. In VibroSight Server, use the Data Logging Database Logging menu command to ensure that the recording of auxiliary measurement mode data is enabled.

Parent topic: [Managing VibroSight Server configurations](#)

Related concepts

[Auxiliary measurement mode](#)

Checking for configuration errors

A consistency check can be run at any time.

1. In VibroSight Configurator, click the Run button  in the Consistency Check window (bottom) to check the current configuration for configuration errors.

The consistency check window will list any applicable errors and warnings.

2. Correct any activation error , saving error  and warning  that is listed.

Double-clicking on some listed errors and warnings can take you to the appropriate location in the Hardware view to correct the problem.

3. Repeat step 1 and step 2 until there are no errors or warnings.

Parent topic: [Managing VibroSight Server configurations](#)

Opening a configuration for a VibroSight Server

A configuration for a VibroSight Server can be opened from a file, a server / database, a device or a historical data archive.

- [Opening a configuration for a VibroSight Server from a file](#)
One of the ways in which a configuration for a VibroSight Server can be opened is from a file, that is, an existing configuration saved as a file.
- [Opening a configuration for a VibroSight Server from a server / database](#)
One of the ways in which a configuration for a VibroSight Server can be opened is from a server / database, that is, an existing VibroSight Server.
- [Opening a configuration for a VibroSight Server from a device](#)
One of the ways in which a configuration for a VibroSight Server can be opened is from a device, that is, directly from VibroSight-compatible hardware (VM600 XMx16 cards and VibroSmart modules).
- [Opening a configuration for a VibroSight Server from a historical data archive](#)
One of the ways in which a configuration for a VibroSight Server can be opened is from a historical data archive, that is, an existing VibroSight historical data repository.

Parent topic: [Managing VibroSight Server configurations](#)

Opening a configuration for a VibroSight Server from a file

One of the ways in which a configuration for a VibroSight Server can be opened is from a file, that is, an existing configuration saved as a file.

1. In VibroSight Configurator, click File Open File.

Alternatively, click the Open button  on the toolbar and select File.

The Open dialog box appears.

2. Use the dialog box to navigate the folders on your computer and select a configuration for a VibroSight Server (*.vscfg) file, that was previously saved using VibroSight Configurator. Then click Open.

The VibroSight Server configuration from the file is loaded into VibroSight Configurator.

Note:

The title bar of VibroSight Configurator changes depending on the source/status of the configuration for a VibroSight Server:

- The title bar includes the text “(Configuration file: ---)” when the configuration being used is a file.

- The title bar includes the text “(Server: ---)” when the configuration being used is a server / database (VibroSight Server).
- The title bar includes the text “(Device: ---)” when the configuration being used is a device.
- The title bar includes the text “(Historical data archive: ---)” when the configuration being used is a historical data archive.

Parent topic: [Opening a configuration for a VibroSight Server](#)

Opening a configuration for a VibroSight Server from a server / database

One of the ways in which a configuration for a VibroSight Server can be opened is from a server / database, that is, an existing VibroSight Server.

Note:

When working with a VibroSmart system using a VibroSight Server, the configuration for a VibroSight Server can be opened either from the VibroSight Server or directly from the VibroSmart devices.

When there is a choice, opening the configuration from the VibroSight Server is recommended as it is easier. For example, opening the configuration directly from a VibroSmart system requires that all of the VibroSmart modules in the system are individually added to the configuration. It also requires that all of the VibroSmart modules remain available on the network while the configuration is being read.

1. Choose File Open Server / Database.

Alternatively, click the Open button  on the toolbar and select Server / Database.

The VibroSight Server selection page of the Data Sources Selection dialog box appears.

2. Use the dialog box to either select a server / database from the list of VibroSight Servers that the VibroSight software can see on the computer network or specify a VibroSight Server using an IP address and TCP port number. Then click Finish.

The VibroSight Server configuration from the server / database (VibroSight Server) is loaded into VibroSight Configurator.

Note:

The title bar of VibroSight Configurator changes depending on the source/status of the configuration for a VibroSight Server:

- The title bar includes the text “(Configuration file: ---)” when the configuration being used is a file.
- The title bar includes the text “(Server: ---)” when the configuration being used is a server / database (VibroSight Server).
- The title bar includes the text “(Device: ---)” when the configuration being used is a device.
- The title bar includes the text “(Historical data archive: ---)” when the configuration being used is a historical data archive.

Parent topic: [Opening a configuration for a VibroSight Server](#)

Related concepts

[An introduction to VibroSight Server](#)

Related reference

[The Select VibroSight Server\(s\) Window](#)

[VibroSight Configurator VibroSight Server parameters](#)

Opening a configuration for a VibroSight Server from a device

One of the ways in which a configuration for a VibroSight Server can be opened is from a device, that is, directly from VibroSight-compatible hardware (VM600 XMx16 cards and VibroSmart modules).

Note:

When working with a VibroSmart system using a VibroSight Server, the configuration for a VibroSight Server can be opened either from the VibroSight Server or directly from the VibroSmart devices.

When there is a choice, opening the configuration from the VibroSight Server is recommended as it is easier. For example, opening the configuration directly from a VibroSmart system requires that all of the VibroSmart modules in the system are individually added to the configuration. It also requires that all of the VibroSmart modules remain available on the network while the configuration is being read.

1. Choose File Open Device.

Alternatively, click the Open button  on the toolbar and select Device.

The Device selection page of the Data Sources Selection dialog box appears.

2. Use the dialog box to either select one or more specific VM600 XMx16 cards and/or VibroSmart modules from the list of VibroSight-compatible devices that the VibroSight software can see on the computer network or specify devices using an IP address or host name. Then click Finish.
Note:

CTRL click or SHIFT click can be used to select multiple devices.

As an IP address can be easily changed, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

The VibroSight Server configuration from the device or devices is loaded into VibroSight Configurator.

Note:

The title bar of VibroSight Configurator changes depending on the source/status of the configuration for a VibroSight Server:

- The title bar includes the text “(Configuration file: ---)” when the configuration being used is a file.
- The title bar includes the text “(Server: ---)” when the configuration being used is a server / database (VibroSight Server).
- The title bar includes the text “(Device: ---)” when the configuration being used is a device.
- The title bar includes the text “(Historical data archive: ---)” when the configuration being used is a historical data archive.

Parent topic: [Opening a configuration for a VibroSight Server](#)

Related reference

[The Select VibroSight Server\(s\) Window](#)

Opening a configuration for a VibroSight Server from a historical data archive

One of the ways in which a configuration for a VibroSight Server can be opened is from a historical data archive, that is, an existing VibroSight historical data repository.

1. Choose File Open Historical data archive.

Alternatively, click the Open button  on the toolbar and select Historical data archive.

The Open dialog box appears.

2. Use the dialog box to navigate the folders on your computer and select a VibroSight for historical data archive (*.vshda) file, that was previously created using VibroSight System Manager. Then click Open.

The VibroSight Server configuration from the VibroSight historical data repository is loaded into VibroSight Configurator.

Note:

The title bar of VibroSight Configurator changes depending on the source/status of the configuration for a VibroSight Server:

- The title bar includes the text “(Configuration file: ---)” when the configuration being used is a file.
- The title bar includes the text “(Server: ---)” when the configuration being used is a server / database (VibroSight Server).
- The title bar includes the text “(Device: ---)” when the configuration being used is a device.
- The title bar includes the text “(Historical data archive: ---)” when the configuration being used is a historical data archive.

Parent topic: [Opening a configuration for a VibroSight Server](#)

Saving a configuration for a VibroSight Server

A configuration for a VibroSight Server can be saved either as a file or as a VibroSight Server and database.

- [Saving a configuration for a VibroSight Server as a file](#)
One of the ways in which a configuration for a VibroSight Server can be saved is as a file.
- [Saving a configuration for a VibroSight Server as a VibroSight Server](#)
One of the ways in which a configuration for a VibroSight Server can be saved is as a VibroSight Server and database.

Parent topic: [Managing VibroSight Server configurations](#)

Saving a configuration for a VibroSight Server as a file

One of the ways in which a configuration for a VibroSight Server can be saved is as a file.

Note:

A configuration for a VibroSight Server saved as a file can be used with a VibroSmart DMS not using a VibroSight Server (that is, a “stand-alone” VibroSmart DMS).

However, a configuration that contains consistency errors cannot be saved: use the Consistency Check window to view and fix all consistency errors before saving a configuration.

1. Choose File → Save As → File.
2. If a consistency check error message appears, click **O** . Fix any consistency errors in the configuration then try again.
3. Type the name of the configuration file (*.vscfg) and click Save.
4. Click **O** to confirm.
5. To close the configuration, choose File → Close. If the configuration has been modified since you last saved it, you are prompted to save any changes.

Note:

The title bar of VibroSight Configurator changes depending on the source/status of the configuration for a VibroSight Server:

- The title bar includes the text “(Configuration file: ---)” when the configuration being used is a file.
- The title bar includes the text “(Server: ---)” when the configuration being used is a server / database (VibroSight Server).
- The title bar includes the text “(Device: ---)” when the configuration being used is a device.
- The title bar includes the text “(Historical data archive: ---)” when the configuration being used is a historical data archive.

Parent topic: [Saving a configuration for a VibroSight Server](#)

Related reference

[Default VibroSight files](#)

[Default VibroSight folders](#)

Saving a configuration for a VibroSight Server as a VibroSight Server

One of the ways in which a configuration for a VibroSight Server can be saved is as a VibroSight Server and database.

Note:

A configuration for a VibroSight Server saved as a VibroSight Server and database can be used with VM600 XMx16 cards or with a VibroSmart DMS using a VibroSight Server.

However, a configuration that contains consistency errors cannot be saved: use the Consistency Check window to view and fix all consistency errors before saving a configuration.

Note:

Case sensitive alphanumeric characters (0 to 9, a to z and A to) can be used for the name of a VibroSight server/database.

Saving a configuration for a VibroSight Server as a VibroSight server / database generates the VibroSight data repository (VibroSight historical data folder (*.vshdf) and associated Storage subfolder) that are required by a VibroSight Server.

1. Choose File → Save As → Server / Database.

The Create Server window is displayed.

2. In the Server instance name text box, type the name to be used for the VibroSight Server instance name.

Note:

Since VibroSight 2.9.6, VibroSight Server instance names are limited to 18 characters (previously, it was 27), so the data entry text boxes are limited to 18 characters. VibroSight allows only alphanumeric characters (A to , a to z, 0 to 9), the hyphen-minus character (-) and the underscore character () to be used for VibroSight Server names.

It is recommended to choose appropriate VibroSight Server names in order to avoid name conflicts arising due to truncation and/or additional databases being created during automatic data management.

3. In the Data repository location text box, modify the name to be used for the VibroSight data repository subfolder, if it is required to be different from the VibroSight Server instance name. (Note: The VibroSight data repository uses the same name as the Server instance name.) Select **Overwrite data repository file** in order to automatically overwrite an existing VibroSight data repository in the folder if it has the same file name. Then click **Next**.

Data repository file name automatically updates to display the location and file name for the VibroSight data repository (VibroSight historical data folder (*.vshdf)) that will be created, using the information entered in the Server instance name and Data repository location text boxes.

Note:

The default location for VibroSight data repositories is under VibroSight's default data folder (data path directory), typically, C: VibroSight Data

A VibroSight historical data folder is identified by a *.vshdf file and an associated Storage subfolder.

4. When prompted to Review your choices, if the information is correct, click Execute to continue and save the configuration as a server / database. If the information is not correct, click Back to re-enter the correct information (or Cancel).
5. When Execute is clicked, a progress indicator is displayed to provide progress of the server creation process. The server creation is complete when the progress indicators have stopped and the Server creation completed window is displayed. Click Finish to close the window.

A new VibroSight data repository (VibroSight historical data folder (*.vshdf) and associated Storage subfolder) is created, then VibroSight Server automatically starts and opens the new VibroSight data repository.

Note:

The title bar of VibroSight Configurator changes depending on the source/status of the configuration for a VibroSight Server:

- The title bar includes the text “(Configuration file: ---)” when the configuration being used is a file.
- The title bar includes the text “(Server: ---)” when the configuration being used is a server / database (VibroSight Server).
- The title bar includes the text “(Device: ---)” when the configuration being used is a device.
- The title bar includes the text “(Historical data archive: ---)” when the configuration being used is a historical data archive.

Parent topic: [Saving a configuration for a VibroSight Server](#)

Next topic: [Apply changes to \(activate\) a running configuration](#)

Related concepts

[VibroSight Server configurations](#)

[An introduction to VibroSight Server](#)

Related tasks

[Creating a VibroSight Server](#)

Related reference

[Configuration root parameters](#)

[VibroSight Configurator VibroSight Server parameters](#)

[Default VibroSight files](#)

[Default VibroSight folders](#)

Apply changes to (activate) a running configuration

After a configuration for a VibroSight Server has been created or changed, it must be uploaded to and applied to a running configuration (typically a VibroSight Server) in order to actually run on the VM600 XMx16 cards and/or VibroSmart modules.

Before a VibroSight Server configuration can be applied to a running configuration:

- For VM600 XMx16 cards, the configuration must be saved as a VibroSight Server / Database.
- For VibroSmart modules, the configuration must be saved as either:
A Server / Database for a VibroSmart system using a VibroSight Server.
A File for a VibroSmart system not using a VibroSight Server (that is, a “stand-alone” VibroSmart DMS).

To apply changes to (activate) a running configuration:

1. Start VibroSight Configurator, open the VibroSight Server configuration (for example, using File Open) and ensure that it is ready to apply.

Use the Consistency check tool/window to ensure that there are no errors and the configuration is ready to be applied.

2. In VibroSight Configurator, click  Apply changes to running configuration on the toolbar. Alternatively, use the File Apply changes to running configuration menu command.

For configurations using a VibroSight Server (VM600 XMx16 cards and VibroSmart modules with a “server connection”), the configuration is applied and run.

For configurations not using a VibroSight Server (VibroSmart modules with a “direct connection”), the user will be prompted to confirm applying a configuration directly on the VibroSmart modules before the configuration is applied and run.

(If the Apply changes to running configuration toolbar button is not available, check that you are working at the correct user level with the necessary access rights.)

After applying changes to a running configuration (that is, activating the configuration), the VibroSight Server updates the information about the configuration running on the VibroSight Server on the Status tab of its user interface, under Running Configuration.

In addition, the VibroSight Server automatically notifies all connected VibroSight software modules (clients) of the changes to the configuration.

Parent topic: [Managing VibroSight Server configurations](#)

Previous topic: [Saving a configuration for a VibroSight Server as a VibroSight Server](#)

Related concepts

[VibroSight Configurator user interface](#)

[VibroSight Server user interface](#)

Related tasks

[Reverting to a running VibroSight Server configuration](#)

Reverting to a running VibroSight Server configuration

When working with a configuration for a VibroSight Server, the configuration running on the VibroSight Server can be reverted to, replacing (overwriting) the currently open VibroSight Server configuration.

When working with VibroSight Server configurations, reverting to a running VibroSight Server configuration can be useful to help ensure that the correct (running) configuration is used as the starting point for changes to the configuration or as the starting point for other similar configurations.

Note:

It is only possible to revert to a running configuration from a VibroSight Server (that is, for VM600 XMx16 cards and VibroSmart modules with a “server connection”).

It is not possible to revert to a running configuration from VibroSight-compatible devices operating without a VibroSight Server (such as VibroSmart modules with a “direct connection”).

To revert to the running VibroSight Server configuration (that is, download the configuration from a VibroSight Server to VibroSight Configurator):

1. Start VibroSight Configurator and open a connection to the VibroSight Server (for example, using File Open Server/Database).
2. In VibroSight Configurator, click the File Revert to running configuration menu command.

The running configuration is downloaded from the VibroSight Server to VibroSight Configurator.

Information about the configuration running on the VibroSight Server is displayed on the Status tab of its user interface, under Running Configuration.

Parent topic: [Managing VibroSight Server configurations](#)

Related tasks

[Apply changes to \(activate\) a running configuration](#)

Renaming a configuration for a VibroSight Server

You can rename a configuration for a VibroSight Configurator. All information about the configuration is written to the new configuration file that you specify.

1. Choose File Save As File.
2. Type the new name of the configuration file (*.vscfg).
3. Click Save.

Parent topic: [Managing VibroSight Server configurations](#)

Closing a configuration for a VibroSight Server

You can close a configuration for a VibroSight Configurator if, for example, you want to start working on a different configuration.

You cannot close a configuration that contains consistency errors. Use the Consistency Check window to view consistency errors and fix all errors before closing the configuration

1. Choose File Close. If the configuration has been modified since you last saved it, you are prompted to save any changes.
2. If a consistency check error message appears, click O . Fix any consistency errors in the configuration then try again.

Parent topic: [Managing VibroSight Server configurations](#)

Managing VibroSight Modbus Server configurations

You can easily create new VibroSight Modbus Server (slave) configurations in order to allow the export of data from a VibroSight Server database via Modbus, or reopen existing VibroSight Modbus Server configurations and modify their properties.

- [Creating a VibroSight Modbus Server configuration](#)

A VibroSight Modbus Server (slave) configuration contains all of the parameters for an external Modbus interface that allows a third-party Modbus client (master) to communicate with a VibroSight Server and access its data.

Related concepts

[VibroSight Modbus Server management](#)

Creating a VibroSight Modbus Server configuration

A VibroSight Modbus Server (slave) configuration contains all of the parameters for an external Modbus interface that allows a third-party Modbus client (master) to communicate with a VibroSight Server and access its data.

1. Start a new VibroSight Modbus Server configuration in one of the following ways:
 - a. Click  New on the toolbar and then click Modbus Server Configuration.
 - b. Or click File New Modbus Server Configuration.
2. If the current configuration has been modified since it was last saved, you are prompted to save the changes before continuing. Click Yes to save the changes and continue.

A new, empty configuration is displayed with a  Modbus Server element in the Machinery View tool window, and a  Modbus Server element in the Hardware View tool window.

3. In the Hardware View or Machinery View tool windows, click on the  Modbus Server to select it.

The main window of VibroSight Configurator updates to display the parameters for the Modbus Server.

4. Under Settings:
 - a. To configure the Input server, click the browse button and use the Data Sources Selection dialog box that appears to specify the VibroSight Server that contains the data to be shared via the Modbus interface. (The VibroSight Server can either be selected from the list of those available on your network or it can be specified using an IP address and a TCP port number for the computer running the VibroSight Server.)
 - b. To configure the Output Interface, select either Ethernet or Serial. If Modbus TCP (Ethernet connection) is being used, select Ethernet and click the link that appears after the Output Interface radio buttons to display the Ethernet interface settings window and configure the settings: for example, any adaptor, the TCP Protocol and port 502. If Modbus RTU (serial connection) is being used, select Serial and click the link that appears after the Output Interface radio buttons to display the Serial interface settings window and configure the settings: for example, the COM1 serial port, 9600 baud rate, 8 data bits, even parity, 1 stop bit and ASCII transmission mode.

Note:

Only a single Output Interface can be defined for a VibroSight Modbus Server: Ethernet or Serial. If both types of interface are required, then an additional VibroSight Modbus Server must be used.

- c. Use Slave ID to define the Modbus slave address for the VibroSight Modbus Server.
- d. Use Update rate to define the rate at which the VibroSight Modbus Server communicates with the VibroSight Server to obtain the data to be shared.

Note:

The maximum update rate is 1 s.

- e. Use Data validity to define the timeout after which the data received by the VibroSight Modbus Server from the VibroSight Server is no longer considered to be valid. If the third-party Modbus client requests data from the VibroSight Modbus Server whose data validity timeout has expired, then the VibroSight Modbus Server will respond with the error exception code "04", that is, "slave device failure".
 - f. Use the Default output units button to display the Default output units window and change the default units to be used by the data to be shared.
 - g. Use Default phase qualifier to change the default phase information to be used by the data to be shared.
5. Under Published measurements:

Note:

The measurements (data) available from the VibroSight Server are displayed under Published measurements only after they have been manually added using the Add button. as a VibroSight Modbus Server only publishes required (added) measurements.

- a. Select Machinery view or Hardware view to display the list of measurements (data) to be shared via the Modbus interface in terms of either the machinery being monitored (Machinery view) or the machinery monitoring equipment (Hardware view). This setting affects the information displayed in the Measurement column under Published measurements.
- b. Use the search box, indicated by the  icon, to selectively filter the measurements displayed under Published measurements.
- c. Click Reassign addresses to reinitialise the addresses of the registers to be used for the measurements by the VibroSight Modbus Server. Modbus register addresses will be reinitialised, starting from 0, in the order of the measurements listed under

Published measurements.
Note:

This is useful if the order of the measurements has been changed, for example, by dragging and dropping measurements in the list, sorting by double-clicking a particular column or by adding and removing measurements.

- d. To add a measurement, click the Add button and use the Add data dialog box that appears to select the measurement (data) to be shared via the Modbus interface. Navigate the hierarchical tree structure and select the check box corresponding to a measurement, then click **O** to add the selected measurement to the list of measurements (data) displayed under Published measurements.

The available measurements can be displayed in terms of either the Machinery view (machinery being monitored) or the Hardware view (machinery monitoring equipment). Use the search box, indicated by the  icon, to selectively filter the measurements displayed the Add data dialog box.

Note:

After a measurement has been added, the individual cells of a measurement corresponding to the Memory Space, Address, Measurement, Unit, Qualifier, Data Type, Byte Ordering, Minimum Range and Maximum Range columns can be clicked in order to change the default setting. Also, clicking the title of any column will sort the list of measurements in the ascending order (of that column) and clicking the title of the column again will sort the list of measurements in descending order.

Note:

CTRL click or SHIFT click can be used to select multiple measurements in the Add data dialog box.

- e. Click Remove to remove (delete) the selected measurement or measurements from the list under Published measurements.
 - f. Click Clear All to remove (delete) all of the measurements from the list under Published measurements.
6. When the VibroSight Modbus Server configuration is complete, click File **Save As** File to save it as a file.

Use the Save As dialog box that appears to navigate the folders on the computer and select in which folder and under what file name to save the VibroSight Modbus Server configuration file (*.mscfg). Then click Save.

Note:

It is recommended to save the VibroSight Modbus Server configuration file in the same folder as the VibroSight data repository (VibroSight historical data folder (*.vshdf)) that it uses as its input.

The default location for VibroSight database files is VibroSight's default data folder (data path directory), typically,
C: VibroSight Data

The VibroSight Modbus Server configuration is saved and the file name used is displayed in the title bar at the top of the VibroSight Configurator project user interface.

This VibroSight Modbus Server configuration can now be used to create a VibroSight Modbus Server using VibroSight System Manager.

Parent topic: [Managing VibroSight Modbus Server configurations](#)

Related concepts

[Modbus](#)

Related tasks

[Creating a VibroSight Server configuration](#)

[Creating a VibroSight OPC Server configuration](#)

[Creating a VibroSight Modbus Server](#)

Related reference

[VibroSight and Modbus byte ordering options](#)

Managing VibroSight OPC Server configurations

You can easily create new VibroSight OPC Server (slave) configurations in order to allow the export of data from a VibroSight Server database via OPC, or reopen existing VibroSight OPC Server configurations and modify their properties.

- [Creating a VibroSight OPC Server configuration](#)
A VibroSight OPC Server (slave) configuration contains all of the parameters for an external OPC interface that allows a third-party OPC client (master) to communicate with a VibroSight Server and access its data.

Creating a VibroSight OPC Server configuration

A VibroSight OPC Server (slave) configuration contains all of the parameters for an external OPC interface that allows a third-party OPC client (master) to communicate with a VibroSight Server and access its data.

When creating a VibroSight OPC Server, the effects of the parameters configured using the controls under Settings and Published measurements can immediately be seen in the tree structure displayed under Published measurements.

1. Start a new VibroSight OPC Server configuration in one of the following ways:
 - a. Click  New on the toolbar and then click OPC Server Configuration.
 - b. Or click File New OPC Server Configuration.
2. If the current configuration has been modified since it was last saved, you are prompted to save the changes before continuing. Click Yes to save the changes and continue.

A new, empty configuration is displayed with an  OPC Server element in the Machinery View tool window, and an  OPC Server element in the Hardware View tool window.

3. In the Hardware View or Machinery View tool windows, click on the  OPC Server to select it.

The main window of VibroSight Configurator updates to display the parameters for the OPC Server.

4. Under Settings:
 - a. To configure the Input server, click the browse button and use the Data Sources Selection dialog box that appears to specify the VibroSight Server that contains the data to be shared via the OPC interface. (The VibroSight Server can either be selected from the list of those available on your network or it can be specified using an IP address and a TCP port number for the computer running the VibroSight Server.)
 - b. The first Publish drop-down box is used to select the measurement data to publish by availability: either the enabled measurements only (Only enabled) or all measurements that exist in the configuration (Enabled and disabled).
 - c. The second Publish drop-down box is used to select the measurement data to publish by type: either all measurements (Select All) or any combination of data types (Variables, Waveforms, Spectra, Orbits, System data).
 - d. The third Publish drop-down box is used to select the measurement data to publish by view: either measurements from the Machinery view tree structure only (From the machinery view only), from the Hardware view tree structure only (From the hardware view only) or from both tree structures (From the machinery and hardware views).
 - e. Use Update rate to define the rate at which the VibroSight OPC Server communicates with the VibroSight Server to obtain the data to be shared.

Note:

The fastest update rate is 1 s.

- f. Use the Default output units button to display the Default output units window and change the default units to be used by the data to be shared.
 - g. Use Default phase qualifier to change the default phase information to be used by the data to be shared.
5. Under Published measurements:

Note:

All of the measurements (data) available from the VibroSight Server, as determined by the VibroSight OPC Server configuration, are automatically displayed under Published measurements.

- a. Use the Customize hierarchy structure button to display the Published Hierarchy Structure window and edit the published hierarchy structure (OPC path) that is used by the data to be shared.

In the Published Hierarchy Structure window, under Machinery view components, use the check boxes to add or remove VibroSight Machinery view node names from the structure of the default path for the Machinery view in the exported OPC path. In addition, the "Machinery view" text box can be used to change the default root node name used in the exported OPC path.

In the Published Hierarchy Structure window, under Hardware view components, use the check boxes to add or remove VibroSight Hardware view node names from the structure of the default path for the Hardware view in the exported OPC path. In addition, the "Hardware view" text box can be used to change the default root node name used in the exported OPC path.

Note:

Changing the default paths can result in conflicts when published measurements have the same name and are distinguished only by their paths.

Measurement data (OPC items) with conflicting paths will not be published via OPC, but conflicts are detected and displayed to the user using message boxes.

- b. Select the Filter conflicts check box to display only measurements with conflicting paths under Published measurements.
 - c. Select the Filter non defaults check box to display only measurements that use units or qualifiers that are not the defaults under Published measurements.
 - d. Use the search box, indicated by the  icon, to selectively filter the measurements displayed under Published measurements.
 - e. To sort the measurements listed in the tree structure displayed under Published measurements, click the title of a column (Measurement, Unit, Qualifier) to sort the measurements by the contents of that column.
 - f. To change the Unit or Qualifier of a measurement listed in the tree structure displayed under Published measurements, click directly on the unit or qualifier and use the shortcut menu that appears to change the unit or qualifier as required.
6. The Export to CSV button can be used to generate a CSV file (*.csv) containing complete OPC path, unit and qualifier information for each measurement to be published.
7. When the VibroSight OPC Server configuration is complete, click File Save As File to save it as a file.

Use the Save As dialog box that appears to navigate the folders on the computer and select in which folder and under what file name

to save the VibroSight OPC Server configuration file (*.opscfg). Then click Save.

Note:

It is recommended to save the VibroSight OPC Server configuration file in the same folder as the VibroSight data repository (VibroSight historical data folder (*.vshdf)) that it uses as its input.

The default location for VibroSight database files is VibroSight's default data folder (data path directory), typically,
C: VibroSight Data

The VibroSight OPC Server configuration is saved and the file name used is displayed in the title bar at the top of the VibroSight Configurator project user interface.

This VibroSight OPC Server configuration can now be used to create a VibroSight OPC Server using VibroSight System Manager.

Parent topic: [Managing VibroSight OPC Server configurations](#)

Related concepts

[OPC](#)

Related tasks

[Creating a VibroSight Server configuration](#)

[Creating a VibroSight Modbus Server configuration](#)

[Creating a VibroSight OPC Server](#)

Related reference

[VibroSight and OPC data](#)

Using Multi Edit Mode

Multi Edit Mode is an easy way to compare, modify and verify the configuration of multiple channels and processing blocks at the same time.

- [Selecting Multi Edit Mode](#)
Multi Edit Mode is selected using the View command on the Configurator menu bar.
- [Selecting Hierarchical Mode](#)
Hierarchical Mode is selected using the View command on the Configurator menu bar.
- [Viewing Channels and Processing Blocks](#)
More than one channel and processing block can be viewed using the Multi Edit Mode.
- [Sorting Multiple Channels and Processing Blocks](#)
Views of more than one channel and processing block can be sorted in Multi Edit Mode.
- [Selecting Multiple Channels and Processing Blocks](#)
More than one channel and processing block can be selected using the Multi Edit Mode.
- [Editing Multiple Channels and Processing Blocks](#)
More than one channel or processing block can be edited at the same time in Multi Edit Mode.

Selecting Multi Edit Mode

Multi Edit Mode is selected using the View command on the Configurator menu bar.

Only one mode (Multi Edit Mode or Hierarchical Mode) can be active at a time.

Note:

Multi Edit Mode is recommended for comparing and modifying configuration data that has already been entered.

Click View Multi Edit Mode.

The Configurator will switch to Multi Edit Mode. The Hardware view (left) and Properties window (right) appear.

Parent topic: [Using Multi Edit Mode](#)

Selecting Hierarchical Mode

Hierarchical Mode is selected using the View command on the Configurator menu bar.

Only one mode (Hierarchical Mode or Multi Edit Mode) can be active at a time.

Note:

Hierarchical Mode is recommended for initially entering configuration information.

Click View Hierarchical Mode.

The Configurator will switch to Hierarchical Mode. The Machinery and Data Storage views (left) and Hardware view and Properties window (right) appear.

Parent topic: [Using Multi Edit Mode](#)

Viewing Channels and Processing Blocks

More than one channel and processing block can be viewed using the Multi Edit Mode.

Viewing multiple channels or processing blocks at the same time allows you to easily compare, modify or verify configurations.

To view multiple channels or processing blocks:

1. If not in Multi Edit Mode, click View Multi Edit Mode.

The Configurator will switch to Multi Edit Mode. The Hardware view (left) and Properties window (right) appear.

2. Click on any node of interest in the tree structure of the Hardware view:
 - a. For example, if you are interested in comparing all of the input channels, click the Input Channels node.
 - b. For example, if you are interested only in comparing the Tacho channels, click the Tacho node (under Input Channels).

The main Configurator window (centre) updates to show a list of all the channels or processing blocks selected (in rows).

3. Click on any single row of interest in the main Configurator window (centre).

The Properties window (right) updates to show the relevant parameters for the element selected.

Parent topic: [Using Multi Edit Mode](#)

Sorting Multiple Channels and Processing Blocks

Views of more than one channel and processing block can be sorted in Multi Edit Mode.

Sorting views of multiple channels or processing blocks allows you to more easily compare, verify and edit channel or processing block configurations.

To sort multiple channels or processing blocks in Multi Edit Mode:

1. Click on a node of interest in the tree structure of the Hardware view to view the contained channels and processing blocks.

The main Configurator window (centre) updates to show a list of all the channels and processing blocks selected.

2. Click the title of any column in the main Configurator window to arrange the Configurator window in ascending order (of that column).

The title of the column will display a ▲ indicator to show that the window is displayed in ascending order.

3. Click the title of the same column in the main Configurator window to arrange the Configurator window in descending order (of that column).

The title of the will display a ▼ indicator to show that the window is displayed in descending order.

Parent topic: [Using Multi Edit Mode](#)

Selecting Multiple Channels and Processing Blocks

More than one channel and processing block can be selected using the Multi Edit Mode.

Viewing multiple channels or processing blocks at the same time allows you to easily compare, modify or verify configurations.

To view multiple channels or processing blocks in Multi Edit Mode:

1. If not in Multi Edit Mode, click View Multi Edit Mode.

The Configurator will switch to Multi Edit Mode. The Hardware view (left) and Properties window (right) appear.

2. Click on any node of interest in the tree structure of the Hardware view:
 - a. For example, if you are interested in comparing all of the input channels, click the Input Channels node.
 - b. For example, if you are interested only in comparing the Tacho channels, click the Tacho node (under Input Channels).

The main Configurator window (centre) updates to show a list of all the channels or processing blocks selected (in rows).

3. Click on the rows of interest in the main Configurator window (centre) in one of the following ways:
 - a. To select a continuous selection of rows, click on the first element, then SHIFT click on the last element of interest.
 - b. To select a discontinuous selection of rows, click on the first element, then CTRL click on any other elements of interest.
- Note:

CTRL click or SHIFT click can be used to select multiple data entities.

The main Configurator window (centre) updates to show all selected elements in a darker colour. The Properties window (right) updates to show all *common* parameters for the elements selected.

Parent topic: [Using Multi Edit Mode](#)

Editing Multiple Channels and Processing Blocks

More than one channel or processing block can be edited at the same time in Multi Edit Mode.

Editing the parameters that are common to multiple channels or processing blocks at the same time allows you to quickly ensure that these parameters are consistently set to the same values.

To edit multiple parameters at the same time in Multi Edit Mode:

1. Select the level (node) of interest in the Hardware view tree structure (left) in order to view the parameters associated with this area of the configuration.

The main Configurator window (centre) updates and lists all of the parameters for the selected node.

2. Select one or more similar rows in the main Configurator window.

The main Configurator window updates to show the selected rows in a darker colour. The Properties window (right) updates to show all of the parameters *common* to the selected rows.

Note:

CTRL click or SHIFT click can be used to select multiple data entities.

3. Click on a parameter in the Properties window to activate the data entry field and then enter the new value: select an option from a drop-down list or type a new value, as appropriate.

The Properties window and the main Configurator window updates to show the new value for all of the selected rows.

Note:

It is not possible to expand parent elements (nodes) or edit values in the Properties window if the existing values for the parameters are different.

Parent topic: [Using Multi Edit Mode](#)

Related tasks

[Selecting Multiple Channels and Processing Blocks](#)

[Sorting Multiple Channels and Processing Blocks](#)

Working with data logging

VibroSight uses data logging in order to allow the permanent storage of measurements (*live data*) for viewing at a later time.

Data logging is used to store measurement data (data entities) – acquired using the principal measurement mode and the auxiliary measurement mode – to a VibroSight Server database.

The measurement data stored in a VibroSight data repository can be viewed at any time in VibroSight Vision (*historical data*).

It is possible to perform the data logging for a system without using machine states (machine operating conditions). However, because machine states describe the operating modes of a machine, they can be very useful to help ensure that the data logging is appropriate for the mode of a machine. Therefore, it is generally recommended to use machine states (machine operating conditions) in the data logging rules configured for a system.

- [Adding a data storage folder](#)

Data storage folders can be added to the Data Storage view in order to help organise and structure data logging and event logging.

- [Adding a data storage group](#)

Data storage groups are added to the Data Storage view in order to help organise and structure data logging. A data storage group is effectively a folder for working with data logging rules, and the data entities associated with them.

- [Adding conditions to a data logging rule](#)

Conditions can be added to data logging rules in order to make the data logging dependent on the value of other system parameters.

- [Removing conditions from a data logging rule](#)

Conditions can be removed from a data logging rule when no longer required.

- [Adding machine states \(machine operating conditions\) to a data logging rule](#)

A machine state (machine operating condition) can be added to a data logging rule in order to make the data logging dependent on the operating mode of a machine.

- [Enabling and disabling data logging](#)

Data logging, the logging of measurement data (data entities) and events (event entities) to a VibroSight Server database, can be enabled and disabled on a rule-by-rule basis (locally) or for an entire VibroSight machinery monitoring application (globally). This can be useful when evaluating data logging rules and event logging rules for a machinery monitoring application or evaluating the data storage requirements of a VibroSight Server database.

Related concepts

[Data logging](#)

[Measurement modes](#)

Adding a data storage folder

Data storage folders can be added to the Data Storage view in order to help organise and structure data logging and event logging.

Data storage folders are the equivalent of folders in Windows – they are a container for other elements, such as other data storage folders, data storage groups and events storage groups.

To add a data storage folder:

1. In the Data Storage view, right-click in the tree structure where the new element is required (for example, under the Configuration Root) and choose New Data Storage Folder from the shortcut menu that appears.

A data storage folder is added to the Data Storage view. The main window (central area) of VibroSight Configurator updates to display the summary parameters for the data storage folder.

2. In the Name field, enter a name for the data storage folder.
3. The Sub Folders and Groups boxes are automatically populated to provide summary information about the elements contained by the data storage folder, such as other data storage folders, data storage groups and events storage groups.
4. In the Description field, enter optional descriptive information about the data storage group.

Parent topic: [Working with data logging](#)

Parent topic: [Working with events logging](#)

Adding a data storage group

Data storage groups are added to the Data Storage view in order to help organise and structure data logging. A data storage group is effectively a folder for working with data logging rules, and the data entities associated with them.

A data storage group contains a Data Entities folder that is used to select the data entities to be used by the data storage group.

To add a data storage group:

1. In the Data Storage view, right-click in the tree structure where the new element is required (for example, under a Data Storage Folder) and choose New Data Storage Group from the shortcut menu that appears.

A data storage group is added to the Data Storage view. The main window (central area) of VibroSight Configurator updates to display the summary parameters for the data storage group.

Note:

A data storage group automatically includes a Data Entities folder.

2. In the Name field, enter a name for the data storage group.
3. Use the Group State field to Disable (or Enable) the data storage group in the configuration.
4. The Storage Rules and Data Entities boxes are automatically populated to provide summary information about the elements contained by the data storage group, such as other data storage groups, the data storage rules and selected data entities.

Under the Storage Rules and Data Entities boxes, the items field displays a count of the number of data entities selected for the data storage group.

5. In the Description field, enter optional descriptive information about the data storage group.

- [Selecting data entities for a data storage group](#)

Data storage groups contain a Data Entities folder that is used to select specific data entities, so that data logging rules can be associated with them.

- [Adding data logging rules to a data storage group](#)

Data Logging Rules are added to a data storage group to specify the rate at which the data entities in the data storage group should be logged and under what conditions the data should be logged.

Parent topic: [Working with data logging](#)

Selecting data entities for a data storage group

Data storage groups contain a Data Entities folder that is used to select specific data entities, so that data logging rules can be associated with them.

To select data entities for a data storage group:

1. In the Data Storage view, right-click on the Data Entities folder under the Data Storage group.

The main window (central area) of VibroSight Configurator updates to display the list of data entities that are available to be added to the data storage group.

2. Click the title of any column in the main Configurator window to sort the window in ascending order (of that column).

The title of the column will display a ▲ indicator to show that the window is displayed in ascending order.

3. Click the title of the same column in the main Configurator window to arrange the window in descending order (of that column).

The title of the will display a ▼ indicator to show that the window is displayed in descending order.

4. Select the check box in the Name column (the first column) in order to add a data entity (row) to the data storage group. Clear the check box in the Name column in order to remove a data entity (row) from the data storage group.

Note:

CTRL click and/or SHIFT click can be used to select multiple data entities (rows) before selecting or clearing the check box.

In the Data Storage group above the Data Entities folder, the Data Entities box is automatically populated to provide a summary of the data entities selected for the data storage group. In addition, under the Data Entities box, the items field displays a count of the number of data entities selected for the data storage group.

Parent topic: [Adding a data storage group](#)

Adding data logging rules to a data storage group

Data Logging Rules are added to a data storage group to specify the rate at which the data entities in the data storage group should be logged and under what conditions the data should be logged.

The choice of data logging rule depends on the needs of your application. Data logging rules can either be:

- Time Based
- Value Based
- Alarm Event Based.

To add a data logging rule to a data storage group:

1. Right-click on the data storage group ☐ that you want to add logging rules to, then click New Data Logging Rule and choose one of the data logging rules – Time Based, Value Based or Alarm Event Based – from the shortcut menu that appears.

The selected logging rule will be added to the Data Storage view. The main window (central area) of VibroSight Configurator will update to show the summary view for the new logging rule.

2. Type a name for the new data logging rule in the Name field of the summary view shown in the main window.

Complete the other fields for the logging rule depending on the requirements of your application.

3. Select Condition to add a condition to the data logging rule.

Parent topic: [Adding a data storage group](#)

Related reference

[Time Based data logging rule parameters](#)

[Value Based data logging rule parameters](#)

[Alarm Event Based data logging rule parameters](#)

Adding conditions to a data logging rule

Conditions can be added to data logging rules in order to make the data logging dependent on the value of other system parameters.

Making data logging dependent on the value of other system parameters means that data can be logged appropriately to the state of the machine. This results in reduced data storage requirements.

Conditions can be added to the following data logging rules:

- Time Based
- Value Based.

Alarm severity levels can also be added as conditions to data logging rules.

To add a condition to a data logging rule:

1. Click on the data logging rule  to select it.

The main window (central area) of VibroSight Configurator will update to show the summary view for the logging rule.

2. Select the Condition check box to enable conditions for the data logging rule.

Any additional rule parameters related to the Condition become available.

3. Right-click in the data entry area underneath the Condition check box and click Add Data Condition.

A template line for a data condition is added in the data entry area.

4. Or right-click in the data entry area underneath the Condition check box and click Add Point Alarm State Condition.

A template line for a data condition based on alarm severity levels is added in the data entry area.

5. Click (anywhere) on the data condition template and enter the required information: select the data entity, condition and units from the drop-down boxes and type any required data values. Click on another part of the data entry area when finished entering the data.

The template line for the data condition displays the updated condition.

Parent topic: [Working with data logging](#)

Removing conditions from a data logging rule

Conditions can be removed from a data logging rule when no longer required.

Removing a data logging rule results in reduced data storage requirements.

Conditions can be removed from the following data logging rules:

- Time Based
- Value Based.

To remove a condition from a data logging rule:

1. Click on the data logging rule  to select it.

The main window (central area) of VibroSight Configurator will update to show the summary view for the logging rule.

2. To temporarily remove the condition from the data logging rule:
 - a. Clear the Condition check box to disable conditions for the data logging rule.

The data logging rule remains in the data entry underneath the Condition check box.

3. To permanently remove the condition from the data logging rule:
 - a. Ensure the Condition check box is selected (to allow access to the data condition).
 - b. Right-click on the data condition and click Delete.
 - c. Clear the Condition check box.

The data condition is deleted and no data conditions are enabled for the rule.

Parent topic: [Working with data logging](#)

Adding machine states (machine operating conditions) to a data

logging rule

A machine state (machine operating condition) can be added to a data logging rule in order to make the data logging dependent on the operating mode of a machine.

Making data logging dependent on the operating mode of a machine means that data can be logged appropriately to the state of a machine. For example, less data is usually required to be logged during steady state operation and more data is required to be logged during transients. This results in reduced historical data to search through to find the data of interest and correspondingly reduced data storage requirements.

Machine states (machine operating conditions) can be added to any data logging rule that uses conditions, that is, the following:

- Time Based
- Value Based.

To add a machine state (machine operating condition) to a data logging rule:

1. Click on the data logging rule ☐ to select it.

The main window (centre) will update to show the summary view for the logging rule.

2. Select the Condition check box to enable conditions for the data logging rule.

Any additional rule parameters related to the Condition, such as Time Delay or Timeout, become available.

3. Right-click in the data entry area underneath the Condition check box and click Add State Condition.

A template line for a state condition is added in the data entry area.

4. Click (anywhere) on the state condition template line to enter the required information for the machine state (machine operating condition): select the existing machine state, relational operator and state of the existing machine state from the drop-down boxes and type any required data values.
5. Click on another part of the data entry box when finished entering the data.

The template line for the state condition displays the updated condition.

Parent topic: [Working with data logging](#)

Enabling and disabling data logging

Data logging, the logging of measurement data (data entities) and events (event entities) to a VibroSight Server database, can be enabled and disabled on a rule-by-rule basis (locally) or for an entire VibroSight machinery monitoring application (globally). This can be useful when evaluating data logging rules and event logging rules for a machinery monitoring application or evaluating the data storage requirements of a VibroSight Server database.

- [Enabling and disabling data logging locally](#)
Data logging can be enabled and disabled on a rule-by-rule basis (locally) using VibroSight Configurator.
- [Enabling and disabling database logging globally](#)
Database logging can be enabled and disabled on a database basis (globally) using the VibroSight Server.

Parent topic: [Working with data logging](#)

Parent topic: [Working with events logging](#)

Enabling and disabling data logging locally

Data logging can be enabled and disabled on a rule-by-rule basis (locally) using VibroSight Configurator.

Data logging can be enabled or disabled using the individual data logging rules and event logging rules in the Data Storage view of VibroSight Configurator VibroSight Configurator.

Note:

The Rule State for a new logging rule is enabled, by default.

To enable or disable data logging for a particular data logging rule or event logging rule:

1. In VibroSight Configurator, click the data logging rule or event logging rule in the Data Storage view.

Data logging rules are available under data storage groups and events logging rules are available under events storage groups.

The main window (central area) of VibroSight Configurator updates to display the parameters for the selected data logging rule or event logging rule.

2. Use the Rule State field to Enable (or Disable) the logging rule in the configuration, as appropriate.

When the configuration is saved and activated, the logging rule be enabled or disabled, as selected.

Parent topic: [Enabling and disabling data logging](#)

Enabling and disabling database logging globally

Database logging can be enabled and disabled on a database basis (globally) using the VibroSight Server.

Database logging can be enabled or disabled using the overall database logging commands available for a VibroSight Server.

When database logging is enabled, measurement data (data entities) and events (event entities) are logged to the VibroSight Server database, according to the configured data logging rules.

When database logging is disabled, no measurement data (data entities) and events (event entities) are logged to the VibroSight Server database.

Note:

Database logging for a new VibroSight Server is enabled, by default.

To enable or disable database logging for a VibroSight Server:

1. In the VibroSight Server, click the Data Logging menu command.

A check mark in front of the Database logging command indicates that database logging is enabled.

2. Click Database logging.

The status of the database logging will toggle. That is, if it was enabled, it will be disabled, and if it was disabled, it will be enabled.

Parent topic: [Enabling and disabling data logging](#)

Working with events logging

VibroSight uses events logging in order to allow the permanent storage of events (*live data*) for viewing at a later time.

Events logging is used to store event data (event entities) to a VibroSight Server database.

Event data consists of alarm (severity) events for the machinery being monitored and system and device events for the VibroSight-based machinery monitoring system itself.

The alarm (severity) events, and system and device events stored in a VibroSight Server database can be viewed at any time in VibroSight Event Viewer.

In addition, the alarm (severity) event data stored in a VibroSight Server database can be used by the Time Range tool window in VibroSight Vision in order to help find particular measurements (*historical data*).

- [Adding a data storage folder](#)
Data storage folders can be added to the Data Storage view in order to help organise and structure data logging and event logging.
- [Adding an events storage group](#)
Events storage groups are added to the Data Storage view in order to help organise and structure event logging. An events storage group is effectively a folder for working with events logging rules and the event entities associated with them.
- [Adding conditions to an events logging rule](#)
Conditions can be added to events logging rules in order to make the events logging dependent on the value of other system parameters.
- [Removing conditions from an events logging rule](#)
Conditions can be removed from an events logging rule when no longer required.
- [Enabling and disabling data logging](#)
Data logging, the logging of measurement data (data entities) and events (event entities) to a VibroSight Server database, can be enabled and disabled on a rule-by-rule basis (locally) or for an entire VibroSight machinery monitoring application (globally). This can be useful when evaluating data logging rules and event logging rules for a machinery monitoring application or evaluating the data storage requirements of a VibroSight Server database.

Related concepts

[Events logging](#)

Adding an events storage group

Events storage groups are added to the Data Storage view in order to help organise and structure event logging. An events storage group is effectively a folder for working with events logging rules and the event entities associated with them.

An events storage group contains an Event Entities folder that is used to select the event entities to be used by the events storage group.

To add an events storage group:

1. In the Data Storage view, right-click in the tree structure where the new element is required (for example, under a Data Storage Folder) and choose New Events Storage group from the shortcut menu that appears.

An events storage group is added to the Data Storage view. The main window (central area) of VibroSight Configurator updates to display the summary parameters for the events storage group.

Note:

An events storage group automatically includes an Event Entities folder.

2. In the Name field, enter a name for the events storage group.
3. Use the group State field to Disable (or Enable) the events storage group in the configuration.
4. The Storage Rules and Event Entities boxes are automatically populated to provide summary information about the elements contained by the events storage group, such as the events storage rules and selected event entities.

Under the Storage Rules and Event Entities boxes, the items field displays a count of the number of event entities selected for the events storage group.

5. In the Description field, enter optional descriptive information about the events storage group.

- [Selecting event entities for an events storage group](#)

Events storage groups contain an Event Entities folder that is used to select specific event entities, so that events logging rules can be associated with them.

- [Adding events logging rules to an events storage group](#)

Events logging rules are added to an events storage group to specify the rate at which the event entities in the events storage group should be logged and under what conditions the events should be logged.

Parent topic: [Working with events logging](#)

Selecting event entities for an events storage group

Events storage groups contain an Event Entities folder that is used to select specific event entities, so that events logging rules can be associated with them.

To select event entities for an events storage group:

1. In the Data Storage view, right-click on the Event Entities folder under the Events Storage group.

The main window (central area) of VibroSight Configurator updates to display the list of event entities that are available to be added to the events storage group.

2. Click the title of any column in the main Configurator window to sort the window in ascending order (of that column).

The title of the column will display a ▲ indicator to show that the window is displayed in ascending order.

3. Click the title of the same column in the main Configurator window to arrange the window in descending order (of that column).

The title of the will display a ▼ indicator to show that the window is displayed in descending order.

4. Select the check box in the Name column (the first column) in order to add an event entity (row) to the events storage group. Clear the check box in the Name column in order to remove an event entity (row) from the events storage group.

Note:

CTRL click and/or SHIFT click can be used to select multiple event entities (rows) before selecting or clearing the check box.

In the Events Storage group above the Event Entities folder, the Event Entities box is automatically populated to provide a summary of the event entities selected for the events storage group. In addition, under the Event Entities box, the items field displays a count of the number of event entities selected for the events storage group.

Parent topic: [Adding an events storage group](#)

Adding events logging rules to an events storage group

Events logging rules are added to an events storage group to specify the rate at which the event entities in the events storage group should be logged and under what conditions the events should be logged.

There is only one choice of events logging rule:

- Severity and Level Based.

To add an events logging rule to an events storage group:

1. Right-click on the events storage group  that you want to add logging rules to, then click New Events Logging Rule Severity and Level Based.

The selected logging rule will be added to the Data Storage view. The main window (central area) of VibroSight Configurator will update to show the summary view for the new logging rule.

2. Type a name for the new events logging rule in the Name field of the summary view shown in the main window.
 3. Under Severity Level (Alarm Events), select the check boxes for each severity level required for this events logging rule.
 4. Under Event Level (System enerated Events), clear the check boxes for each event level not required for this events logging rule.
- Note:

All Event Level (System enerated Events) are selected by default.

5. Select Condition to add a condition to the events logging rule.

Parent topic: [Adding an events storage group](#)

Related reference

[Severity and Level Based events logging rule parameters](#)

Adding conditions to an events logging rule

Conditions can be added to events logging rules in order to make the events logging dependent on the value of other system parameters.

Making events logging dependent on the value of other system parameters means that you only log data under the specific system conditions that you are interested in. This results in reduced data storage requirements.

Conditions can be added to the following events logging rule:

- Severity and Level Based.

To add a condition to an events logging rule:

1. Click on the events logging rule  to select it.

The main window (central area) of VibroSight Configurator will update to show the summary view for the logging rule.

2. Select the Condition check box to enable conditions for the events logging rule.

Any additional rule parameters related to the Condition become available.

3. Right-click in the data entry area underneath the Condition check box and click Add Data Condition.

A template line for a data condition is added in the data entry area.

4. Click (anywhere) on the data condition template and enter the required information: select the event entity, condition and units from the drop-down boxes and type any required data values. Click on another part of the data entry area when finished entering the data.

The template line for the data condition displays the updated condition.

Parent topic: [Working with events logging](#)

Removing conditions from an events logging rule

Conditions can be removed from an events logging rule when no longer required.

Removing an events logging rule results in reduced data storage requirements.

Conditions can be removed from the following data logging rules:

- Severity and Level Based.

To remove a condition from an events data logging rule:

1. Click on the events logging rule  to select it.

The main window (central area) of VibroSight Configurator will update to show the summary view for the logging rule.

2. To temporarily remove the condition from the events logging rule:
 - a. Clear the Condition check box to disable conditions for the events logging rule.

The events logging rule remains in the data entry underneath the Condition check box.

3. To permanently remove the condition from the events logging rule:
 - a. Ensure the Condition check box is selected (to allow access to the event condition).
 - b. Right-click on the event condition and click Delete.
 - c. Clear the Condition check box.

The event condition is deleted and no data conditions are enabled for the rule.

Parent topic: [Working with events logging](#)

Working with the Machinery view

The machinery view displays a structured view of the configuration in terms of the machinery being monitored, such as facility units (typically buildings) that house the machinery, machine units (such as turbines), shafts, stages, bearing planes and the measurement points (sensors and transducers). Machine states (machine operating conditions) are also defined in the machinery view for use with the logging rules defined in the data storage view.

- [Adding machinery view elements](#)

Various elements, such as facility units and machinery units are added to the machinery view to build up a view of the physical system (that is, the hardware of the actual machine) from the elements (measurement points) added in the hardware view. Machine operating conditions are also added in the machinery view.

Adding machinery view elements

Various elements, such as facility units and machinery units are added to the machinery view to build up a view of the physical system (that is, the hardware of the actual machine) from the elements (measurement points) added in the hardware view. Machine operating conditions are also added in the machinery view.

The more accurate the picture of the machine created in the machinery view, the easier it can be for integrators and operators of the system to identify a physical transducer on the machine that corresponds to a virtual (measurement) point in VibroSight. To add elements to a machinery view:

1. Add elements to the machinery view by right-clicking on existing elements, choosing the element to add from the shortcut menu that appears, then configuring the new element's parameters in the central area of the main window.
2. To add a new facility unit:
 - a. Right-click the root configuration element  (or an existing facility unit ) and click New Facility Unit on the shortcut menu that appears.

A new facility unit icon  appears, with the default name "Facility Unit 1".

- b. Modify the default name in the Name field.

The name is edited simultaneously in the Machinery View window.

3. To add a new machine unit:
 - a. Right-click the root configuration element  (or an existing facility unit ) and click New Machine Unit on the shortcut menu that appears.

A new machine unit icon  appears, with the default name "Machine Unit 1".

- b. Modify the default name in the Name field.

The name is edited simultaneously in the Machinery View window.

4. To add a new shaft:
 - a. Right-click a machine unit icon  and click New Shaft on the shortcut menu that appears.

A new shaft icon  appears, with the default name "Shaft n".

- b. Modify the default name in the Name field.

The name is edited simultaneously in the Machinery View window.

5. To add a new stage:
 - a. Right-click a shaft icon  and click New Stage on the shortcut menu that appears.
A new stage icon  appears, with the default name "Stage n".
 - b. Modify the default name in the Name field.
The name is edited simultaneously in the Machinery View window.
6. To add a new bearing plane:
 - a. Right-click a shaft icon  and click New Bearing Plane on the shortcut menu that appears.
A new bearing plane icon  appears, with the default name "Bearing Plane n".
 - b. Modify the default name in the Name field.
The name is edited simultaneously in the Machinery View window.
7. To add a new point:
 - a. Right-click on any element, except the root configuration element  and click Add Point on the shortcut menu that appears.
The Add Points dialog box appears.
 - b. In the Add Points dialog box, select the point to be added and then click O .
A new point icon  appears, with a default name taken from the hardware view.
 - c. Modify the default name in the Name field.
The name is edited simultaneously in the Machinery View window.

Parent topic: [Working with the Machinery view](#)

Working with VibroSmart DMS logical functions

Logical functions are used by VibroSmart DMS modules in order to logically combine the many individual alarm and status information bits for a module into the aggregate bits (flags) required by an application, in order to drive relay outputs. Logical function outputs can also be used as PROFIBUS slot data by VSI010 modules for communication to third-party devices.

- [Adding a VibroSmart DMS logical function](#)
VibroSmart DMS logical functions are added to the Logical Functions folder of a VibroSmart DMS module in the Hardware view of a VibroSight configuration.
- [Removing an input from a VibroSmart DMS logical function](#)
Inputs can be removed from VibroSmart DMS logical functions if no longer required.
- [Sorting inputs for a VibroSmart DMS logical function](#)
The inputs added to a VibroSmart DMS logical function can be sorted if required.
- [Removing a VibroSmart DMS logical function](#)
VibroSmart DMS logical functions can be permanently removed (deleted) from a VibroSight configuration when no longer required.

Adding a VibroSmart DMS logical function

VibroSmart DMS logical functions are added to the Logical Functions folder of a VibroSmart DMS module in the Hardware view of a VibroSight configuration.

To add a basic logical function or an advanced logical function to a VibroSmart DMS module's configuration:

1. In the Hardware view, right-click on the Logical Functions  of a VibroSmart DMS module and click New Basic Logical Function or New Advanced Logical Function from the shortcut menu that appears.
A basic logical function  or advanced logical function  will be added to the logical functions folder, as selected. The main window (central area) of VibroSight Configurator will update to show the summary view for the new logical function.
2. Type a name for the logical function in the Name field of the main window.
3. The State is enabled by default but can be Disabled if required.
4. The Function Id is given the next free logical function number but can be overwritten if required.
5. Under Function, select either AND, OR or Voting - Number as the logical operator to be applied to all of the inputs used the logical function.
6. Under Inputs, a summary view of the inputs used by the logical function is provided.
 - a. Click the Add button to add an input to the logical function.

The Logical Function Input dialog box appears.

- b. In the Logical Function Input dialog box, select the alarm and status information to use as inputs to a basic logical function.
 - c. In the Logical Function Input dialog box, select the basic logical function outputs to use as inputs to an advanced logical function.
- Note:

CTRL click or SHIFT click can be used to select multiple items.

- d. Then click **O** to use the selected inputs for the logical function.
7. Under Description, an optional description of the logical function can be typed, if required.

Parent topic: [Working with VibroSmart DMS logical functions](#)

Related reference

[Basic logical function parameters for a VibroSmart DMS module](#)

[Advanced logical function parameters for a VibroSmart DMS module](#)

[VibroSmart DMS logical functions](#)

Removing an input from a VibroSmart DMS logical function

Inputs can be removed from VibroSmart DMS logical functions if no longer required.

To remove an input from a logical function:

1. Click on the logical function  to select it.

The main window (central area) of VibroSight Configurator will update to show the summary view for the logical function.

2. Under Inputs, click on the line for the input that is to be removed, then click the Remove button.

The input will be removed from the logical function and will no longer be listed under Inputs.

Parent topic: [Working with VibroSmart DMS logical functions](#)

Sorting inputs for a VibroSmart DMS logical function

The inputs added to a VibroSmart DMS logical function can be sorted if required.

To sort the inputs added to a logical function:

1. Click on the logical function  to select it.

The main window (central area) of VibroSight Configurator will update to show the summary view for the logical function.

2. Click the title of any column under Inputs to arrange the list of logical function inputs in ascending order (for that column).

The title of the column will display a  indicator to show that the inputs are displayed in ascending order.

3. Click the title of the same column under Inputs to arrange the list of logical function inputs in descending order (for that column).

The title of the will display a  indicator to show that the inputs are displayed in descending order.

Parent topic: [Working with VibroSmart DMS logical functions](#)

Removing a VibroSmart DMS logical function

VibroSmart DMS logical functions can be permanently removed (deleted) from a VibroSight configuration when no longer required.

To remove a logical function from a VibroSmart DMS module's configuration:

1. Either:
 - a. Right-click on the logical function  and click Delete on the shortcut menu that appears.
 - b. Click on the logical function  to select it and then press DELETE (on the keyboard).
2. When prompted, click Yes to delete the logical function.

Parent topic: [Working with VibroSmart DMS logical functions](#)

Working with VibroSmart DMS outputs

Outputs are used by VibroSmart DMS modules in order to communicate their internal information and signals externally. In general, a modules relay outputs are driven by local alarm and status information and logical functions, while a modules analog outputs are driven

by local extracted data entities (DC) or processed outputs (AC). However, since a VSI010 communications interface module's basic logical functions can use alarm and status information from all of the modules in the same measurement block as inputs, its relay outputs effectively use remote information too.

- [Adding a VibroSmart DMS output](#)
VibroSmart DMS outputs are added to the Outputs folder of a VibroSmart DMS module in the Hardware view of a VibroSight configuration.
- [Configuring a VibroSmart DMS relay output](#)
A VibroSmart DMS module's relay outputs must be configured to define the local alarm, status information and/or logical functions to use as inputs and the required operation of the relay.
- [Configuring a VibroSmart DMS analog output](#)
A VibroSmart DMS module's analog outputs must be configured to define the extracted data entities (DC) or processed outputs (AC) to use as inputs and the relationship between the input and the analog output, that is, the transfer function.
- [Removing a VibroSmart DMS output](#)
VibroSmart DMS outputs can be permanently removed (deleted) from a VibroSight configuration when no longer required.

Adding a VibroSmart DMS output

VibroSmart DMS outputs are added to the Outputs folder of a VibroSmart DMS module in the Hardware view of a VibroSight configuration.

To add a relay output or an analog output to a VibroSmart DMS module's configuration:

In the Hardware view, right-click on the Outputs  of a VibroSmart DMS module and click New Relay or New Analog Output from the shortcut menu that appears.

A relay  or analog output  will be added to the outputs folder, as selected. The main window (central area) of VibroSight Configurator will update to show the summary view for the new relay or analog output.

Parent topic: [Working with VibroSmart DMS outputs](#)

Related tasks

[Configuring a VibroSmart DMS analog output](#)

[Removing a VibroSmart DMS output](#)

Related reference

[VibroSmart DMS outputs](#)

Configuring a VibroSmart DMS relay output

A VibroSmart DMS module's relay outputs must be configured to define the local alarm, status information and/or logical functions to use as inputs and the required operation of the relay.

To configure a relay output for a VibroSmart DMS module's configuration:

1. Click on the relay output  to select it.

The main window (central area) of VibroSight Configurator will update to show the parameters for the relay output.

2. Type a name for the logical function in the Name field of the main window.
3. The State is enabled by default but can be Disabled if required.
4. The Function Id is given the next free logical function number but can be overwritten if required.
5. Under Function, select either AND, OR or Voting - Number as the logical operator to be applied to all of the inputs used the logical function.
6. Under Inputs, a summary view of the inputs used by the logical function is provided.
 - a. Click the Add button to add an input to the logical function.

The Logical Function Input dialog box appears.

- b. In the Logical Function Input dialog box, select the alarm and status information to use as inputs to a basic logical function.
- c. In the Logical Function Input dialog box, select the basic logical function outputs to use as inputs to an advanced logical function.

Note:

CTRL click or SHIFT click can be used to select multiple items.

- d. Then click O to use the selected inputs for the logical function.
7. Under Description, an optional description of the logical function can be typed, if required.

Parent topic: [Working with VibroSmart DMS outputs](#)

Related reference

[VibroSmart VSI010 relay output parameters](#)

[VibroSmart VSV30x relay output parameters](#)

Configuring a VibroSmart DMS analog output

A VibroSmart DMS module's analog outputs must be configured to define the extracted data entities (DC) or processed outputs (AC) to use as inputs and the relationship between the input and the analog output, that is, the transfer function.

To configure an analog output for a VibroSmart DMS module's configuration:

1. Click on the analog output ☐ to select it.

The main window (central area) of VibroSight Configurator will update to show the parameters for the analog output.

2. Type a name for the analog output in the Name field of the main window.
3. The State is enabled by default but can be Disabled if required.
4. The Output ID is given the next free analog output number but can be overwritten if required.
5. Under Output signal, use Mode of operation to select either a 4-20 mA (DC) or a $5 V_{PEA}$ (AC) output signal, the optional Output behaviour to define the operation of a nominally 4-20 mA (DC) output signal, and Signal to select the input signal or signals to use for the analog output.
Note:

When an analog output is configured as DC (Mode: DC), an Output behaviour control is used to configure the behaviour of the 4-20 mA output.

Selecting the Mode of operation automatically updates Current Output Range or Voltage Output Range as appropriate.

6. Under Current Output Range Signal or Voltage Output Range Signal, use Parameters to choose to define the relationship (transfer function) between the selected input signal and the analog output either in terms of the linear equation of a straight line (Slope and offset: Slope, Offset) or in terms of two input signal values that correspond to the limits of the analog output (Two points: Minimum, Maximum).
7. Under Transfer function, the graph displayed automatically updates to show the relationship between the selected input signal and the analog output signal.
8. Under Description, an optional description of the analog output can be typed, if required.

Parent topic: [Working with VibroSmart DMS outputs](#)

Related tasks

[Adding a VibroSmart DMS output](#)

[Removing a VibroSmart DMS output](#)

Related reference

[VibroSmart DMS outputs](#)

[VibroSmart VSV30x analog output parameters](#)

Removing a VibroSmart DMS output

VibroSmart DMS outputs can be permanently removed (deleted) from a VibroSight configuration when no longer required.

To remove a relay output or an analog output from a VibroSmart DMS module's configuration:

1. Either:
 - a. Right-click on the output ☐ and click Delete on the shortcut menu that appears.
 - b. Click on the output ☐ to select it and then press DELETE (on the keyboard).
2. When prompted, click Yes to delete the output.

Parent topic: [Working with VibroSmart DMS outputs](#)

Related tasks

[Adding a VibroSmart DMS output](#)

[Configuring a VibroSmart DMS analog output](#)

Related reference

[VibroSmart DMS outputs](#)

Working with machine states (machine operating conditions)

Machine states (machine operating conditions) are used in VibroSight in order to describe the operating modes of a machine. Accordingly, machine states can be used to help ensure that the data logging is appropriate for the mode of the machine. Therefore, it is generally recommended to use machine states (machine operating conditions) in the data logging rules configured for a system.

- [Adding a machine state \(machine operating condition\)](#)
Machine states (machine operating conditions) are added to the Machinery view of a VibroSight configuration.
- [Removing conditions from a machine state \(machine operating condition\)](#)
Conditions can be removed from a machine state (machine operating condition) if no longer required.
- [Enabling a machine state \(machine operating condition\)](#)
Machine states (machine operating conditions) can be enabled (or disabled) in order to add (or remove) their functionality in a machinery monitoring system.

- [Removing a machine state \(machine operating condition\)](#)

Machine states (machine operating conditions) can be permanently removed (deleted) when no longer required.

Adding a machine state (machine operating condition)

Machine states (machine operating conditions) are added to the Machinery view of a VibroSight configuration.

Machine states (machine operating conditions) are added to the Machine Unit Operating Conditions subfolder of an Machine Unit. To add a new machine state (machine operating condition):

1. Right-click in the tree structure of the Machinery view where you want the new element to be added (that is, on a Machine Unit Operating Conditions subfolder ) and choose New Machine Operating Condition from the shortcut menu that appears.

A new machine state (machine operating condition)  will be added to the Machine Unit Operating Conditions subfolder . The main window (central area) of VibroSight Configurator will update to show the summary view for the new machine state.

2. Type a name for the new machine state (machine operating condition) in the Name field of the main window. The Rule State can be Enabled or Disabled.
3. To define a simple machine state (machine operating condition):
 - a. Right-click in the Condition data entry area and click Add Data Condition on the shortcut menu that appears.

A template line for a data condition is added in the data entry box.

- b. Click (anywhere) on the data condition template line to enter the required information for the condition: select the data entity, relational operator, quantity and units from the drop-down boxes and type any required data values.
- c. Click on another part of the data entry box when finished entering the data.

The template line for the data condition displays the updated condition.

4. To define a more complex machine state (machine operating condition):
 - a. Right-click in the Condition data entry area and click Add group on the shortcut menu that appears.

By default, an AND group is added in the data entry box.

- b. Right click on the group and select one of the other logical groups on the shortcut menu that appears in order to change the logical operation of the group.
- c. Right-click on the group and select Add Data Condition.

A template line for a data condition is added to the (logical) group at a lower-level in the tree structure.

- d. Alternatively, right-click on the group and select Add group.

Another AND group is added to the (logical) group at a lower-level in the tree structure. Right click on the group to change the logical operation of the group.

Note:

Repeatedly using Add group and Add Data Condition allows a tree structure of (logically) combined conditions to be created. Any number of data conditions and subgroups can be added to a group in a tree structure to create a combined condition.

5. To define a machine state (machine operating condition) using existing machine states:
 - a. Right-click in the Condition data entry area and click Add State Condition on the shortcut menu that appears.

A template line for a state condition is added in the data entry box.

- b. Click (anywhere) on the state condition template line to enter the required information for the condition: select the existing operating condition, relational operator and state of the existing operating condition from the drop-down boxes.
- c. Click on another part of the data entry box when finished entering the data.

The template line for the data condition displays the updated condition.

Note:

Add group, Add Data Condition and Add State Condition can all be combined to create a (logically) combined tree structure that defines a machine state (machine operating condition). Any number of groups, data conditions and state conditions can be added to a group in a tree structure to create a combined machine state.

A list of the machine states (machine operating conditions) defined for a Machine Unit Operating Conditions subfolder is shown in the summary view of the subfolder.

Parent topic: [Working with machine states \(machine operating conditions\)](#)

Removing conditions from a machine state (machine operating condition)

Conditions can be removed from a machine state (machine operating condition) if no longer required.

To remove a condition from a machine state (machine operating condition):

1. Click on the machine state (machine operating condition) ☐ to select it.

The main window (central area) updates to show the summary view for the machine state (machine operating condition).

2. Right-click on the template line for the machine state (Group, Data Condition or State Condition) and then click Delete on the shortcut menu that appears.
3. Repeat as necessary to delete other elements.

Parent topic: [Working with machine states \(machine operating conditions\)](#)

Enabling a machine state (machine operating condition)

Machine states (machine operating conditions) can be enabled (or disabled) in order to add (or remove) their functionality in a machinery monitoring system.

To enable a machine state (machine operating condition):

1. Click on the machine state (machine operating condition) ☐ to select it.

The main window (central area) updates to show the summary view for the machine state.

2. Set the Rule State drop-down box to Enabled.

The machine state becomes active when the configuration is next activated.

Parent topic: [Working with machine states \(machine operating conditions\)](#)

Removing a machine state (machine operating condition)

Machine states (machine operating conditions) can be permanently removed (deleted) when no longer required.

To remove a machine state (machine operating condition):

1. Either:
 - a. Right-click on the machine state (machine operating condition) ☐ and click Delete on the shortcut menu that appears.
 - b. Click on the machine state (machine operating condition) ☐ to select it and then press DELETE (on the keyboard).
2. When prompted, click Yes to delete the machine state.

Parent topic: [Working with machine states \(machine operating conditions\)](#)

Working with VibroSight Configurator

The following topics describe how to work with VibroSight Configurator.

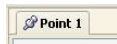
- [Pinning Open Parameter Windows](#)
When working with parameter windows, it is often useful to keep several open at the same time. You can pin open parameter windows and easily switch between them.
- [Working with Windows](#)
The VibroSight Configurator user interface is extremely flexible. You can modify its appearance in a number of ways to suit individual needs and preferences.
- [Working with Toolbars](#)
VibroSight Configurator includes a number of toolbars containing icons that represent specific actions you can perform.
- [Setting VibroSight Configurator options](#)
VibroSight Configurator has a number of settings that can be configured using the VibroSight Configurator Options window.

Pinning Open Parameter Windows

When working with parameter windows, it is often useful to keep several open at the same time. You can "pin" open parameter windows and easily switch between them.

1. Display a parameter window by selecting an element in either the Machinery View window or the Hardware View window.
2. Click the Sticky button  on the toolbar.

A tab displaying the element type and name appears at the top of the central parameters area, for example:



3. Display a different parameter window.

A second tab appears alongside the first. The tab contains the element name only:



4. To pin open this second window, click the Sticky button  again.

The element type icon is added to the tab:



5. To switch between the open parameter windows, click once on a tab.
6. Click the Close button  in the top right hand corner of the parameters window to close a window.

Parent topic: [Working with VibroSight Configurator](#)

Related reference

[The Navigation Toolbar](#)

Working with Windows

The VibroSight Configurator user interface is extremely flexible. You can modify its appearance in a number of ways to suit individual needs and preferences.

The following topics describe how to modify the user interface.

- [Floating and Docking Windows](#)
You can change docked windows into floating windows, and vice versa.
- [Auto Hiding Windows](#)
VibroSight Vision's auto hide feature allows you to make the most of limited display space by automatically hiding and showing windows.
- [Moving and Rearranging Tool Windows](#)
Tool windows can easily be moved to other areas of the VibroSight Configurator window, causing VibroSight Vision to automatically rearrange the window layout.
- [Resizing Windows](#)
All VibroSight Vision windows can be resized.

Parent topic: [Working with VibroSight Configurator](#)

Floating and Docking Windows

You can change docked windows into floating windows, and vice versa.

To change a docked window into a floating window:

Either:

1. Double-click the title bar of the window.

or:

1. Click once anywhere on the window to select it.
2. Choose Window  Floating.

To convert the window back to the docked state, either double-click its title bar or choose Window  Docked.

Parent topic: [Working with Windows](#)

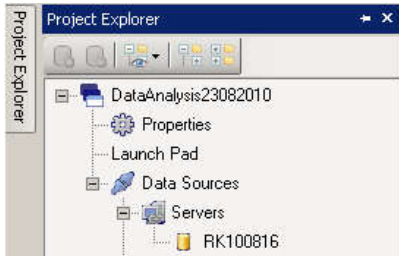
Auto Hiding Windows

VibroSight Vision's "auto hide" feature allows you to make the most of limited display space by automatically hiding and showing windows.

To auto hide a window:

1. Click the Auto Hide ("pin") button  on the window's title bar.

The window is collapsed to a vertical title bar along the left, right, or bottom edges of the main VibroSight Vision window (whichever the window is currently closest to):



An Auto Hide Window

2. To redisplay the window, move the mouse cursor over the vertical title bar.

The window is now in auto hide mode: it remains visible until you click on another area of the VibroSight Vision window, at which point it is automatically "hidden" and you must click on the vertical title bar to redisplay it.

To deactivate auto hide mode, click the Toggle Auto Hide button  on the window's title bar. The vertical title bar at the side of the window disappears and the window reverts to the docked state.

Parent topic: [Working with Windows](#)

Moving and Rearranging Tool Windows

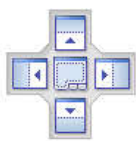
Tool windows can easily be moved to other areas of the VibroSight Configurator window, causing VibroSight Vision to automatically rearrange the window layout.

To move and rearrange tool windows:

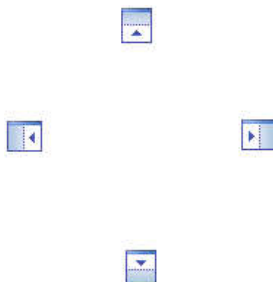
1. Click and drag the title bar of the tool window you want to move towards the middle of the VibroSight Configurator window.

A shaded rectangle is displayed to indicate where the window would be placed if you release the mouse button. Two sets of guide arrows also appear:

- a. In the centre of the screen, a diamond shape composed of four arrows:



- b. Four arrows around the outer edges of the VibroSight Configurator window:



2. Move the mouse pointer over any of the arrows. The shaded rectangle moves to the corresponding area of the VibroSight Configurator window.

For example, if you move the mouse pointer over either of the "right" arrows , the shaded rectangle moves to an area on the right of the VibroSight Configurator window.

3. Release the mouse button.

The window is moved to the area indicated by the shaded rectangle, and VibroSight Configurator automatically reorganizes the window layout.

Parent topic: [Working with Windows](#)

Resizing Windows

All VibroSight Vision windows can be resized.

To resize adjoining windows:

1. Move the mouse pointer over the boundary between two windows. The pointer changes shape:



2. Press and hold down the left mouse button then drag the mouse in any direction.
3. Release the mouse button.

To resize floating windows, move the mouse cursor over any edge or corner of the window until it changes to , , , or . Press and hold down the left mouse button, drag the mouse until the window is the size you want, then release the mouse button.

Both docked and floating windows can also be minimised, maximised, or closed by clicking the standard Windows controls on their title bars.

Parent topic: [Working with Windows](#)

Working with Toolbars

VibroSight Configurator includes a number of toolbars containing icons that represent specific actions you can perform.

- [Displaying or Hiding Toolbars](#)
You can choose to display or hide global toolbars.
- [Rearranging Toolbars](#)
You can drag and drop toolbars to different positions on the VibroSight Configurator window.
- [Floating and Docking Toolbars](#)
Global toolbars are by default docked, but you can convert them to “floating” toolbars if you wish.
- [Customizing Toolbars](#)
You can customize toolbars by adding or removing icons from the toolbar.
- [Creating Custom Toolbars](#)
You can create your own custom toolbars containing actions you require that are not available on any of the standard toolbars, or grouping together commonly used actions.

Parent topic: [Working with VibroSight Configurator](#)

Displaying or Hiding Toolbars

You can choose to display or hide global toolbars.

1. Right-click anywhere on the toolbar.

A shortcut menu appears listing all available toolbars for VibroSight Configurator. A check mark in front of the toolbar name indicates that the toolbar is displayed.

2. Click on the toolbar name to turn off (hide) or turn on (display) the toolbar.

Parent topic: [Working with Toolbars](#)

Rearranging Toolbars

You can drag and drop toolbars to different positions on the VibroSight Configurator window.

1. Click and hold on any empty space on the toolbar (that is, anywhere but on a button).
2. Drag the toolbar to a different location.
3. Release the mouse button.

Parent topic: [Working with Toolbars](#)

Floating and Docking Toolbars

Global toolbars are by default "docked", but you can convert them to "floating" toolbars if you wish.

1. Double-click on the handle on the left edge of the toolbar . The toolbar changes to a floating toolbar.
2. Drag the window to a different location.

To change the toolbar back to its original docking position, double-click on the title bar of the toolbar window.

Parent topic: [Working with Toolbars](#)

Customizing Toolbars

You can customize toolbars by adding or removing icons from the toolbar.

1. Click the ▼ button on the right hand edge of the toolbar and choose Add or Remove Commands.
2. Click on the check mark of a command to display or hide the command.

To reset the toolbar to its default contents, choose Customize → Reset Toolbar instead.

Parent topic: [Working with Toolbars](#)

Creating Custom Toolbars

You can create your own custom toolbars containing actions you require that are not available on any of the standard toolbars, or grouping together commonly used actions.

1. Click the ▼ button on the right edge of the toolbar and choose Customize. Alternatively, right-click on any empty space on the toolbar and choose Customize. The Customize Command Bars window appears.
2. Click New.
3. Enter a name for the toolbar and specify its default docking position on the VibroSight Vision window, then click OK.

Parent topic: [Working with Toolbars](#)

Setting VibroSight Configurator options

VibroSight Configurator has a number of settings that can be configured using the VibroSight Configurator Options window.

1. In VibroSight Configurator, click Tools → Options.

The VibroSight Configurator Options window is displayed.

2. Select a category of options from the tree structure view (left) in order to display the current settings for the options (right).
3. Modify the settings for the options (right), as required.
4. Click OK to store and use the updated settings for the VibroSight Configurator, or Cancel.

Parent topic: [Working with VibroSight Configurator](#)

Related reference

[VibroSight Configurator Options window](#)

VibroSight Configurator menus

- [VibroSight Configurator File menu](#)
The VibroSight Configurator File menu contains options allowing you to create, manage and activate configurations for VibroSight projects.
- [VibroSight Configurator Edit menu](#)
The VibroSight Configurator Edit menu supports the modification of elements (nodes) in VibroSight configurations.
- [VibroSight Configurator View menu](#)
The VibroSight Configurator View menu allows you to choose the mode of operation for VibroSight Configurator and which windows to display.
- [VibroSight Configurator Tools menu](#)
The VibroSight Configurator Tools menu allows you to modify optional VibroSight Configurator settings.
- [VibroSight Configurator Help menu](#)
The VibroSight Configurator Help menu allows you to access help, save diagnostic information from a VibroSight system and display information about the version of VibroSight software.

VibroSight Configurator File menu

The VibroSight Configurator File menu contains options allowing you to create, manage and activate configurations for VibroSight projects.

The following commands are available:

- New

Creates a new configuration for use with VibroSight:

VibroSight Server Configuration – creates a configuration for a VibroSight project.

Modbus Server Configuration – creates a configuration for a VibroSight Modbus Server (slave).

OPC Server Configuration – creates a configuration for a VibroSight OPC Server (slave).

Note:

For a VibroSmart DMS being used with a “direct connection” (without a VibroSight Server), a VibroSight Server Configuration is still used as the starting point to create the configuration.

- Open

Opens an existing configuration for use with VibroSight:

File – opens the configuration from an XML-based configuration file:

A *.vscfg configuration file is for a VibroSight Server Configuration.

A *.mscfg configuration file is for a VibroSight Modbus Server.

A *.opcscfg configuration file is for a VibroSight OPC Server.

Server / Database – open the configuration from a VibroSight Server.

Device – open the configuration from the hardware (VM600 XMx16 cards or VibroSmart devices).

Note:

This is known as a “direct connection” to the hardware, as it bypasses any VibroSight Server.

Historical data archive – open the configuration from a VibroSight historical data archive file (*.vshda).

- Close

Closes the open configuration. If the configuration has unsaved changes, you are prompted to save the changes.

- Save

Saves the open configuration as either a VibroSight Server Configuration (*.vscfg), Modbus Server Configuration (*.mscfg) or OPC Server Configuration (*.opcscfg), as appropriate.

When using File Save, the same file location and file name are used.

- Save As

Saves the open configuration for use with VibroSight:

File – saves the configuration as an XML-based configuration file (*.vscfg, *.mscfg or *.opcscfg, as appropriate).

Server / Database – saves the configuration as a VibroSight Server and VibroSight data repository.

More specifically, a new VibroSight Server is created for the configuration, then the VibroSight Server is automatically started and connected to, and the configuration is saved to the VibroSight Server.

Note:

Starting with VibroSight 3.0.0, when a VibroSight Server configuration is saved as a Server / Database, a VibroSight historical data folder (*.vshdf) is created and used as the VibroSight data repository.

Previously, with VibroSight 2.12.7 or earlier, when a VibroSight Server configuration was saved as a Server / Database, a

VibroSight database (*.vssrvdb) was created and used as the VibroSight data repository.

Note:

For a VibroSmart DMS being used with a “direct connection” (without a VibroSight Server), a VibroSight Server Configuration is still used as the starting point to create the configuration.

When using File → Save As, a different file location and/or file name can be used.

- Apply changes to running configuration

Uploads and applies (activates) the latest (saved) version of the VibroSight Server configuration to the associated VibroSight Server or VibroSight device(s):

For machinery monitoring projects using a VibroSight Server (VM600 XMx16 cards and/or VibroSmart devices with a “server connection”), the configuration is activated on the VibroSight Server.

Machinery monitoring projects using a VibroSight Server must have created a VibroSight Server before the configuration can be activated, that is, File → Save As → Server / Database must have been used.

For machinery monitoring projects not using a VibroSight Server (VibroSmart devices with a “direct connection”), the configuration is activated on the VibroSmart devices.

Machinery monitoring projects not using a VibroSight Server must not have created a VibroSight Server before the configuration is activated, that is, only File → Save As → File must have been used.

- Revert to running configuration

Downloads the configuration running on the associated VibroSight Server to VibroSight Configurator, replacing (overwriting) the currently open VibroSight Server configuration.

- Exit

Exits (closes) VibroSight Configurator. If an open VibroSight configuration has unsaved changes, you are prompted to save the changes before VibroSight Configurator closes.

Parent topic: [VibroSight Configurator menus](#)

VibroSight Configurator Edit menu

The VibroSight Configurator Edit menu supports the modification of elements (nodes) in VibroSight configurations.

The following commands are available:

- Copy

Copies the currently selected element (node) to the clipboard. Also available using the CTRL + C keyboard shortcut.

- Paste

Pastes the contents of the clipboard to the current location. Also available using the CTRL + V keyboard shortcut.

- Delete

Permanently removes the currently selected element (node) from the VibroSight configuration. Also available using the DELETE key.

For example, these commands can be used to help create and edit VibroSight configurations.

Note:

If the Edit menu commands are unavailable (greyed out), check that a suitable element (node) has been selected in a Hardware view, Machinery view or Data Storage view window.

Parent topic: [VibroSight Configurator menus](#)

VibroSight Configurator View menu

The VibroSight Configurator View menu allows you to choose the mode of operation for VibroSight Configurator and which windows to display.

The following commands are available to choose the mode of operation for VibroSight Configurator:

- Hierarchical Mode

Selects the hierarchical mode of operation.

This mode of operation is an arrangement of VibroSight Configurator windows that uses the Data Storage view, Hardware view and Machinery view windows. This mode/arrangement provides the maximum amount of configuration parameter information to the user for an individual channels or processing blocks. Information can only be viewed on a per channel or processing block basis, so it is the recommended view for initially entering configuration information.

- Multi Edit Mode

Selects the multi-edit mode of operation.

This mode of operation is an arrangement of VibroSight Configurator windows that uses the Hardware view and Properties windows. This mode/arrangement provides summary information that supports the comparison of configuration parameters. Information can be viewed and modified for more than one channel and processing block at a time, so it is the recommended view for comparing and modifying existing configuration data that has already been entered.

The following commands are available to select the windows to display:

- Hardware View

Displays the Hardware View window. By default, the window is displayed in the right-hand side of the screen in the Hierarchical Mode, and in left-hand side of the screen in the Multi Edit Mode.

- Machinery View

Displays the Machinery View window. By default, the window is displayed in the left-hand side of the screen in the Hierarchical Mode.

- Storage View

Displays the Data Storage View window. By default, the window is displayed in the left-hand side of the screen in the Hierarchical Mode.

- Properties

Displays the Properties window. By default, the window is displayed in the right-hand side of the screen in the Multi Edit Mode.

- Consistency Check

Displays the Consistency Check window in the bottom part of the window.

Parent topic: [VibroSight Configurator menus](#)

Related reference

[The Machinery view](#)

[The Hardware view](#)

[The Consistency Check Window](#)

VibroSight Configurator Tools menu

The VibroSight Configurator Tools menu allows you to modify optional VibroSight Configurator settings.

The following commands are available:

- Options

Displays the Options window containing program options.

- Unit Preferences

Displays the Unit Preferences dialog box.

Choose one of the predefined unit sets to be used throughout VibroSight: "Metric" to display metric units (this is the default setting) or "Imperial" to display imperial units.

Alternatively, use the Manage unit sets button to access the Unit Sets dialog box and manage the units sets used by VibroSight. For example, unit sets can be copied, renamed, imported, exported, and set as active. This allows unit preferences to be quickly customized to meet the needs of an application and preferred unit sets to be shared between VibroSight installations.

Note:

The standard (Metric and Imperial) unit sets included with VibroSight are read-only and cannot be edited. However, customizable

unit sets can be created by the user, for example, by copying a standard unit set or importing a unit set from another VibroSight installation. These (non-standard) unit sets can be customized by enabling or disabling the Physical quantity and the Used Units available for the physical quantity.

Parent topic: [VibroSight Configurator menus](#)

VibroSight Configurator Help menu

The VibroSight Configurator Help menu allows you to access help, save diagnostic information from a VibroSight system and display information about the version of VibroSight software.

The following commands are available:

- Contents

Displays the  VibroSight help that comes with the VibroSight software.
- Save diagnostic information

Allows diagnostic information for the VibroSight system, including log files (*.xlog) for all of the VibroSight software modules, system information and event information to be saved to a file. This information about a VibroSight system can be useful to Meggitt Sensing Systems customer support when investigating certain issues.
- About VibroSight ...

Displays information about the version of VibroSight software being used.

Parent topic: [VibroSight Configurator menus](#)

VibroSight Configurator toolbars

VibroSight Configurator includes a number of global and local toolbars.

- [VibroSight Configurator Standard toolbar](#)

The VibroSight Configurator Standard toolbar contains buttons to help you quickly perform common operations.
- [The Navigation Toolbar](#)

The Navigation toolbar allows you to manage the configuration windows.

VibroSight Configurator Standard toolbar

The VibroSight Configurator Standard toolbar contains buttons to help you quickly perform common operations.

The following buttons appear in the VibroSight Configurator Standard toolbar:

Button	Description
	New Create a new configuration for either a VibroSight Server, a VibroSight Modbus Server or a VibroSight OPC Server. Note: For a VibroSmart DMS being used with a “direct connection” (without a VibroSight Server), a configuration for a VibroSight Server is still used as the starting point to create the configuration.
	Open Open an existing configuration for either a VibroSight Server, a VibroSight Modbus Server or a VibroSight OPC Server. For a configuration for a VibroSight Server, the configuration can be opened either from a configuration file for a VibroSight Server (*.vscfg), from a VibroSight Server, or from a device (that is, by “direct connection” to VibroSmart DMS modules). For a configuration for a VibroSight Modbus Server, the configuration can be opened from a configuration file for a VibroSight Modbus Server (*.mscfg). For a configuration for a VibroSight OPC Server, the configuration can be opened from a configuration file for a VibroSight OPC Server (*.opcscfg).
	Save

Save the current configuration.

Note:

For a VibroSmart DMS being used with a “direct connection” (without a VibroSight Server), the configuration must always be saved as a file (not as a server/database).



Apply changes to running configuration

Uploads and applies (activates) the latest (saved) version of the VibroSight Server configuration to the associated VibroSight Server or VibroSight device(s).

Note:

For machinery monitoring projects using a VibroSight Server (VM600 XMx16 cards and/or VibroSmart devices with a “server connection”), the configuration is activated on the VibroSight Server.

For machinery monitoring projects not using a VibroSight Server (VibroSmart devices with a “direct connection”), the configuration is activated on the VibroSmart devices.



Copy (CTRL C)

Copy the selection to the Clipboard.



Paste (CTRL V)

Paste the contents of the Clipboard.



Delete (DELETE)

Delete the selection.



Login

Displays the Select a User Level window to allow the user level (access rights) to be modified.

For example, only users with the appropriate access rights are allowed to create, modify or activate configurations.

Parent topic: [VibroSight Configurator toolbars](#)

Related tasks

[Creating a VibroSight Server configuration](#)

The Navigation Toolbar

The Navigation toolbar allows you to manage the configuration windows.

The following buttons appear in the navigation toolbar (keyboard shortcut keys are shown in parentheses).

Button	Description
	Back (CTRL LEFT ARROW)
	Display the previous configuration element in the navigation history.
	Forward (CTRL RIGHT ARROW)
	Display the next configuration element in the navigation history.
	Sticky
	Click to keep the current configuration element window open when you open other configuration elements.
	When deselected, configuration element windows close automatically whenever you display another configuration element window.

Parent topic: [VibroSight Configurator toolbars](#)

VibroSight Configurator windows

- [VibroSight Configurator user interface](#)
VibroSight Configurator implements a configuration-based user interface that is used for the creation of VibroSight configurations such as VibroSight Server configurations, Modbus server configurations and/or OPC server configurations.
- [The Machinery view](#)
The Machinery view appears by default on the left of the main window. The Machinery view and the Data Storage view share screen space with the required view selected by a tab.
- [The Data Storage view](#)

The Data Storage view appears on the left of the main window. The Data Storage view and the Machinery share screen space with the required view selected by a tab.

- [The Hardware view](#)

The Hardware view appears by default on the right of the main window.

- [The Consistency Check Window](#)

A configuration is not a simple set of independent elements: many elements of the configuration are related to each other. Changing a parameter of one element can have an impact on other elements further down or up the configuration's hierarchy.

- [VibroSight Configurator Options window](#)

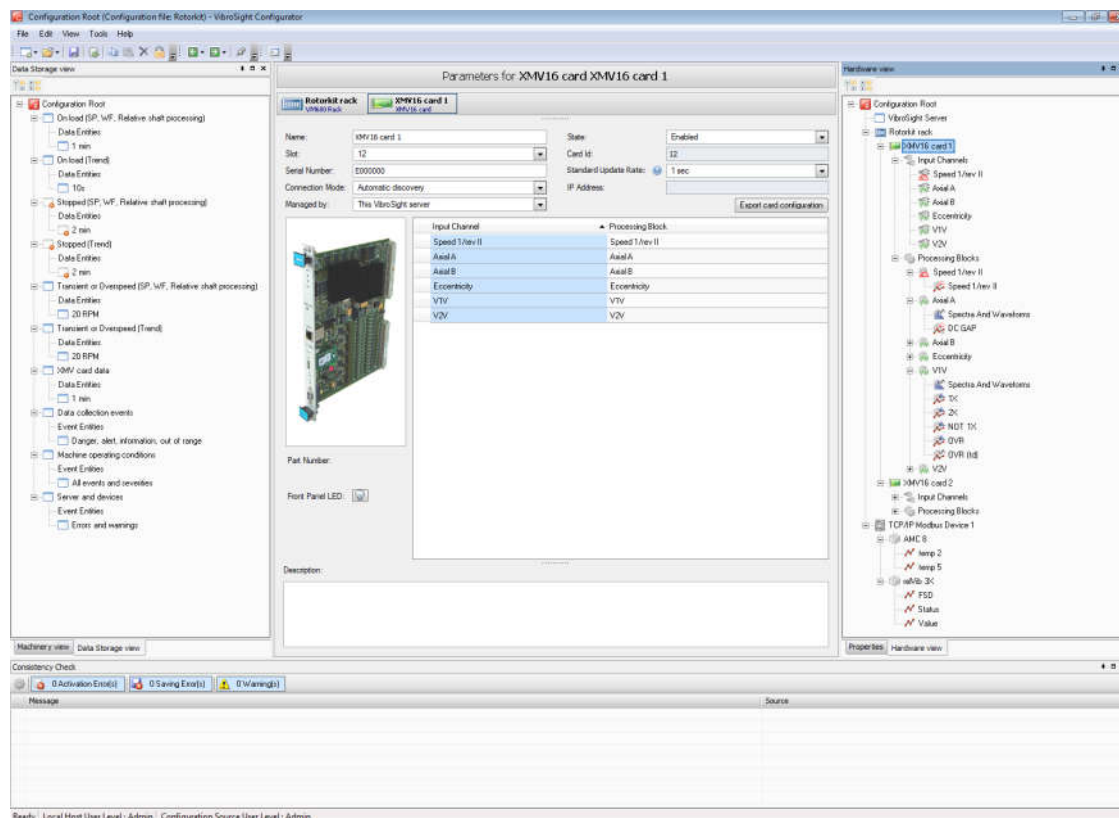
The VibroSight Configurator Options window allows the general options that are user configurable to be displayed and modified.

VibroSight Configurator user interface

VibroSight Configurator implements a configuration-based user interface that is used for the creation of VibroSight configurations such as VibroSight Server configurations, Modbus server configurations and/or OPC server configurations.

The VibroSight Configurator user interface implements a multiple window tabbed document interface that provides all of the tools necessary for creating, displaying and editing configurations. When a new VibroSight Server configuration, Modbus server configuration or OPC server configuration is created, the windows are displayed in their default arrangement. However, VibroSight implements a flexible docking framework that supports the custom arrangement of windows (on a VibroSight Configurator basis), which allows the layout of the windows to be easily customised to meet the needs of a configuration.

The figure below shows the VibroSight Configurator user interface (in hierarchical mode), with the default arrangement of the windows, as displayed when working with a VibroSight Server configuration. Looking from top to bottom and left to right, it consists of a title bar, a menu bar, a toolbar, a tabbed tool window containing the Machinery view and the Data Storage view on the left, the main working area for parameters in the centre, a tabbed tool window containing the Hardware view on the right, a Consistency Check window and a status bar.



VibroSight Configurator user interface (in hierarchical mode – showing a VibroSight Server configuration)

Title bar

The title bar at the top of the VibroSight Configurator user interface displays the type of VibroSight Configurator configuration (VibroSight Server, Modbus server or OPC server) and the name of the VibroSight software module.

Note:

The title bar will also include the text (Configuration file: file name) after the type of VibroSight Configurator configuration if the configuration has been saved as a file or the text (Server: server name) after the type of VibroSight Configurator configuration if the configuration has been saved as a server / database.

Menu bar

The menu bar provides access to VibroSight Configurator commands, arranged by function.

Note:

Some menu bar commands are unavailable (greyed out) depending on the user level (access rights) and/or whether they are relevant to the work currently being done with the software.

Toolbar

The toolbar provides access to the most frequently used VibroSight Configurator commands, using toolbar buttons as shortcuts.

Note:

Some menu bar commands are unavailable (greyed out) depending on the user level (access rights) and/or whether they are relevant to the work currently being done with the software.

Machinery view and Data Storage view tool windows

For a VibroSight Server configuration, the Machinery view tool window (left) is used to configure a VibroSight Server configuration in terms of the user machinery that is actually being monitored: such as facility units, machine units, shafts, stages, bearing planes and ultimately the measurement points. It is also used to configure the machine states (machine operating conditions) that can be used to characterise the machinery.

The Machinery view uses measurement points that correspond to the input channels configured using the Hardware view. The Machinery view is typically more useful when using the VibroSight-based system to perform condition monitoring. (The Machinery view and the Hardware view provide two complementary views of the complete system configuration (VibroSight Server configuration) as hierarchical tree structures.)

Note:

The Machinery view tool window is used when configuring a VibroSight Server, it is not used to configure a Modbus server or a OPC server.

For a VibroSight Server configuration, the Data Storage view tool window (left) is used to configure the data logging rules for a VibroSight Server configuration in terms of data storage folders, data storage groups, data entities and data logging rules. It is also used to configure the event logging rules for a VibroSight Server configuration in terms of events storage groups, event entities and events logging rules.

The Data Storage view uses data entities that correspond to the measurements waveforms, spectra and extracted data configured using the Hardware view. It also uses event entities that correspond to the alarms (alarm events) configured using the Hardware view and events (system generated events) generated by the machinery monitoring system itself.

Note:

The Data Storage view tool window is used when configuring a VibroSight Server, it is not used to configure a Modbus server or a OPC server.

Main working area

The main working area in the centre of the VibroSight Configurator user interface is used to display and edit the parameters for VibroSight configurations such as VibroSight Server configurations, Modbus server configurations and/or OPC server configurations.

For a VibroSight Server configuration, VibroSight Configurator has two main modes of operation – Hierarchical Mode and Multi Edit Mode:

- Hierarchical Mode uses the Hardware view, Machinery view, Data Storage view and the main working area. This mode of operation provides the maximum amount of configuration parameter information to the user for an individual channel, processing block or measurement.

Note:

In Hierarchical Mode, information can only be viewed on a per channel, processing block or measurement basis, so it is the recommended view for initially entering configuration information.

- Multi Edit Mode uses the Hardware view, a Properties window and the main working area. This mode of operation provides summary information that supports the comparison of configuration parameters.

Note:

In Multi Edit Mode, information can be viewed and modified for more than one channel, processing block or measurement at a

time, so it is the recommended view for comparing and modifying configuration data that has already been entered.

Note:

Hierarchical Mode (the default) or Multi Edit Mode is selected using the View command on the VibroSight Configurator menu bar. Only one mode can be active at a time.

For a VibroSight Server configuration, selecting and/or adding a particular element (node level) in the hierarchical tree structure in the Hardware view, Machinery view or Data Storage view will display the associated parameters in the main working area, where they can be configured/edited.

For a Modbus or OPC server configuration, a Modbus or OPC server is added to the Hardware view. Selecting the Modbus or OPC server node in the Hardware view will display the associated parameters in the main working area, where they can be configured/edited.

Hardware view tool window

For a VibroSight Server configuration, the Hardware view tool window (right) is used to configure a VibroSight Server configuration in terms of the VibroSight condition monitoring equipment deployed: such as the VibroSight Server, VM600 racks and XMx16 cards, and VibroSmart DMS measurement blocks and devices. The Hardware View is typically more useful when commissioning a VibroSight-based system.

The Hardware view uses input channels that correspond to the measurement points configured using the Machinery view. The Hardware view is typically more useful when creating and commissioning a VibroSight-based system. (The Hardware view and the Machinery view provide two complementary views of the complete system configuration (VibroSight Server configuration) as hierarchical tree structures.)

Note:

The Hardware view tool window is used when configuring a VibroSight Server, it is not used to configure a Modbus server or a OPC server.

Consistency Check window

The Consistency Check window (bottom) of the VibroSight Configurator user interface is the front end of an integrated consistency-checker tool that helps ensure the correctness and validity of configurations.

The consistency-checker tool automatically checks the configuration whenever it is saved and lists all consistency errors and warnings detected. A consistency check can also be run at any time using the Run Consistency Checks command.

Status bar

The status bar at the bottom of the VibroSight Configurator user interface provides information about the operation and the status of the configuration.

On the left of the status bar, the user level is displayed (User Level).

In the middle of the status bar, revision information about a VibroSight Server configuration configuration can be displayed (Running Configuration), depending on the source (File, Server / Database, Device or Historical data archive) and status (changed, saved and/or activated) of the configuration.

Parent topic: [VibroSight Configurator windows](#)

Related concepts

[Configurator Modes](#)

[Consistency checks](#)

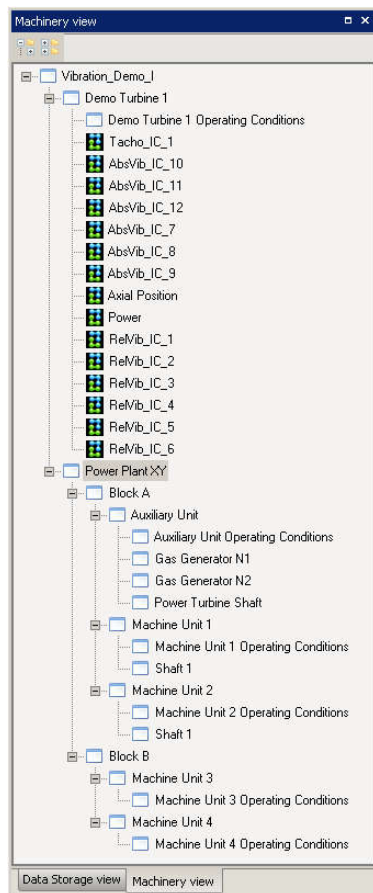
Related tasks

[Apply changes to \(activate\) a running configuration](#)

The Machinery view

The Machinery view appears by default on the left of the main window. The Machinery view and the Data Storage view share screen space with the required view selected by a tab.

The Machinery view displays a structured view of the configuration in terms of the machinery being monitored, for example, the facility units (typically buildings) that house the machinery, machines (such as turbines), shafts, and measurement points (sensors and transducers). Machine states (machine operating conditions) are also defined in the machinery view.



Machinery view

Toolbar

The following buttons are available on the toolbar.

Button	Description
	Expand All. Expands all nodes below the currently selected node.
	Collapse All. Collapses all nodes below the currently selected node.

Tree view

The tree view is a hierarchical representation of the machinery-related components contained in the current configuration.

The following components can be displayed:

	Configuration
	The Configuration Root is the top-level item of a configuration.
	Facility Unit
	A facility unit is a collective name for the machine room, or collection of machine rooms, in which the machinery being monitored is installed.
	Machine Unit
	The term machine unit is used to describe complex machinery types, particularly multi-shaft systems. Sensors are installed in or on the machine to measure vibration, position, speed, pressure, power, and other parameters.
	Shaft
	Each machine unit can have one or multiple shafts. A shaft is a rotating, reciprocating, or oscillating component of a machine, usually operating within a cylinder or housing.
	Stage
	Each shaft can have one or multiple stages, which are used to help specify more exactly the location of a (measurement)

point on a machine.



Bearing Plane

Each shaft can have one or multiple bearing planes, which are used to help specify more exactly the location of a (measurement) point on a machine.



Point

A point is a unique data collection location, for example, a vibration sensor on a shaft. One point must be configured for each set of measurement data collected. A point in the machinery view corresponds to an input channel in the hardware view.



Machine operating conditions (machine states)

Each Machine Unit contains a Machine Unit Operating Conditions subfolder. Machine states (machine operating conditions) are added to this subfolder to describe the operating modes of the machinery being monitored. The machine states (machine operating conditions) can then be used by the data logging rules configured for a system to help ensure that the data logging is appropriate for the operating mode of a machine.

Parent topic: [VibroSight Configurator windows](#)

Related reference

[VibroSight Configurator View menu](#)

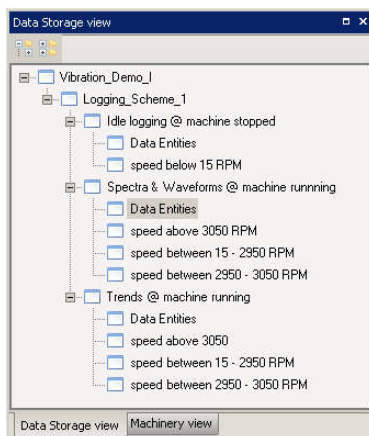
[The Hardware view](#)

[The Consistency Check Window](#)

The Data Storage view

The Data Storage view appears on the left of the main window. The Data Storage view and the Machinery share screen space with the required view selected by a tab.

The Data Storage view displays a structured view of the configuration in terms of the data logging, for example, groups of data entities and their logging rates as a function of machine speed.



Data Storage view

Toolbar

The following buttons are available on the toolbar.

Button	Description
	Expand All. Expands all nodes below the currently selected node.
	Collapse All. Collapses all nodes below the currently selected node.

Tree view

The tree view is a hierarchical representation of the data logging configured for the current configuration.

The following components can be displayed:



Data Storage Folder

A Data Storage Folder is an element used to organise the other elements of a Data Storage configuration.

 A Data Storage Folder can only contain Data Storage groups.

Data Storage group

A Data Storage group is an element used to group together elements which will have the same logging rules applied to them. When a Data Storage group is created, a Data Entities element (like a subfolder) is automatically created, which allows the data entities to be selected from a list.

 A Data Storage group can contain Data Logging Rules and other Data Storage groups.

Data Logging Rule

A Data Logging Rule is used to decide under what system conditions data should be logged for a Data Storage group. Data Logging Rules can be of the following types:

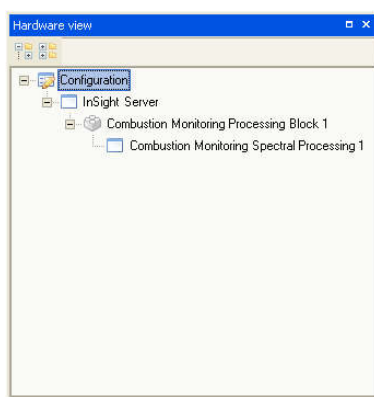
- Time Based
- Value Based
- Alarm Event Based.

Parent topic: [VibroSight Configurator windows](#)

The Hardware view

The Hardware view appears by default on the right of the main window.

The Hardware view displays a structured view of the configuration in terms of the VibroSight-compatible hardware deployed: the VibroSight server that stores and processes measurement data, VM600 racks, cards inserted in the racks and so on.



The Hardware view

The Hardware view comprises a toolbar and a tree view.

Toolbar

The following buttons are available on the toolbar.

Button	Description
	Expand All. Expands all nodes below the currently selected node.
	Collapse All. Collapses all nodes below the currently selected node.

Tree View

The Tree View is a hierarchical representation of the hardware-related components contained in the current configuration.

The following components can be displayed:

	Configuration
	A VibroSight Server configuration contains all of the parameters of a VibroSight-compatible hardware measurement chain, including both the machinery being monitored and the monitoring equipment
	Server

A VibroSight Server is the core software module that interacts with all other parts of a VibroSight system. It is the only part of the system to access the VibroSight data repositories (historical data folders (*.vshdf)) used for the logging of measurement and event data. It also communicates with the VibroSight-compatible hardware (VM600 cards and VibroSmart devices). So all interaction with a VibroSight data repository and most interaction with the hardware must pass through a VibroSight Server.



Rack

A VM600 series rack from Meggitt Sensing Systems' Vibro-Meter product line contains a combination of condition monitoring, machinery protection, input/output, relay, and power supply cards. This includes the XMV16 / XIO16T and XMC16 / XIO16T card pairs.



Card

XMV16 and XMC16 extended monitoring cards are completely software configured using the VibroSight Configurator



Input Channels

A container for all defined input channels.



Tacho Input Channel

An input channel assigned to an input signal that measures the velocity of a point, usually in terms of RPM. Also called a *tacho* signal.



Dynamic Input Channel

An input channel is the hardware path that measurement data takes. For example, from a measurement device such as a sensor, through a XMV16 measurement card in a VM600 rack or a VSV30x measurement module in a VibroSmart DMS, then through to the VibroSight software.



Combustion Monitoring Processing Block

A Combustion Monitoring processing block is a container for combustion monitoring data processed for a machine. Using VibroSight Vision, you can import the data contained in a processing block and display it on special Combustion Monitoring plots such as the Moniturbine plot.



Processing Blocks

A processing block defines the signal processing performed on an input channel in order to produce the required measurements for physical output and data presentation in VibroSight.



Tacho Processing Block

A processing block defines the signal processing performed on an input channel in order to produce the required measurements for physical output and data presentation in VibroSight.



Tacho Processing Block Extracted Variable

Tacho speed extraction elements allow you to define extracted variables for the associated speed channel.



Dynamic Processing Block

A processing block defines the signal processing performed on an input channel in order to produce the required measurements for physical output and data presentation in VibroSight.



Dynamic Processing Block Extracted Spectra and Waveforms

Spectra and waveforms are a data group/type extracted from an associated dynamic processing block.



Dynamic Processing Block Extracted Frequency

Frequency domain data are a data group/type extracted from an associated dynamic processing block.

Parent topic: [VibroSight Configurator windows](#)

Related reference

[VibroSight Configurator View menu](#)

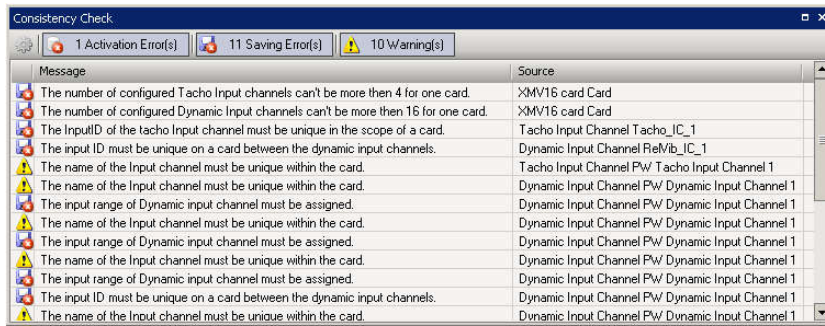
[The Machinery view](#)

[The Consistency Check Window](#)

The Consistency Check Window

A configuration is not a simple set of independent elements: many elements of the configuration are related to each other. Changing a parameter of one element can have an impact on other elements further down or up the configuration's hierarchy.

The Consistency Check window lists all consistency errors and warnings detected in the current configuration.



The Consistency Check Window

Click the Run button  to manually run a consistency check on the current configuration.

Click the Activation Error(s) button to list or hide error messages relating to the activation of the current configuration.

Click the Saving Error(s) button to list or hide error messages relating to the saving of the current configuration.

Click the Warnings button to list or hide warning messages relating to consistency problems in the current configuration.

Parent topic: [VibroSight Configurator windows](#)

Related concepts

[Consistency checks](#)

Related tasks

[Creating a VibroSight Server configuration](#)

Related reference

[VibroSight Configurator View menu](#)

[The Machinery view](#)

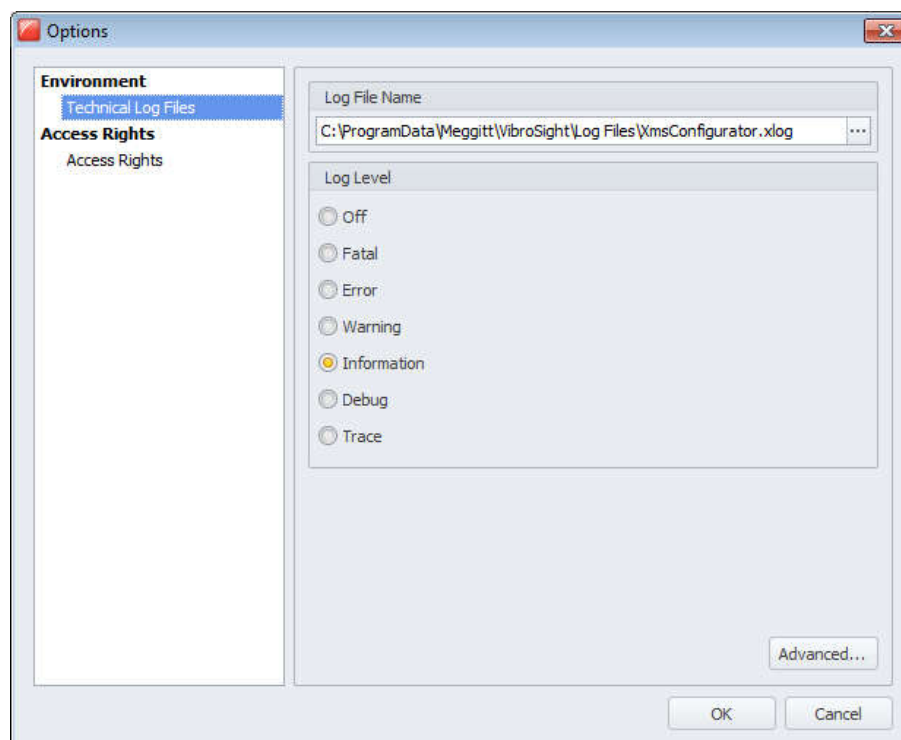
[The Hardware view](#)

VibroSight Configurator Options window

The VibroSight Configurator Options window allows the general options that are user configurable to be displayed and modified.

For VibroSight Configurator, these general options include technical log file and access rights settings.

As the figure below shows, the VibroSight Configurator Options window consists of two panes: the left pane organises the options by function and allows a particular option to be selected, while the right pane displays the settings for the option selected in the left pane.



VibroSight Configurator Options window

Environment

Technical log files

Use the Log file name control to navigate the folders on the computer and select in which folder and under what file name to save the VibroSight Configurator log file (*.xlog). However, the it is recommended that the default folder and file are used.

Use the Log level option buttons to select the level of detail that is written to the VibroSight Configurator log file:

- Off (no information is written, the least processing overhead)
- Fatal
- Error
- Warning
- Information
- Debug
- Trace (lots of information is written, the most processing overhead).

Access rights

Access rights

Under Revert, use the Revert to Read privileges after control to enter the time period after which the VibroSight Configurator user level will automatically return to the default Read user level.

Parent topic: [VibroSight Configurator windows](#)

Related tasks

[Setting VibroSight Configurator options](#)

Configuration parameters

The following topics describe all the parameters you must specify for a VibroSight Configurator configuration.

- [Configuration root parameters](#)
A VibroSight Server configuration contains all of the parameters of a VibroSight-compatible hardware measurement chain, including both the machinery being monitored and the monitoring equipment.
- [Facility Unit Parameters](#)
A facility unit is a collective name for the buildings, machine rooms, or other facilities in which the machinery being monitored is installed.
- [Machine Unit Parameters](#)
The term machine unit is used to describe complex machinery types, particularly multi-shaft systems. Sensors are installed in or on the machine to measure vibration, position, speed, pressure, power, and other parameters.
- [Shaft Parameters](#)
Each machine unit can have one or multiple shafts. A shaft is a rotating, reciprocating, or oscillating component of a machine, usually operating within a cylinder or housing.
- [Point Parameters](#)
A point is a unique data collection location, for example, a vibration sensor mounted adjacent to a rotor shaft. One point must be configured for each set of measurement data collected. Digital, analogue and vibration point types can be created.
- [VibroSight Configurator VibroSight Server parameters](#)
VibroSight Server is the core software module that interacts with all other parts of a VibroSight system. So all interaction with a VibroSight data repository and most interaction with the hardware must pass through a VibroSight Server.
- [VM600 Rack parameters](#)
A VM600 series rack from Meggitt Sensing Systems' Vibro-Meter product line contains a combination of condition monitoring, machinery protection, input/output, relay, and power supply cards. This includes the XMV16 / XIO16T and XMC16 / XIO16T card pairs.
- [DMS Measurement Block parameters](#)
A VibroSmart DMS measurement block from Meggitt Sensing Systems' Vibro-Meter product line can contain a combination of VibroSmart devices for condition monitoring and machinery protection functions. This includes the VSI010 and VSV30x modules.
- [VM600 XMV16 card parameters](#)
VM600 XMV16 extended monitoring cards can be added to configurations.
- [VM600 XMC16 card parameters](#)
VM600 XMC16 extended monitoring cards can be added to configurations.
- [VM600 CPUR card parameters](#)
VM600 CPUR central processing unit cards can be added to configurations.
- [VibroSmart VSI010 parameters](#)
VibroSmart VSI010 modules must be added to a measurement block in order to be added to a configuration.
- [VibroSmart VSV30x parameters](#)

VibroSmart VSV30x modules must be added to a measurement block in order to be added to a configuration.

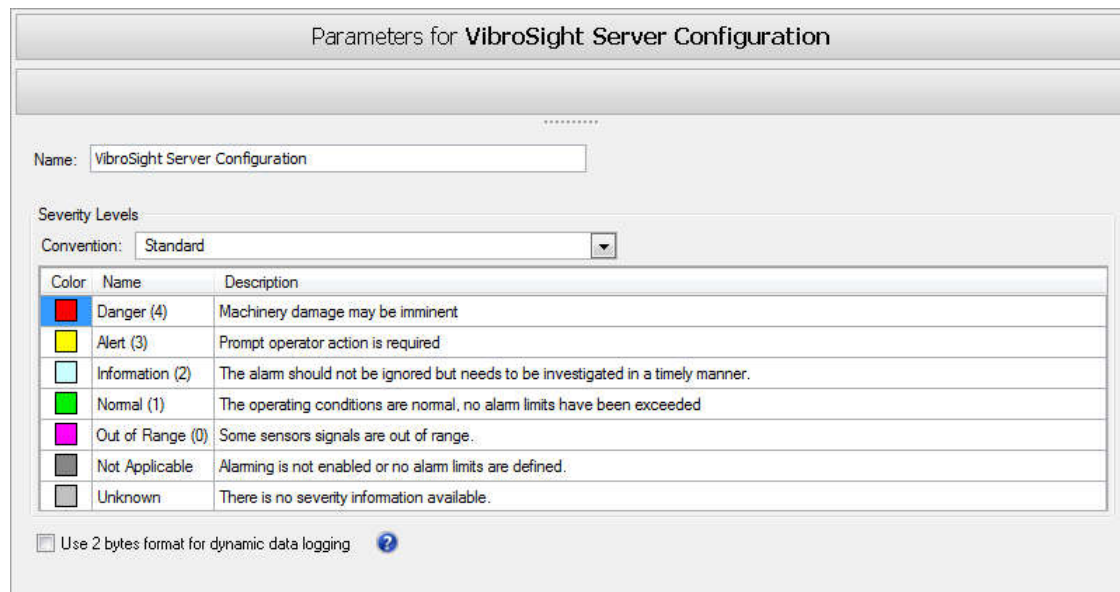
- [Data logging rule parameters](#)
The data logging rule parameters – options and requirements – depend on the type of data logging rule.
- [Events logging rule parameters](#)
The events logging rule parameters – options and requirements – depend on the events logging rule.

Configuration root parameters

A VibroSight Server configuration contains all of the parameters of a VibroSight-compatible hardware measurement chain, including both the machinery being monitored and the monitoring equipment.

The Configuration Root is the top-level item of a configuration.

To configure the configuration root, select the Configuration icon  in either the Machinery View or the Hardware View windows:



Parameters for **VibroSight Server Configuration**

Name:

Severity Levels

Convention: Standard

Color	Name	Description
	Danger (4)	Machinery damage may be imminent
	Alert (3)	Prompt operator action is required
	Information (2)	The alarm should not be ignored but needs to be investigated in a timely manner.
	Normal (1)	The operating conditions are normal, no alarm limits have been exceeded
	Out of Range (0)	Some sensors signals are out of range.
	Not Applicable	Alarming is not enabled or no alarm limits are defined.
	Unknown	There is no severity information available.

☐ Use 2 bytes format for dynamic data logging 

Root configuration parameters

Name

The name of the configuration, for example "VibroSight Server Configuration".

Severity Levels

A list of the available severity levels for this configuration together with their text descriptions. For compatibility with existing Meggitt Sensing Systems' products, VibroSight allows two different sets of terminology to be used – Standard (shown above) and CMS – selected using the Convention drop-down list. The only difference between these conventions is with the Names used by the severity levels: in all other ways, they are both treated exactly the same by the VibroSight software.

Use 2 bytes format for dynamic data logging

By default, a VibroSight Server uses a 4-byte data format for all dynamic measurement data such as waveforms, spectra and orbits in order to maximise the dynamic range of the measurements. However, using a 2-byte data format for all dynamic measurement data (that is, each measurement point) can significantly reduce the size of the required VibroSight data repository (*.vshdf) and reduce disk drive usage, at the expense of the dynamic range of the measurement data.

When the Use 2 bytes format for dynamic data logging check box is cleared, the VibroSight Server will use a 4-byte data format to log all dynamic data (this is the default behaviour).

When the Use 2 bytes format for dynamic data logging check box is selected, the VibroSight Server will use a 2-byte data format to log all dynamic data.

- [Severity levels and colour-coding for VM600 rack-based systems](#)
VibroSight provides a predefined range of severity levels, that are colour-coded and used consistently by all of the software modules to monitor and log events for VM600 rack-based systems.
- [Severity levels and colour-coding for VibroSmart DMS-based systems](#)
VibroSight provides a predefined range of severity levels, that are colour-coded and used consistently by all of the software modules to monitor and log events for VibroSmart DMS-based systems.

Parent topic: [Configuration parameters](#)

Related concepts

[VibroSight Server configurations](#)

Related tasks

[Managing VibroSight Server configurations](#)

[Creating a VibroSight Server configuration](#)

[Saving a configuration for a VibroSight Server as a VibroSight Server](#)

[Copying a VibroSight data repository](#)

Severity levels and colour-coding for VM600 rack-based systems

VibroSight provides a predefined range of severity levels, that are colour-coded and used consistently by all of the software modules to monitor and log events for VM600 rack-based systems.

A change from one severity level to another, which occurs when the value of an measurement (extracted data entity) reaches a severity threshold (defined by the alarm limits configured for the measurement), automatically generates a severity event which can be displayed by VibroSight Event Viewer.

So, for example, when using the Time Range tool window in VibroSight Vision to access, retrieve and display historical data or using the VibroSight Event Viewer to view logged events, you can instantly see the severity level of the data.

There are seven predefined severity levels, which using the Standard convention terminology are:

Danger (4)

The highest severity level ( Danger (4)) indicates a danger condition. The latest value for this extracted data entity has satisfied the conditions for a danger alarm (either above the Danger level or below the Danger level parameters configured). This is the highest severity level and is recommended to represent system situations where machinery damage could be imminent. It is represented by the colour red ■.

Alert (3)

The next severity level ( Alert (3)) indicates an alert condition. The latest value for this extracted data entity has satisfied the conditions for an alert alarm (either above the Alert level or below the Alert level parameters configured). This severity level is recommended to represent system situations where prompt operator action is required. It is represented by the colour yellow ■.

Information (2)

The next severity level ( Information (2)) indicates an information condition. This severity level is recommended to represent system situations that are not yet critical, but need to be investigated in a timely manner. It is represented by the colour blue ■.

Normal (1)

The next severity level ( Normal (1)) indicates normal condition of the system. That is, the system is behaving without any problems. This severity level is recommended to represent alarms that should not be ignored, but higher priority alarms should be looked at first. It is represented by the colour green ■.

Out of range (0)

The lowest severity level ( Out of Range (0)) indicates an out-of-range condition defined by the Sensor O Check configuration parameters (Lower Level and Upper Level). These conditions are typically due to damaged or faulty cabling or sensors. It is represented by the colour purple ■.

Not Applicable

This severity level ( Not Applicable) indicates TBC. It is represented by the colour dark grey ■.

Unknown

This severity level ( Unknown) indicates TBC. It is represented by the colour light grey ■.

Parent topic: [Configuration root parameters](#)

Related concepts

[Severity levels](#)

Related reference

[Severity levels and colour-coding for VibroSmart DMS-based systems](#)

Severity levels and colour-coding for VibroSmart DMS-based systems

VibroSight provides a predefined range of severity levels, that are colour-coded and used consistently by all of the software modules to monitor and log events for VibroSmart DMS-based systems.

A change from one severity level to another, which occurs when the value of an measurement (extracted data entity) reaches a severity threshold (defined by the alarm limits configured for the measurement), automatically generates a severity event which can be displayed by VibroSight Event Viewer.

So, for example, when using the Time Range tool window in VibroSight Vision to access, retrieve and display historical data or using the VibroSight Event Viewer to view logged events, you can instantly see the severity level of the data.

Note:

Only a subset of the severity levels available in VibroSight are used in VibroSmart DMS-based systems.

There are four predefined VibroSmart DMS severity levels, based on VibroSight's Danger (4) and Alert (3) severity levels (using the Standard convention terminology):

Danger , Danger

The highest severity levels that are used to indicate the most serious alarm conditions. That is, when the latest value for an extracted data entity has satisfied the conditions for a danger alarm (either above the Danger level or below the Danger level parameters configured). As the highest severity levels, these are recommended to represent system situations where machinery damage could be imminent. They are represented by the colour red ■.

Alert , Alert

The other severity levels that are used to indicate less serious alarm conditions. That is, when the latest value for an extracted data entity has satisfied the conditions for an alert alarm (either above the Alert level or below the Alert level parameters configured). As the only other severity levels, these are recommended to represent system situations where prompt operator action is required. They are represented by the colour yellow ■.

Parent topic: [Configuration root parameters](#)

Related concepts

[Severity levels](#)

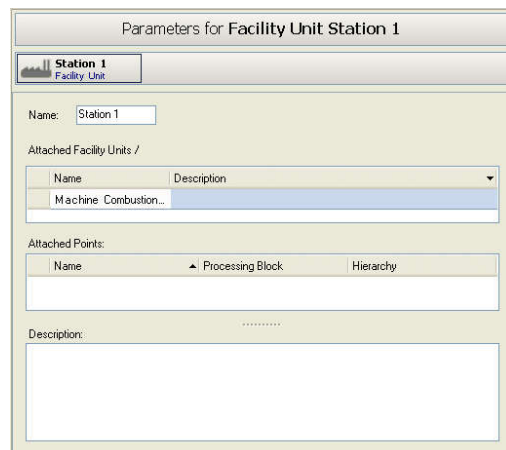
Related reference

[Severity levels and colour-coding for VM600 rack-based systems](#)

Facility Unit Parameters

A *facility unit* is a collective name for the buildings, machine rooms, or other facilities in which the machinery being monitored is installed.

To configure a facility unit, select the Facility Unit  in the Machinery View:



Facility Unit Parameters

Name

The name of the facility unit, for example "Station 1".

Attached Facility Units / Machine Units

A list of all facility or machine units that are attached to this facility unit. Each Facility Unit  and Machine Unit  that is a child element of this Facility Unit in the Machinery View window is listed. Double-click on a listed element to display its parameters.

Attached Points

A list of all measurement points that are directly attached to this facility unit. Each Point  that is a child element of this Facility Unit in the Machine View window is listed. Double-click on a listed element to display its parameters.

Description

A description of this facility unit.

Parent topic: [Configuration parameters](#)

Related concepts

[Facility Units](#)

Machine Unit Parameters

The term *machine unit* is used to describe complex machinery types, particularly multi-shaft systems. Sensors are installed in or on the machine to measure vibration, position, speed, pressure, power, and other parameters.

To configure a machine unit's parameters, select the Machine Unit icon  in the Machinery View window:

Parameters for Machine Unit Machine Combustion 1

Station 1 Facility Unit Machine Combustion 1 Shaft 1

Name: Machine Combustion 1

Attached Shafts:

Name

Attached Points:

Name	Processing Block	Hierarchy
Point1	Point01	Card 01 - Rack01
Point10	Point10	Card 01 - Rack01
Point11	Point11	Card 01 - Rack01

Description:

Machine Unit Parameters

Name

The name of this machine unit, for example "Machine Combustion 1".

Attached Shafts

A list of all shafts that belong to this machine unit. Each Shaft icon that is a child element of this Machine Unit in the Machinery View window is listed. Double-click on a listed element to display its parameters.

Attached Points

A list of all measurement points that are directly attached to this machine unit. Each Point icon that is a child element of this Machine Unit in the Machine View window is listed. Double-click on a listed element to display its parameters.

Description

A description of this machine unit.

Parent topic: [Configuration parameters](#)

Related concepts

[Machine Units](#)

Shaft Parameters

Each machine unit can have one or multiple shafts. A shaft is a rotating, reciprocating, or oscillating component of a machine, usually operating within a cylinder or housing.

To configure a shaft's parameters, select the Shaft icon in the Machinery View window:

Parameters for Shaft Shaft 1

Station 1 Facility Unit Machine Combustion 1 Shaft 1

Name: Shaft 1 Sense of Rotation: NotApplicable

Orientation: Nominal Speed:

Attached Points:

Name	Processing Block	Hierarchy

Description:

Shaft Parameters

Name

The name of this machine unit, for example "Machine Combustion 1".

Sense of Rotation

Select whether the shaft rotates clockwise or anticlockwise.

Orientation

The compass direction in which the shaft points, for example "East-West".

Nominal Speed

The nominal speed at which the shaft rotates.

Attached Points

A list of all measurement points that are directly associated with this shaft. Each Point  that is a child element of this shaft in the Machine View window is listed. Double-click on a listed element to display its parameters.

Description

A description of this shaft.

Parent topic: [Configuration parameters](#)

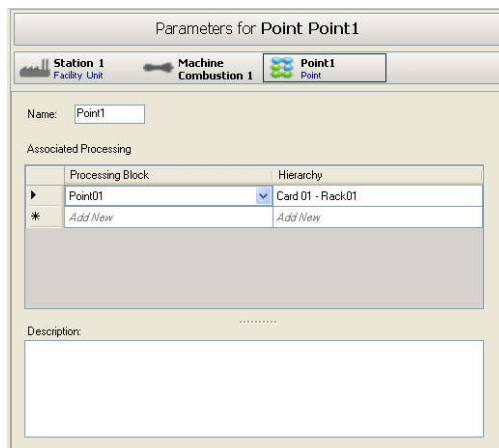
Related concepts

[Shafts](#)

Point Parameters

A point is a unique data collection location, for example, a vibration sensor mounted adjacent to a rotor shaft. One point must be configured for each set of measurement data collected. Digital, analogue and vibration point types can be created.

To configure a point's parameters, select the Point icon  in the Machinery View window:



Parameters for Point Point1

Station 1 Facility Unit Machine Combustion 1 **Point1 Point**

Name:

Associated Processing

Processing Block	Hierarchy
Point01	Card 01 - Rack01
* Add New	Add New

Description:

Point Parameters**Name**

The name of the point, for example "Point 1".

Associated Processing Blocks

In addition to being associated with a physical machine unit (these associations are shown in the Machinery View window), points can be logically associated with one or more processing blocks (shown in the Hardware View window). To associate this point with a processing block, click "Add New" then select the Processing Block with which to associate the point.

Description

An optional description of the point.

Parent topic: [Configuration parameters](#)

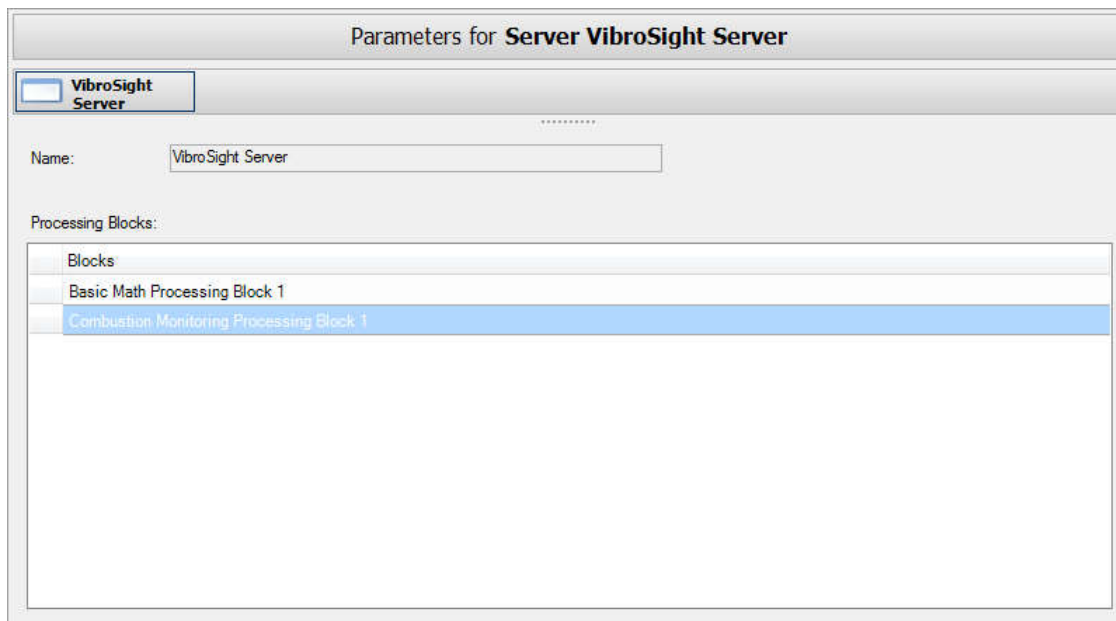
Related concepts

[Points](#)

VibroSight Configurator VibroSight Server parameters

VibroSight Server is the core software module that interacts with all other parts of a VibroSight system. So all interaction with a VibroSight data repository and most interaction with the hardware must pass through a VibroSight Server.

In VibroSight Configurator, to configure the VibroSight Server's parameters, select the  VibroSight Server (under the Configuration Root node) in the Hardware View window:



VibroSight Server parameters in VibroSight Configurator

Name

The name "VibroSight Server".

Processing Blocks

A list of all post-processing blocks currently defined for the VibroSight Server: Basic Math Processing Blocks and/or Combustion Monitoring Processing Blocks. These post-processing blocks allows new data to be created using the existing measurement data available in a system.

To view a post-processing block's parameters, double-click an entry in the list.

To add a new post-processing block, right-click on the  VibroSight Server (under the Configuration Root node) in the Hardware View and select the type of post-processing block required.

Parent topic: [Configuration parameters](#)

Related concepts

[An introduction to VibroSight Server](#)

[Basic mathematical post-processing](#)

[Combustion Monitoring Processing Blocks](#)

Related tasks

[Opening a configuration for a VibroSight Server from a server / database](#)

[Saving a configuration for a VibroSight Server as a VibroSight Server](#)

VM600 Rack parameters

A VM600 series rack from Meggitt Sensing Systems' Vibro-Meter product line contains a combination of condition monitoring, machinery protection, input/output, relay, and power supply cards. This includes the XMV16 / XIO16T and XMC16 / XIO16T card pairs.

To configure a rack's parameters, select the  VM600 Rack icon in the Hardware View window:

Parameters for VM600 Rack VM600 Rack 1

VM600 Rack 1
VM600 Rack

Name: Rack Id:

Physical Location: Rack Type:

Rack Layout:

Enabled	Slot	Card Type	Card Name	Card Serial Number
☒	3	XMC16 card	XMC16 card 1	
☒	4	XMV16 card	XMV16 card 1	
☒	5	XMVS16 card	XMVS16 card 1	

Description:

VM600 Rack parameters

Name

The name of the rack, for example "VM600 Rack 1".

Physical Location

An optional description of the rack's physical location.

Rack Id

The unique identification number (Rxx) for the VM600 rack.

This number is automatically generated by VibroSight Configurator but can be modified by the user if required. The Rack Id is required in multi-rack systems in order to uniquely identify the sub-parameters (such as cards, channels, processing blocks and extracted data) as belonging to a particular rack.

Rack Type

The type of VM600 rack being used: System (ABE04x) or Slimline (ABE056).

Rack Layout

A list of all cards currently associated with this rack. The following information is displayed for each card:

- Whether the card is enabled or disabled
- The slot number occupied by the card
- The card type, for example, XMV16 or XMC16.
- The name of the card
- The unique serial number (xxxxxxx) of the card.

Double-click on an entry to modify a card's parameters.

To add a new card, right-click on the  VM600 Rack in the Hardware View and choose either New XMC16 Card or New XMV16 Card

Description

An optional description of the rack.

Parent topic: [Configuration parameters](#)

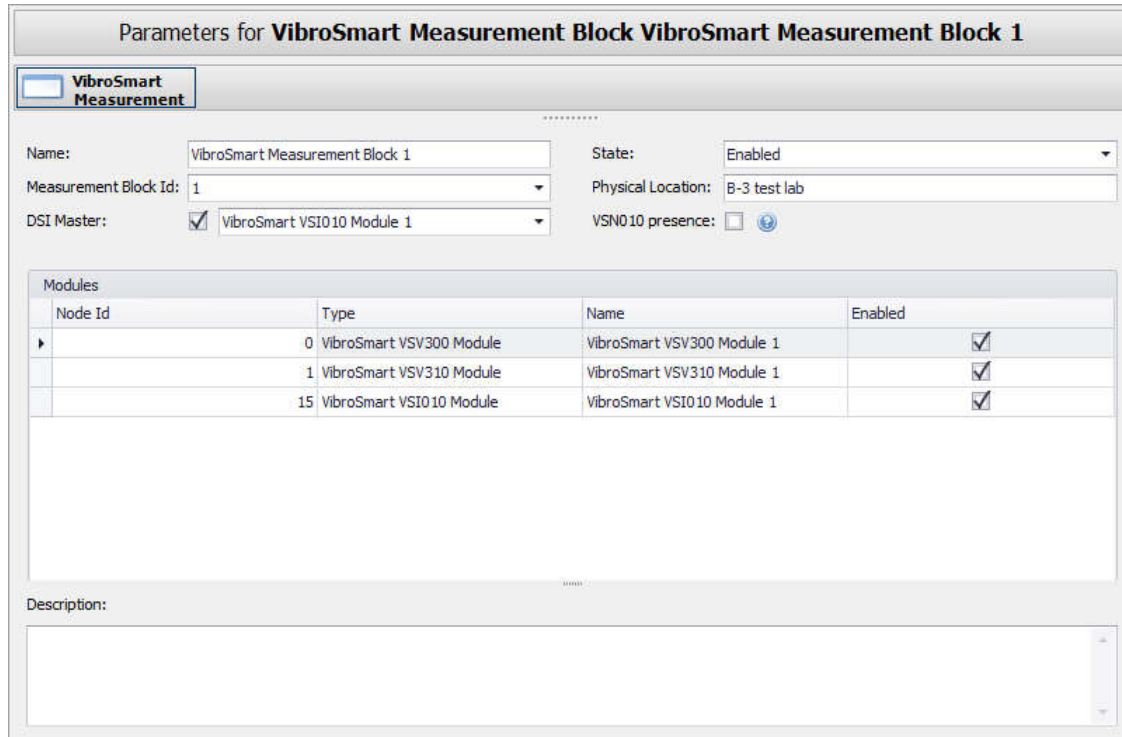
Related concepts

[Racks](#)

DMS Measurement Block parameters

A VibroSmart DMS measurement block from Meggitt Sensing Systems' Vibro-Meter product line can contain a combination of VibroSmart devices for condition monitoring and machinery protection functions. This includes the VSI010 and VSV30x modules.

To configure a DMS Measurement Block's parameters, select the  DMS Measurement Block icon in the Hardware View window:



Parameters for **VibroSmart Measurement Block VibroSmart Measurement Block 1**

VibroSmart Measurement

Name: VibroSmart Measurement Block 1 State: Enabled

Measurement Block Id: 1 Physical Location: B-3 test lab

DSI Master: ☒ VibroSmart VSI010 Module 1 VSN010 presence: ☐ 

Node Id	Type	Name	Enabled
0	VibroSmart VSV300 Module	VibroSmart VSV300 Module 1	☒
1	VibroSmart VSV310 Module	VibroSmart VSV310 Module 1	☒
15	VibroSmart VSI010 Module	VibroSmart VSI010 Module 1	☒

Description:

DMS Measurement Block parameters

Name

The name of the measurement block, for example "DMS Measurement Block 1".

Measurement Block Id

The unique identification number (x) for the DMS measurement block.

The Measurement Block Id is required in multi-measurement block systems in order to uniquely identify the sub-parameters (such as modules, channels, processing blocks and extracted data) as belonging to a particular measurement block.

State

A measurement block can be either Enabled or Disabled in a configuration.

Physical Location

An optional description of the rack's physical location.

DSI Master

For measurement blocks using more than one VibroSmart DMS module, any module in the measurement block can be selected as the DSI master for the measurement block, so that this module's DSI control inputs are used as common DSI control inputs for all of the devices in the measurement block. When enabled, the VibroSmart DMS system bus (Ethernet) is used to communicate the DSI control input signals from the DSI master to the other devices in the measurement block. So, this feature can be used to reduce external wiring requirements and potential interconnection failures. To select a VibroSmart DMS module as the DSI master for a measurement block, select the DSI Master check box in the main window and use the drop-down list box to select the name of the module to use as the master.

VSN010 presence

For measurement blocks configured in a HSR ring network topology using a VibroSmart VSN010 real-time Ethernet switch, the use of the VSN010 must be included in the configuration. To indicate that a VSN010 device is used in the measurement block, select the VSN010 presence check box in the main window.

Modules

A summary view of all of the VibroSmart DMS modules currently associated with this measurement block.

Double-click on an entry to modify a modules' parameters.

To add a new module, right-click on the  DMS Measurement Block icon in the Hardware View and choose a New DMS xxx Module.

Description

An optional description of the module.

Parent topic: [Configuration parameters](#)

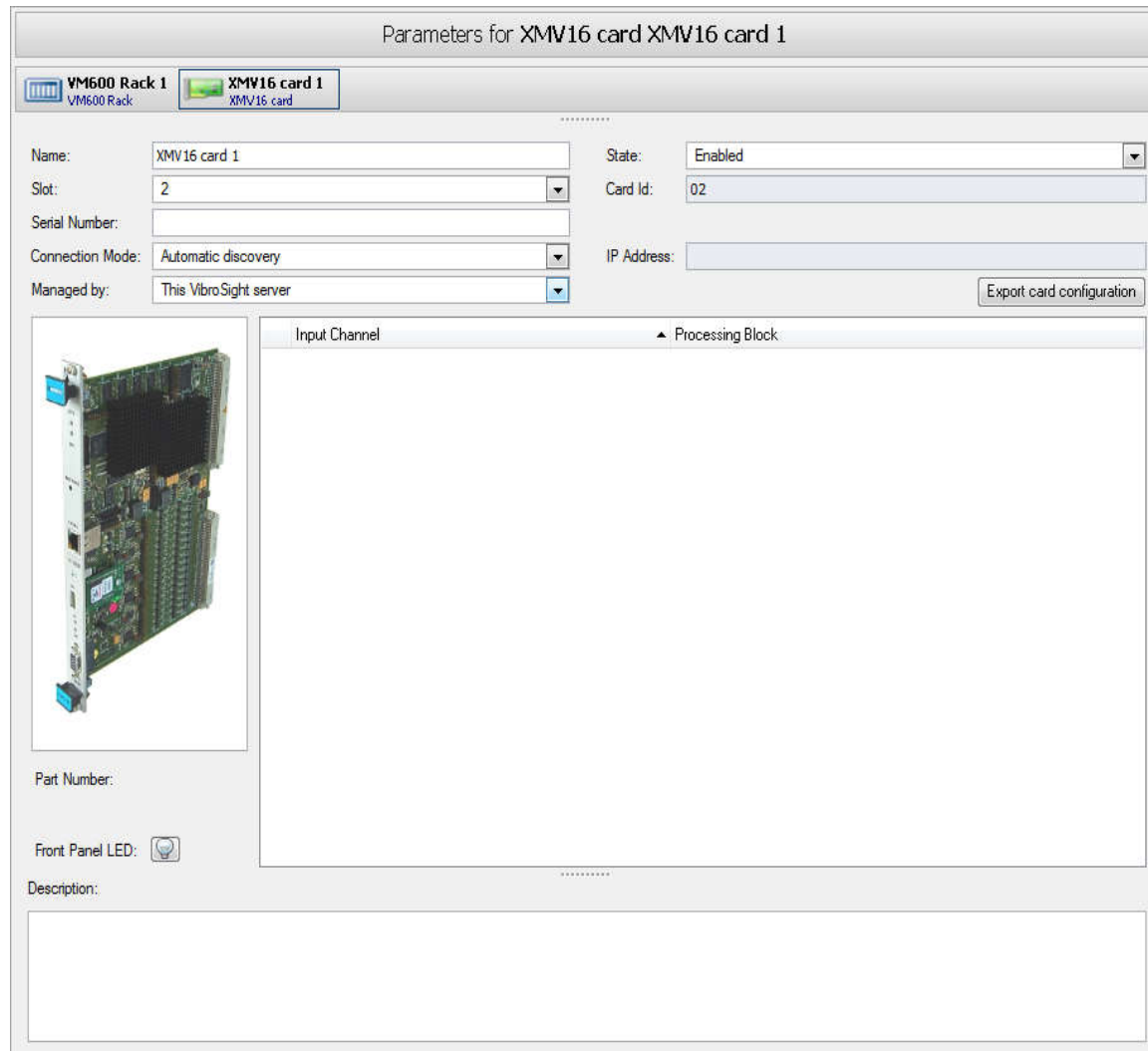
Related reference

[Adding a VSN010 to a measurement block](#)

VM600 XMV16 card parameters

VM600 XMV16 extended monitoring cards can be added to configurations.

To configure a VM600 XMV16 card's parameters, click the  XMV16 card icon in the Hardware View window:



Parameters for XMV16 card XMV16 card 1

VM600 Rack 1
VM600 Rack

XMV16 card 1
XMV16 card

Name: XMV16 card 1 State: Enabled

Slot: 2 Card Id: 02

Serial Number:

Connection Mode: Automatic discovery IP Address:

Managed by: This VibroSight server Export card configuration

Input Channel Processing Block

Part Number:

Front Panel LED: 

Description:

XMV16 card parameters

Name

The name of the card, for example "XMV16 card 1".

State

A card can be either Enabled or Disabled in a configuration. Configuring a card as disabled effectively removes the card from the configuration without having to delete it, so that it can be enabled again later.

Slot

The slot in the VM600 rack in which the card is inserted. This slot number is used by the VibroSight software to automatically generate the Card Id.

Note: Communication with a VibroSight VM600 card such as an XMx16 depends on the card's IP address so the card is not tied to its slot number (unlike previous generation VM600 cards which had to be in the slot that they were configured for in order to communicate via the VM600 rack's VME bus).

Card Id

The unique identification number (xx) for a card in a VM600 rack that is automatically generated by the VibroSight software (based on the Slot configured for the card).

Serial Number

The serial number (xxxxxxx) for the card. This is a unique number assigned by Meggitt Sensing Systems during manufacturing and must be completed if Automatic Discovery is being used as the Connection Mode.

Note:

As an IP address can be easily changed, a VM600 card such as an XMx16 should be identified by its serial number (xxxxxxx).

The serial number of a VibroSight VM600 card such as an XMx16 can be found from the serial number label (sticker) on the front panel of the card (or from the SER xxxxxxx sticker on the card itself, which can be seen when the card is removed from the VM600 rack).

Connection Mode

The Connection Mode is used to decide how the card will initially be discovered and identified by VibroSight.

If Automatic Discovery is selected, the card will be identified using the serial number that is entered manually in the Serial Number text box. The card's IP address will then automatically be read by the VibroSight software and used to complete the IP Address text box.

If IP Address is selected, the card is identified by the IP address that is entered manually in the IP Address text box (in which case, the Serial Number is not used).

IP Address

The IP address of the card.

If IP Address is selected for the Connection Mode, then the IP address for the card is entered manually here in dot-decimal notation.

Note: This field is updated automatically with the IP address of the card when the Serial Number field is completed correctly.

Managed by

Used to determine how this VM600 XMV16/XIO16T card pair is configured:

- This VibroSight Server – For an XMV16/XIO16T card pair whose configuration is required to be managed by this VibroSight Server, use Managed by: This VibroSight Server in the VibroSight Server configuration that contains the XMx16/XIO16T card pair.

Note:

This option means that this VibroSight Server will have read and write access to this XMx16/XIO16T card pair.

This is the default option when a new XMx16 card is added to a VibroSight Server configuration.

- CPUR card ... – For an XMV16/XIO16T card pair whose configuration is required to be managed by a CPUR/IOCN card pair that is also managed by this VibroSight Server, use Managed by: CPUR card ... in the VibroSight Server configuration that contains the XMx16/XIO16T card pair and CPUx/IOCx card pair.

Note:

This option means that the CPUx/IOCx card pair will have read and write access to this XMx16/XIO16T card pair and that this (or any other) VibroSight Server that communicates with this XMx16/XIO16T will have read-only access.

This option is only available when a CPUR card has been added to and is available in the VibroSight Server configuration.

- Another VibroSight Server or CPUR – For an XMV16/XIO16T card pair whose configuration is required to be managed by a CPUx/IOCx card pair that is not in the VibroSight Server configuration being edited or by another VibroSight Server, use Managed by: Another VibroSight Server or CPUR in the VibroSight Server configuration that contains the XMx16/XIO16T card pair.

Note: This option means that another different CPUx/IOCx card pair or VibroSight Server will have read and write access to this XMx16/XIO16T card pair and that this (or any other) VibroSight Server (configuration that contains the XMx16/XIO16T card pair) will have read-only access.

Export card configuration

For a VM600 XMV16/XIO16T card pair whose configuration is managed by a CPUx/IOCx card pair that is not in the VibroSight Server configuration being edited, the Export card configuration command is used to generate an individual device configuration file (*.xml) for this XMx16/XIO16T card pair that is used by a CPUx/IOCx card pair order to configure (manage) and communicate with this XMx16/XIO16T.

Input Channel / Processing Block

A summary list of the input channels and the processing blocks configured for the XMV16 card, including information on which input channels are used by which processing blocks.

Double-click an input channel or a processing block to go to the associated parameters window in the configuration.

Part Number

The Meggitt Sensing Systems part number for the card. For information only.

Front Panel LED

Click  to blink the front-panel LEDs on the card. This is useful for identifying a card in a rack and also verifies that VibroSight can communicate with the card.

Description

An optional description of the card can be typed here.

Related concepts

[VibroSight Server and VM600 cards](#)

Related tasks

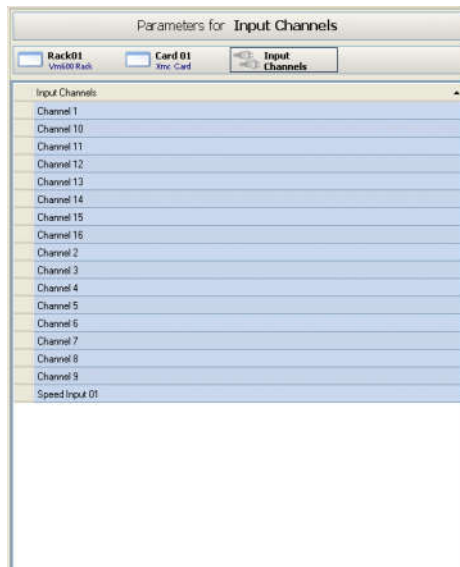
[Identifying a VM600 XMx16 card in a rack using VibroSight Configurator](#)

[Identifying a VM600 XMx16 card in a rack using VibroSight System Manager](#)

Input Channels

An input channel is the hardware path that measurement data takes. For example, from a measurement device such as a sensor, through a XMV16 measurement card in a VM600 rack or a VSV30x measurement module in a VibroSmart DMS, then through to the VibroSight software.

To view a list of all defined input channels, select the Input Channels icon  in the Hardware View window:



Input Channels

Input Channels

A list of all input channels currently defined for the card. Double-click an input channel to display the input channel's parameters.

VM600 XMC16 card parameters

VM600 XMC16 extended monitoring cards can be added to configurations.

To configure a VM600 XMC16 card's parameters, click the  XMC16 card icon in the Hardware View window:

Parameters for XMC16 card XMC16 card 1

VM600 Rack 1 XMC16 card 1

Name: XMC16 card 1 State: Enabled

Slot: 2 Card Id: 02

Serial Number:

Connection Mode: Automatic discovery IP Address:

Managed by: This VibroSight server Export card configuration

Input Channel Processing Block

Part Number:

Front Panel LED:

Description:

XMC16 card parameters

Name

The name of the card, for example "XMC16 card 1".

State

A card can be either Enabled or Disabled in a configuration. Configuring a card as disabled effectively removes the card from the configuration without having to delete it, so that it can be enabled again later.

Slot

The slot in the VM600 rack in which the card is inserted. This slot number is used by the VibroSight software to automatically generate the Card Id.

Note: Communication with a VibroSight VM600 card such as an XMx16 depends on the card's IP address so the card is not tied to its slot number (unlike previous generation VM600 cards which had to be in the slot that they were configured for in order to communicate via the VM600 rack's VME bus).

Card Id

The unique identification number (xx) for a card in a VM600 rack that is automatically generated by the VibroSight software (based on the Slot configured for the card).

Serial Number

The serial number (xxxxxxx) for the card. This is a unique number assigned by Meggitt Sensing Systems during manufacturing and must be completed if Automatic Discovery is being used as the Connection Mode.

Note:

As an IP address can be easily changed, a VM600 card such as an XMx16 should be identified by its serial number (xxxxxxx).

The serial number of a VibroSight VM600 card such as an XMx16 can be found from the serial number label (sticker) on the front panel of the card (or from the SER xxxxxxx sticker on the card itself, which can be seen when the card is removed from the VM600 rack).

Connection Mode

The Connection Mode is used to decide how the card will initially be discovered and identified by VibroSight.

If Automatic Discovery is selected, the card will be identified using the serial number that is entered manually in the Serial Number text box. The card's IP address will then automatically be read by the VibroSight software and used to complete the IP Address text

box.

If IP Address is selected, the card is identified by the IP address that is entered manually in the IP Address text box (in which case, the Serial Number is not used).

IP Address

The IP address of the card.

If IP Address is selected for the Connection Mode, then the IP address for the card is entered manually here in dot-decimal notation.

Note: This field is updated automatically with the IP address of the card when the Serial Number field is completed correctly.

Managed by

Used to determine how this VM600 XMC16/XIO16T card pair is configured:

- This VibroSight Server – For an XMC16/XIO16T card pair whose configuration is required to be managed by this VibroSight Server, use Managed by: This VibroSight Server in the VibroSight Server configuration that contains the XMx16/XIO16T card pair.

Note:

This option means that this VibroSight Server will have read and write access to this XMx16/XIO16T card pair.

This is the default option when a new XMx16 card is added to a VibroSight Server configuration.

- CPUR card ... – For an XMC16/XIO16T card pair whose configuration is required to be managed by a CPUR/IOCN card pair that is also managed by this VibroSight Server, use Managed by: CPUR card ... in the VibroSight Server configuration that contains the XMx16/XIO16T card pair and CPUx/IOCx card pair.

Note:

This option means that the CPUx/IOCx card pair will have read and write access to this XMx16/XIO16T card pair and that this (or any other) VibroSight Server that communicates with this XMx16/XIO16T will have read-only access.

This option is only available when a CPUR card has been added to and is available in the VibroSight Server configuration.

- Another VibroSight Server or CPUR – For an XMC16/XIO16T card pair whose configuration is required to be managed by a CPUx/IOCx card pair that is not in the VibroSight Server configuration being edited or by another VibroSight Server, use Managed by: Another VibroSight Server or CPUR in the VibroSight Server configuration that contains the XMx16/XIO16T card pair.

Note: This option means that another different CPUx/IOCx card pair or VibroSight Server will have read and write access to this XMx16/XIO16T card pair and that this (or any other) VibroSight Server (configuration that contains the XMx16/XIO16T card pair) will have read-only access.

Export card configuration

For a VM600 XMC16/XIO16T card pair whose configuration is managed by a CPUx/IOCx card pair that is not in the VibroSight Server configuration being edited, the Export card configuration command is used to generate an individual device configuration file (*.xml) for this XMx16/XIO16T card pair that is used by a CPUx/IOCx card pair order to configure (manage) and communicate with this XMx16/XIO16T.

Input Channel / Processing Block

A summary list of the XMx16 cards channels and the processing blocks configured for the XMC16 card, including information on which input channels are used by which processing blocks.

Double-click an input channel or a processing block to go to the associated parameters window in the configuration.

Part Number

The Meggitt Sensing Systems part number for the card. For information only.

Front Panel LED

Click  to blink the front-panel LEDs on the card. This is useful for identifying a card in a rack and also verifies that VibroSight can communicate with the card.

Description

An optional description of the card can be typed here.

Related concepts

[VibroSight Server and VM600 cards](#)

Related tasks

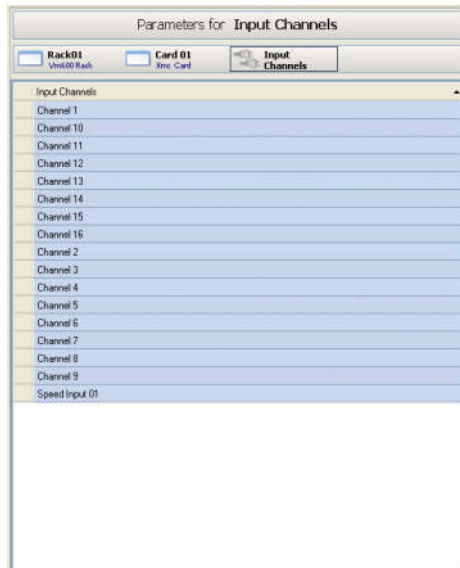
[Identifying a VM600 XMx16 card in a rack using VibroSight Configurator](#)

[Identifying a VM600 XMx16 card in a rack using VibroSight System Manager](#)

Input Channels

An input channel is the hardware path that measurement data takes. For example, from a measurement device such as a sensor, through a XMV16 measurement card in a VM600 rack or a VSV30x measurement module in a VibroSmart DMS, then through to the VibroSight software.

To view a list of all defined input channels, select the Input Channels icon  in the Hardware View window:



Input Channels

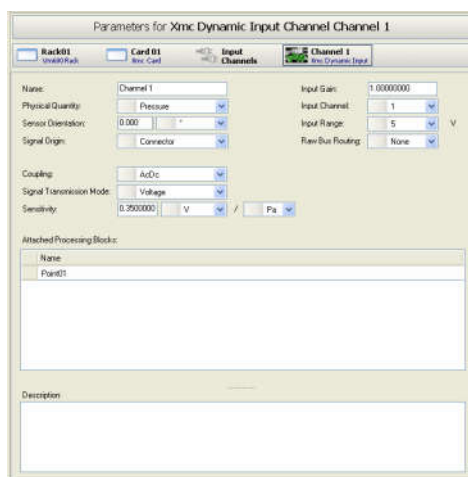
Input Channels

A list of all input channels currently defined for the card. Double-click an input channel to display the input channel's parameters.

Channel parameters

An input channel is the hardware path that measurement data takes. For example, from a measurement device such as a sensor, through a XMV16 measurement card in a VM600 rack or a VSV30x measurement module in a VibroSmart DMS, then through to the VibroSight software.

To configure a channel's parameters, select the Channel icon  in the Hardware View window:



Channel parameters

Name

The name of the channel, for example "Channel 8".

Input gain

The input gain to apply to the signal level before it continues to the main portion of the channel

Physical quantity

Select the physical quantity that the channel is measuring, for example "Pressure", "Temperature", or "Speed".

Input Channel

Select the physical input channel number on the card with which this channel is associated.

Sensor Orientation

Specifies the physical mounting orientation of the speed sensor in degrees (°) or radians with respect to a fixed reference point on the machine. The reference point and data entry of the orientation depends on the convention used: EU, Math or US.

Input Range

Select the input range of the channel, in volts.

Signal Origin

Select the origin of the signal connected to this channel, for example, the raw bus or a connector at the rear of the card.

Raw Bus Routing

Whether the signal is internally routed through the card's raw bus, and if so the name of the raw bus being used to route the signal.

Coupling

The type of coupling to apply to the signal. Choose AC to filter out the DC signal component from a signal with both AC and DC components.

Signal Transmission Mode

Whether the speed signal is transmitted as an electrical voltage or a current signal.

Sensitivity

The sensitivity of the signal. Sensitivity is the ratio of the response or change induced in the output to a stimulus or change in the input signal.

Attached Processing Blocks

A list of all processing blocks to which this channel is attached. Double-click an entry in the list to view the processing block's parameters.

Description

An optional description of the channel

Related concepts

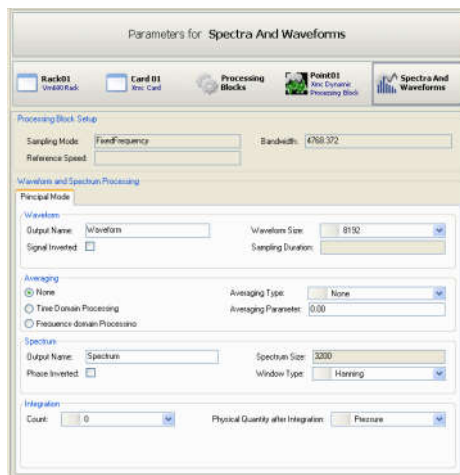
[Sensor orientation](#)

[Physical quantity and units](#)

Spectra and waveform parameters

Spectra and waveforms are dynamic input channel types providing frequency spectra and waveform data respectively.

To configure a spectra and waveform channel's parameters, select the Spectra and Waveform icon  in the Hardware View window:



Spectra and waveform parameters

Processing Block Setup

Sampling Mode

"Fixed frequency" (maximum frequency in hertz) is currently the only sampling mode supported.

Bandwidth

The fixed frequency bandwidth to be logged.

Reference Speed

The speed (tacho) channel from which the speed signal is derived.

Principal Mode - Waveform

Output Name

The name of the output, for example "Waveform 1".

Waveform Size

Select the number of waveform points to include in the spectrum.

Signal Inverted

Select this check box to invert the signal.

Sampling Duration

(When Fixed Frequency sampling mode is selected). The calculated sampling duration. The value is displayed for information only, and depends on the values of resolution and the bandwidth.

Principal Mode - Averaging

Select whether to apply averaging. The following averaging types can be applied:

- None. Do not apply averaging
- Time Domain Processing. Apply averaging in the time domain.
- Frequency Domain Processing. Apply averaging in the frequency domain.

Averaging Type

The type of averaging to apply to calculate the frequency spectrum. The value is selected automatically according to the type of averaging selecting:

- Complex. For time domain processing.
- Mean. For frequency domain processing. The mean average value of the vibration signal is used.
- Peak Hold. For frequency domain processing. The resultant frequency spectrum is the maximum amplitude at each line.

Averaging Parameter

The value of averaging parameter to use.

Principal Mode - Spectrum**Output Name**

The name of the output, for example "Spectrum 1".

Spectrum Size

The number of spectral lines to include in the spectrum.

Phase Inverted

Select this check box to invert the signal's phase.

Window Type

The type of windowing function to be applied to the time-domain data. For fixed frequency acquisition, a Hanning window should be applied.

Principal Mode - Integration**Count**

The number of integrations to apply.

Physical quantity after Integration

The units of physical quantity produced as a result of integration, for example "Dynamic Pressure".

Frequency domain parameters

Each frequency domain element configures a specific frequency band (often referred to as spectral bands or frequency components) of a dynamic channel.

To configure a frequency domain's parameters, select the Frequency Domain icon  in the Hardware View window:

Averaging Type / Input Data	Averaging Setup	Output Type	Output Name	Physical Quantity	Automatic Naming
Scale Frequency	0.00	Magnitude	Band160-300Freq	Frequency	☐
Scale Amplitude	0.00	Magnitude	Band160-300Amp	Pressure	☐
Add New	Add New	Add New	Add New	Add New	☒

Frequency Domain Parameters

Processing Block Setup

Sampling Mode

"Fixed frequency" (maximum frequency in hertz) is currently the only sampling mode supported.

Bandwidth

The fixed frequency bandwidth to be logged.

Reference Speed

If applicable, the reference speed channel for transient data collected from this machine.

Resolution

The frequency resolution, or the number of lines available in the spectrum.

Frequency Domain Extraction (Principal Measurement Mode)

Name

The name of the frequency domain.

Band Start

The lower frequency limit of the spectral band, in Hertz or Orders.

Band Stop

The higher frequency limit of the spectral band, in Hertz or Orders.

Frequency Lines Selection

Whether to process all available frequency lines, or only harmonic frequency lines.

Residual Energy

Total energy minus the energy in a defined band (for example, configure for "1X", then select residual energy to obtain "NOT 1X").

Add Side Bands

Whether to include the contribution of adjacent bins.

Extraction Mode

Choose whether to use band peak or band energy in frequency domain extractions.

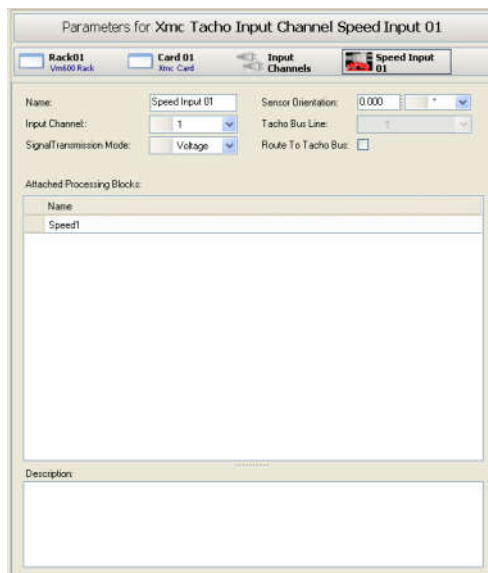
Variable Setup

Configure the frequency and amplitude outputs of the frequency domain extraction.

Speed Channel Parameters

An input channel assigned to an input signal that measures the velocity of a point, usually in terms of RPM. Also called a *tacho* signal.

To configure a speed channel's parameters, select the Speed Channel icon  in the Hardware View window:



Speed Channel Parameters

Name

The name of the speed channel, for example "Speed Input 01".

Sensor Orientation

Specifies the physical mounting orientation of the speed sensor in degrees (°) or radians with respect to a fixed reference point on the machine. The reference point and data entry of the orientation depends on the convention used: EU, Math or US.

Input Channel

The input channel number with which the speed channel is associated.

Tacho Bus Line

The speed (tacho) channel from which the machine's speed data is derived.

Signal Transmission Mode

Whether the speed signal is transmitted as an electrical voltage or a current signal.

Route To Tacho Bus

Whether or not the speed signal is being routed on one of the card's tacho bus lines.

Attached Processing Blocks

A list of all processing blocks currently attached to this speed channel. Double-click an entry in the list to view the processing block's parameters.

Description

An optional description of the speed channel.

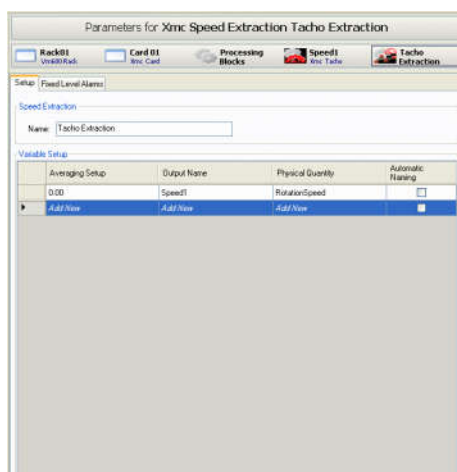
Related concepts

[Sensor orientation](#)

Tacho Extraction Parameters

Tacho speed extraction elements allow you to define extracted variables for the associated speed channel

To configure a tacho speed extraction element, select the Tacho Extraction icon  in the Hardware View window:



Tacho Extraction Parameters

Setup

Name

The name of the tacho (speed) extraction element, for example "Tacho Extraction".

Variable Setup

A list of all extracted variables configured for this extraction element. Click "Add New" in the first empty row to define a new extracted variable, then define:

- Averaging Setup.
- Output Name. The name of the associated speed channel.
- Physical quantity. The required physical quantity of the extracted output: "Rotation Speed" for a speed channel.
- Automatic Naming. Select to automatically create a default name for the variable.

Fixed Level Alarms

Allows you to define output, alarm states and limits for extracted variables.

Outputs

A list of all outputs configured for this variable.

Alarm States and Limits

A list of all alarm states and limits defined for this variable. For each alarm, specify the Lower Limit, Upper Limit, and Severity Level.

Hysteresis

The portion of a signal where a change in input does not produce a corresponding change in output. Also sometimes called "deadband". Activating hysteresis can help eliminate spurious events caused by the current value dropping frequently below then rising above an alarm level, generating multiple events.

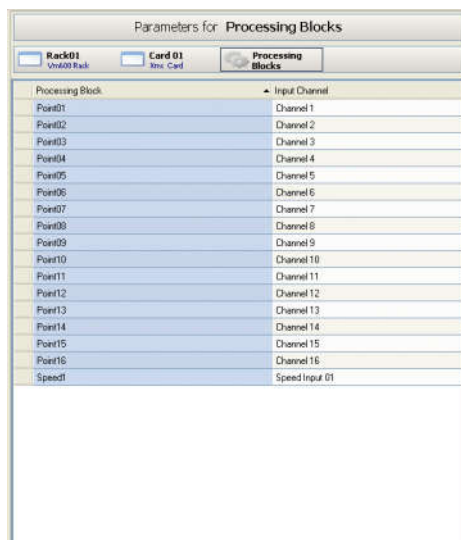
If there are no alarm limits defined for a variable, hysteresis is empty and the alarm delay is zero.

Alarm Delay

Configure an optional delay before any alarm is logged. Specify the delay in hours:minutes:seconds and hundredths of a second.

Processing Blocks

To configure a processing block's parameters, select the Processing Blocks icon  in the Hardware View window:



Processing Blocks Parameters

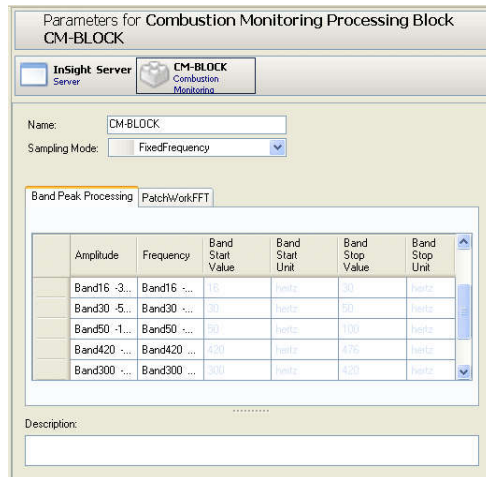
Processing Blocks

A list of all processing blocks currently defined for the card, together with the input channel with which they are associated. Double-click a processing block to display its parameters.

Combustion Monitoring Block Parameters

A Combustion Monitoring processing block is a container for combustion monitoring data processed for a machine. Using VibroSight Vision, you can import the data contained in a processing block and display it on special Combustion Monitoring plots such as the Moniturbine plot.

To configure a combustion monitoring block's parameters, select the CM-BLOCK icon  in the Hardware View window:



Parameters for Combustion Monitoring Processing Block
CM-BLOCK

Insight Server  CM-BLOCK
Combustion Monitoring

Name: CM-BLOCK

Sampling Mode: FixedFrequency

Band Peak Processing PatchWorkFFT

	Amplitude	Frequency	Band Start Value	Band Start Unit	Band Stop Value	Band Stop Unit
Band16 -3...	Band16 -...	16	Hz	20	Hz	
Band30 -5...	Band30 -...	30	Hz	50	Hz	
Band50 -1...	Band50 -...	50	Hz	100	Hz	
Band420 -...	Band420 -...	420	Hz	475	Hz	
Band300 -...	Band300 -...	300	Hz	420	Hz	

Description:

Combustion Monitoring Block Parameters

Name

The name of this Combustion Monitoring block, for example "CM-BLOCK".

Sampling Mode

Choose whether order tracking or fixed frequency is to be used to trigger the time-series data acquisition. VibroSight Configurator currently only supports fixed frequency data acquisition.

Description

An optional description of this processing block.

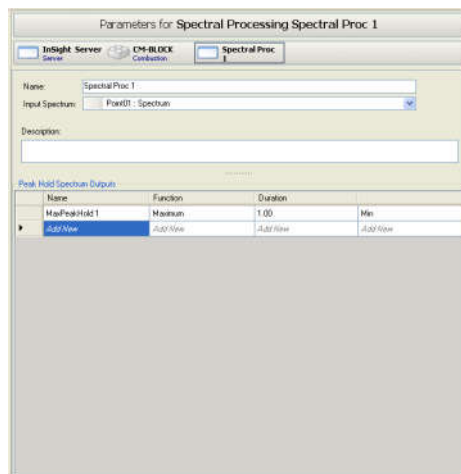
Band Peak Processing

A list of all frequency bands configured for this processing block. These frequency bands are used for performing band peak spectral processing. To create a new band, click "Add New" in the first empty row, then select values for Amplitude and Frequency.

Spectral Processing Parameters

A spectral processing

To configure a spectral processing block's parameters, select the Spectral Processing icon  in the Hardware View window:



Parameters for Spectral Processing Spectral Proc 1

Insight Server  CM-BLOCK
Combustion  Spectral Proc 1

Name: Spectral Proc 1

Input Spectrum: Peak01 Spectrum

Description:

Peak Hold Spectrum Outputs

Name	Function	Duration	Min
MaxPeakHold1	Maximum	1.00	Min
Add New	Add New	Add New	Add New

Spectral Processing Parameters

Name

Name of the spectral processing block.

Input Spectrum

Select the spectrum on which the spectral processing will be carried out.

Description

Description of the spectral processing block.

Peak Hold Spectrum Outputs

A list of all configured peak hold spectrum outputs. For each output, specify:

Name

The name of the output.

Function

The type of peak hold spectrum required: maximum or minimum.

Duration

The length of time over which each peak hold spectra should be collected, together with unit of time to apply, for example "1 minute".

VM600 CPUR card parameters

VM600 CPUR central processing unit cards can be added to configurations.

To configure a VM600 CPUR card's parameters, click the  CPUR card icon in the Hardware View window:

Parameters for CPUR card CPUR card 1

 **VM600 Rack 1**
VM600 Rack

 **CPUR card 1**
CPUR card

Name:

State:

Serial number:

Slot:

Connection mode:

IP address:

 The connection mode "Automatic Discovery" is based on the serial number.



Card name	Card type	Serial number	Slot	Management IP Address	Managed	Enabled

Description:

CPUR card parameters

Name

The name of the card, for example "CPUR card 1".

State

A card can be either Enabled or Disabled in a configuration. Configuring a card as disabled effectively removes the card from the

configuration without having to delete it, so that it can be enabled again later.

Serial Number

The serial number (xxxxxxx) for the card. This is a unique number assigned by Meggitt Sensing Systems during manufacturing and must be completed if Automatic Discovery is being used as the Connection Mode.

Note:

As an IP address can be easily changed, a VM600 card such as an CPUR should be identified by its serial number (xxxxxxx).

The serial number of a VibroSight VM600 card such as an CPUR can be found from the serial number label (sticker) on the front panel of the card (or from the SER xxxxxxx sticker on the card itself, which can be seen when the card is removed from the VM600 rack).

Slot

The slot in the VM600 rack in which the card is inserted. This slot number is used by the VibroSight software to automatically generate the Card Id.

Note:

Communication with a VibroSight VM600 card such as a CPUR depends on the card's IP address so the card is not tied to its slot number (unlike previous generation VM600 cards which had to be in the slot that they were configured for in order to communicate via the VM600 rack's VME bus).

A CPUR/IOCR card pair can only be installed in slots 0 or 1 of a VM600 (ABE04x) rack.

Connection Mode

The Connection Mode is used to decide how the card will initially be discovered and identified by VibroSight.

If Automatic Discovery is selected, the card will be identified using the serial number that is entered manually in the Serial Number text box. The card's IP address will then automatically be read by the VibroSight software and used to complete the IP Address text box.

If IP Address is selected, the card is identified by the IP address that is entered manually in the IP Address text box (in which case, the Serial Number is not used).

IP Address

The IP address of the card.

If IP Address is selected for the Connection Mode, then the IP address for the card is entered manually here in dot-decimal notation.

Note: This field is updated automatically with the IP address of the card when the Serial Number field is completed correctly.

Card name / Card type / Serial number / Slot / Management IP address / Managed / Enabled

A summary list of the XMx16 card's in the same VM600 rack as the CPUR card. Most of this information is a repeat of the information available at the card node-level for each XMx16 card.

The Management IP address text box is used to enter the IP address of the XMx16 card pair's Ethernet port allocated for CPUR to XMx16 communications, when the CPUR card is managing the configuration of the XMx16 card (that is, when Managed is selected for an XMx16 card as described below).

Note:

When specifying the Ethernet ports (network) allocated for CPUR to XMx16 communications, static IP (rather than a DHCP server) should be used when configuring the Ethernet ports in order to ensure that the IP addresses do not inadvertently change as this would break CPUR to XMx16 communications). In addition, the Ethernet ports (network) allocated to CPUR to XMx16 communications must belong to the same subnet.

The Managed check box is used to select the CPUR card as the manager of the configuration for the XMx16 card.

Note:

This Managed control is linked to the Managed by control available at the card node-level for each XMx16 card.

Description

An optional description of the card can be typed here.

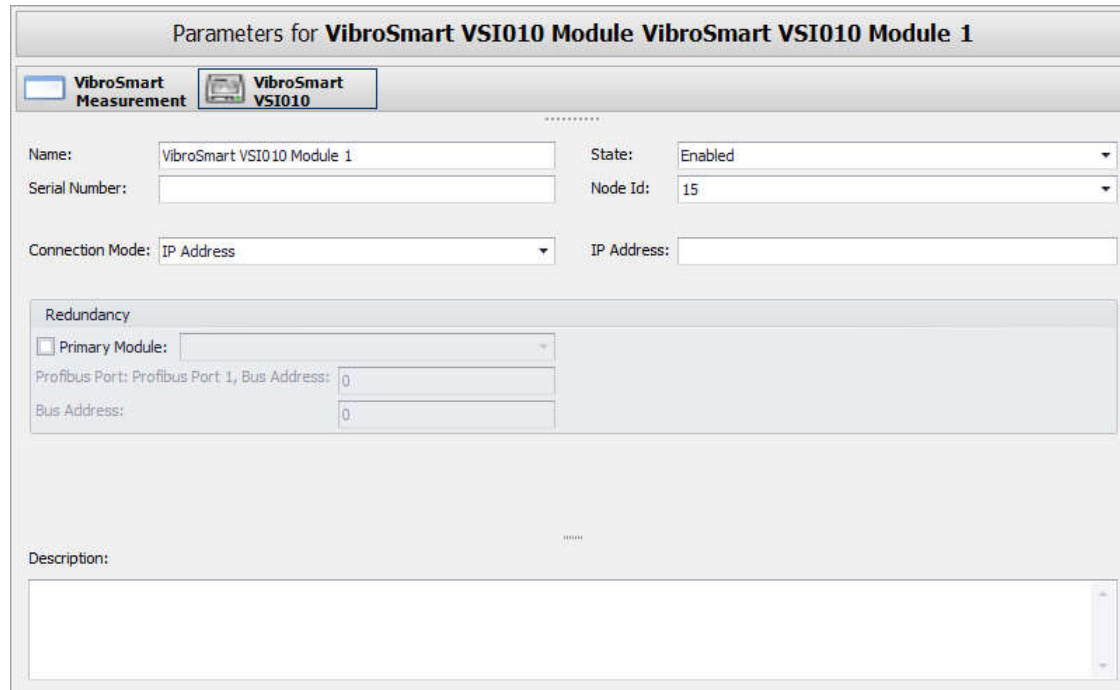
Related tasks

[Obtaining a SD file for a VM600 CPUR card](#)

VibroSmart VSI010 parameters

VibroSmart VSI010 modules must be added to a measurement block in order to be added to a configuration.

To configure a VibroSmart VSI010's parameters, click the  module icon in the Hardware View window:



VSI010 module parameters

Name

The name of the module, for example "VibroSmart VSI010 Module 1".

State

A module can be either Enabled or Disabled in a measurement block.

Serial Number

The serial number (xxxxxxxx) of the module to be used in the measurement block. This is a unique number assigned by Meggitt Sensing Systems during manufacturing.

This box must be completed if Automatic Discovery is being used as the Connection Mode.

Note: The serial number of a module can be found using either VibroSight System Manager, or for a VibroSmart DMS module such as a VSI010 or VSV30x by inspecting the label (sticker) on the terminal base that the module is clipped into, or for a VibroSmart DMS device such as a VSN010 by inspecting the label on the device itself.

Note:

As an IP address can be easily changed, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

Node Id

The unique identification number (xx) for the module in a measurement block.

The Node Id is required in multi-module systems in order to uniquely identify the sub-parameters (such as modules, channels, processing blocks and extracted data) as belonging to a particular module. It also allocates the time slot to be used by the module for real-time communications within the measurement block.

Connection Mode

The Connection Mode is used to select how VibroSight will discover and identify the VibroSmart DMS module.

If IP Address is selected, the DMS module is identified by an IP address that must be entered manually in the IP address box (in which case, the Serial Number is not required).

If Automatic Discovery is selected, the module will be identified by its Serial Number.

IP Address

The IP address of the VibroSmart DMS module.

If IP Address is selected for the Connection Mode, then the IP address for the VibroSmart DMS module is entered here. The IP address can be entered in one of two ways:

- Using the module's name (derived from the serial number) suffixed with .local. For example, vm-xmsi-AF86212.local
- Using the module's IP address directly (in dot-decimal notation).

If Automatic Discovery is selected for the Connection Mode, then VibroSight will automatically identify the VibroSmart DMS module from its Serial Number and update this box.

Redundancy

For configurations using more than one VSI010 module for redundancy, the Redundancy options can be used in order to use the configuration of the primary VSI010 as the configuration for the secondary (redundant) VSI010. Any subsequent changes made to the primary VSI010 module's configuration are also automatically applied to the secondary module.

Primary Module

For configurations using more than one VSI010 module for redundancy, for the secondary (redundant) module only, select the Primary Module check box and use the drop-down list box to select the primary module. In this way, the secondary (redundant) module will automatically use the same configuration as the primary module – except for the fieldbus port bus addresses (which must be unique).

Bus Address

For configurations using more than one VSI010 module for redundancy, for the secondary (redundant) module only, the Bus Addresses used by the fieldbus ports of the secondary module must be specified separately.

This is necessary as every device connected to a fieldbus network requires a unique address (in order to be uniquely identified). So the bus addresses for the fieldbus ports of the secondary (redundant) module cannot be just copied from the primary module.

Description

An optional description of the VibroSmart DMS module.

- [VibroSmart VSI010 fieldbus ports](#)
The VibroSmart VSI010 provides two fieldbus interfaces that can be individually configured as industry standard fieldbuses (serial-based or Ethernet-based) in order to allow a measurement block to communicate with third party devices, such as a PLC or DCS.
- [VibroSmart VSI010 logical functions](#)
The VibroSmart VSI010 provides logical functions that allow the alarm and status information from all of the modules in the same measurement block as the VSI010 module to be logically combined to form aggregate bits (flags), which can be used to drive the VSI010's relay outputs.
- [VibroSmart VSI010 outputs](#)
The VibroSmart VSI010 provides relay outputs that can be driven using the logical functions from modules in the same measurement block.

Parent topic: [Configuration parameters](#)

Related tasks

[Identifying a VibroSmart module in a DMS](#)

[Obtaining a SD file for a VibroSmart VSI010 module](#)

VibroSmart VSI010 fieldbus ports

The VibroSmart VSI010 provides two fieldbus interfaces that can be individually configured as industry standard fieldbuses (serial-based or Ethernet-based) in order to allow a measurement block to communicate with third party devices, such as a PLC or DCS.

Combining fieldbus interfaces

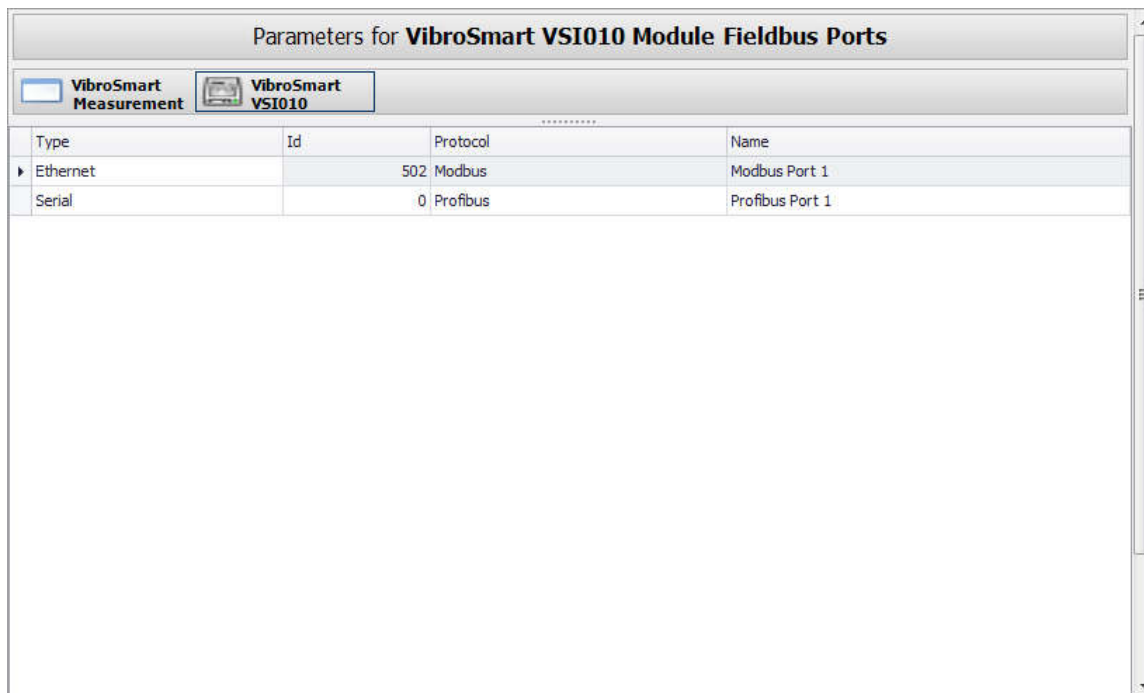
A maximum of two fieldbus protocols (serial and Ethernet) are supported by a VibroSmart VSI010 at any one time. The permitted fieldbus combinations are:

- Up to two serial-based fieldbuses
- One serial-based fieldbus and one Ethernet-based fieldbus.
- One Ethernet-based fieldbus.

Note:

The fieldbus protocols must belong to the same family, for example, Modbus RTU and/or Modbus TCP for a VSI010 supporting the Modbus protocol, PROFIBUS and/or PROFINET for a VSI010 supporting the PROFIBUS protocol.

To view a VSI010 module's fieldbus ports, click the  Fieldbus Ports icon in the Hardware View window:



VSI010 module fieldbus ports

The information displayed in the Fieldbus Ports parameters window is a summary view of the fieldbus ports configured for the module. It cannot be edited by the user.

Type

The type of fieldbus port: either Ethernet for Ethernet-based fieldbuses or Serial for serial-based fieldbuses.

Id

An identifier for the fieldbus port:

- For Ethernet-based fieldbuses, the Id uses the TCP port number configured for the port.
- For serial-based fieldbuses, the Id uses the serial port number configured for the port. For example, 0 (for COM1), 2 (for COM2) and so on.

Protocol

The specific communications protocol being used by the fieldbus port. For example, Modbus or PROFIBUS.

Name

The default name of the fieldbus interfaces. For example, Modbus Port n or PROFIBUS Port n.

- [VibroSmart VSI010 Modbus port](#)
The VibroSmart VSI010 provides up to two Modbus ports that are individually configurable.
- [VibroSmart VSI010 PROFIBUS port](#)
The VibroSmart VSI010 provides up to two PROFIBUS ports that are individually configurable.

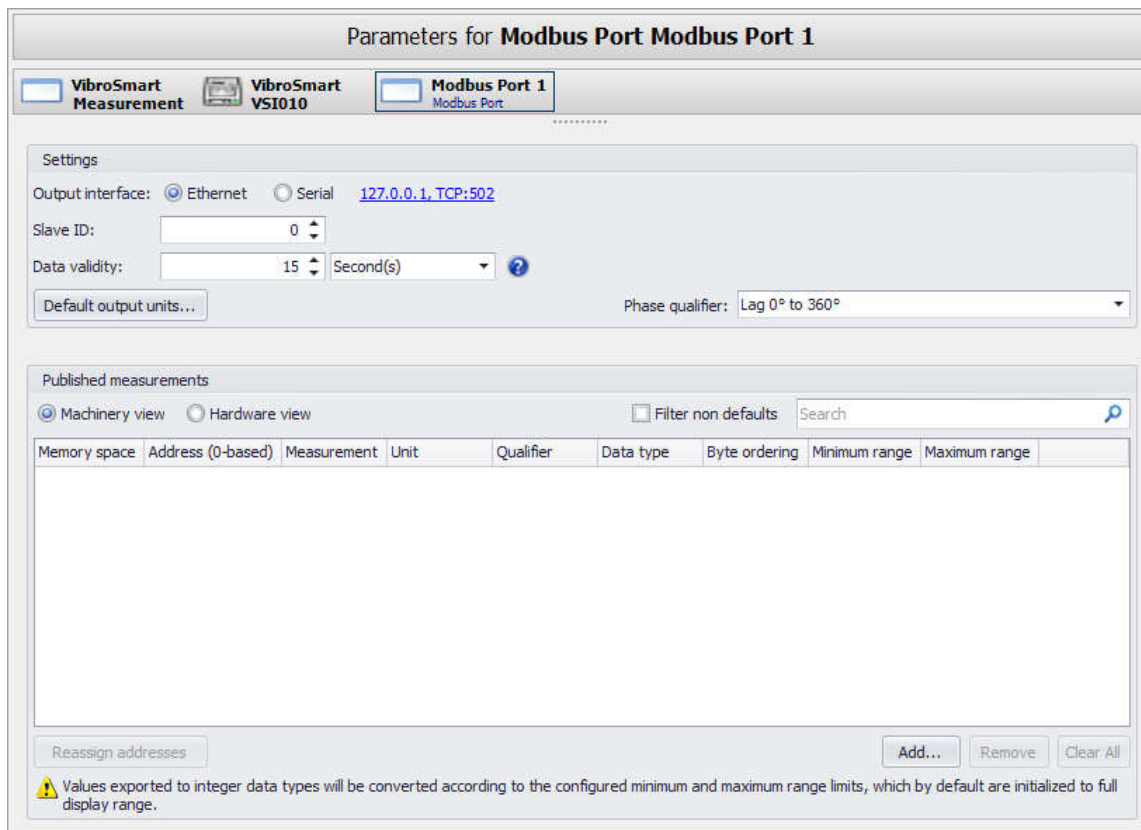
Parent topic: [VibroSmart VSI010 parameters](#)

VibroSmart VSI010 Modbus port

The VibroSmart VSI010 provides up to two Modbus ports that are individually configurable.

A VSI010 module can provide up to two independent Modbus fieldbus ports (serial-based Modbus RTU or Ethernet-based Modbus TCP) at any one time.

To configure a VSI010 module's Modbus port, click the  Modbus port icon in the Hardware View window:



The VSI010 module's Modbus port parameters

Settings

Output interface

To configure the Output Interface, select either Ethernet or Serial.

- If Modbus TCP (Ethernet connection) is being used, select Ethernet and click the link that appears after the Output Interface radio buttons to display the Ethernet interface settings window and configure the settings: for example, any adaptor, the TCP Protocol and port 502.
- If Modbus RTU (serial connection) is being used, select Serial and click the link that appears after the Output Interface radio buttons to display the Serial interface settings window and configure the settings: for example, the COM1 serial port, 9600 baud rate, 8 data bits, even parity, 1 stop bit and ASCII transmission mode.

Note:

Only a single Output Interface can be defined for a VibroSight Modbus Server: Ethernet or Serial. If both types of interface are required, then an additional VibroSight Modbus Server must be used.

Slave ID

Defines the Modbus slave address for the Modbus server running on the VSI010 module.

Data validity

Defines the timeout after which the data from the Modbus server running on the VSI010 module is no longer considered to be valid. If the third-party Modbus client requests data from the Modbus server whose data validity timeout has expired, then the Modbus server will respond with the error exception code "04", that is, "slave device failure".

Default output units

Displays the Default output units window which allows the default units to be used by the data to be shared to be configured.

Phase qualifier

A drop-down list-box that allows the default phase information to be used by the data to be shared to be configured.

Published measurements

Machinery view / Hardware view

These option buttons allow the list of measurements (data) to be shared via the Modbus interface to be displayed in terms of either the machinery being monitored (Machinery view) or the machinery monitoring equipment (Hardware view). This setting affects the information displayed in the Measurement column under Published measurements.

Search box

Use the search box, indicated by the  icon, to selectively filter the measurements displayed under Published measurements.

Memory space

The type of Modbus register used by the measurement data: Coil Discretes, Input Discretes, Holding Registers or Input Registers.

Address (0-based)

The address of the Modbus register used by the measurement data.

Measurement

The name of the measurement and the path to the measurement in terms of either the machinery being monitored (Machinery view) or the machinery monitoring equipment (Hardware view).

Unit

The units used for the measurement.

Qualifier

The qualifier (rectifier) used for the measurement.

Data type

The data type used for the measurement data.

Byte ordering

The byte ordering used for the measurement data.

Minimum range

The minimum value (full display range) configured for the measurement.

Note:

The minimum range can be edited only if the Data Type for the measurement is integer, otherwise the field is not editable and “N/A” is displayed.

Maximum range

The maximum value (full display range) configured for the measurement.

Note:

The maximum range can be edited only if the Data Type for the measurement is integer, otherwise the field is not editable and “N/A” is displayed.

Reassign addresses

Reinitialise the addresses used for the measurements. Modbus addresses will be reinitialised, starting from 0, in the order of the measurements listed under Published measurements.

Note:

Reinitialising the addresses is useful if the order of the measurements has been changed, for example, by dragging and dropping measurements in the list, sorting by double-clicking a particular column or by adding and removing measurements.

Add

Add data (measurements) to the measurements listed under Published measurements.

Remove

Remove the selected data (measurements) from the measurements listed under Published measurements.

Clear All

Remove all data (measurements) from the measurements listed under Published measurements.

Parent topic: [VibroSmart VSI010 fieldbus ports](#)

Related reference

[VibroSight and Modbus byte ordering options](#)

VibroSmart VSI010 PROFIBUS port

The VibroSmart VSI010 provides up to two PROFIBUS ports that are individually configurable.

A VSI010 module can provide up to two independent PROFIBUS DP-V2 fieldbus ports (according to IEC 61158 Type 3) at any one time.

The VibroSmart VSI010 provides up to 24 (TBC) PROFIBUS slots (per PROFIBUS port) that are individually configurable.

Note:

Although each PROFIBUS port can have up to 24 slots and each slot can contain up to 12 bytes, the maximum number of bytes that can be communicated per VSI010 module is limited to a maximum payload of 244 bytes (due to the underlying RS-485 technology).

To configure a VSI010 module's PROFIBUS port, click the  PROFIBUS port icon in the Hardware View window:

The VSI010 module's PROFIBUS port parameters

Settings

Output interface

To configure the Output Interface, click the link that appears after Output Interface to display the PROFIBUS interface settings window and configure the settings: Serial port, Bus address and Baud rate.

The Bus address is the unique address of the PROFIBUS device (that is, the VSI010 PROFIBUS port) on the PROFIBUS network.

Note:

Every device on a PROFIBUS network must have a uniquely assigned address. Theoretically, the PROFIBUS standard supports addressees from 0 to 127. However, a VSI010 should use a PROFIBUS device address in the range 3 to 125 as some addresses have special uses. For example, by convention PROFIBUS masters normally use the addresses from 0 to 2.

Note:

The Bus Address must be configured using VibroSight Configurator as the VSI010 module does not support the Set Slave Address command, sent from a PROFIBUS master.

Note:

If a PROFIBUS device address is changed, the power to the device should be cycled (turned off and then turned on again).

Default output units

Displays the Default output units window which allows the default units to be used by the data to be shared to be configured.

Phase qualifier

A drop-down list-box that allows the default phase information to be used by the data to be shared to be configured.

Published measurements

Machinery view / Hardware view

These option buttons allow the list of measurements (data) to be shared via the PROFIBUS interface to be displayed in terms of either the machinery being monitored (Machinery view) or the machinery monitoring equipment (Hardware view). This setting affects the information displayed in the Measurement column of the slots listed under Published measurements.

Search box

Use the search box, indicated by the  icon, to selectively filter the measurements displayed in the slots listed under Published measurements.

Slot

The name of the PROFIBUS slot, for example "Slot 1".

Enabled

A PROFIBUS slot can be either Enabled or Disabled for a module.

Type

The PROFIBUS slot (data) can either be an Output (readable by a PROFIBUS master), an Input (writable by a PROFIBUS master) or InputOutput (both readable and writable by a PROFIBUS master).

(This is the PROFIBUS I/O data, that is, data which is transferred cyclically for the purposes of processing by the PROFIBUS master.)

Format

The transfer of data for the PROFIBUS slot can either be in Bytes (8 bits) or Words (16 bits). TBC.

Length

The total data that can be contained in a VSI010 PROFIBUS slot is either 1, 2, 4, 8 or 12 bytes.

If all of the reserved data positions are not allocated in the memory map, the unused positions are filled with dummy data (zeros – TBC).

PROFIsafe

A PROFIBUS slot can be selected as PROFIsafe to ensure more reliable communications. It is therefore recommended for use with system critical information.

Note:

PROFIsafe is a safety-related message standard (according to IEC 61784-3-3), designed as an additional software layer on top of the fieldbus (PROFIBUS or PROFINET) layer, that reduces the probability of communication errors by incorporating enhanced fault detection mechanisms:

- Consecutive numbering of messages
- Timeout (watchdog) monitoring
- Authentication (F-Address codename) between sender and receiver
- Data integrity checks (CRC).

Reassign addresses

Reinitialise the addresses used for the measurements in the selected PROFIBUS slot. PROFIBUS addresses will be reinitialised, starting from 0, in the order of the measurements listed in a PROFIBUS slot.

Note:

Reinitialising the addresses is useful if the order of the measurements has been changed, for example, by dragging and dropping measurements in the list, sorting by double-clicking a particular column or by adding and removing measurements.

New Slot

Add a new PROFIBUS slot to the PROFIBUS port.

Add

Add data (measurements) to the selected PROFIBUS slot.

Remove

If a PROFIBUS slot is selected, remove PROFIBUS slot from the PROFIBUS Port.

If a measurement in a PROFIBUS slot is selected, remove the measurement from the PROFIBUS slot.

Clear All

If a PROFIBUS slot is selected, remove all PROFIBUS slots from the PROFIBUS Port.

If a measurement in a PROFIBUS slot is selected, remove all measurements from the PROFIBUS slot.

Parent topic: [VibroSmart VSI010 fieldbus ports](#)

VibroSmart VSI010 logical functions

The VibroSmart VSI010 provides logical functions that allow the alarm and status information from all of the modules in the same measurement block as the VSI010 module to be logically combined to form aggregate bits (flags), which can be used to drive the VSI010's relay outputs.

Note:

For a VSI010 module:

- Up to eight basic logical functions and up to four advanced logical functions are available per module

- Alarm and status information from all of the modules in the same measurement block as the module can be used as inputs to its basic logical functions.

A VSI010 module's basic logical function outputs can be used as inputs to the module's advanced logical functions.

A VSI010 module's basic logical function and advanced logical function outputs can be used as inputs to drive the module's relay outputs.

- [VibroSmart VSI010 logical functions summary](#)
The Logical Functions node in a VibroSmart DMS module's configuration tree (Hardware view) provides a summary view of the basic logical functions and the advanced logical functions configured for the module.
- [VibroSmart VSI010 basic logical function parameters](#)
A VibroSmart DMSs basic logical functions have parameters that must be configured in the module's configuration tree (Hardware view).
- [VibroSmart VSI010 advanced logical function parameters](#)
A VibroSmart DMSs advanced logical functions have parameters that must be configured in the module's configuration tree (Hardware view).

Parent topic: [VibroSmart VSI010 parameters](#)

VibroSmart VSI010 logical functions summary

The Logical Functions node in a VibroSmart DMS module's configuration tree (Hardware view) provides a summary view of the basic logical functions and the advanced logical functions configured for the module.

This summary view includes the Name, Function Id and a Summary of the logical functions.

Right-clicking on the Logical Functions allows new logical functions to be added to the module.

Parent topic: [VibroSmart VSI010 logical functions](#)

VibroSmart VSI010 basic logical function parameters

A VibroSmart DMSs basic logical functions have parameters that must be configured in the module's configuration tree (Hardware view).

The basic logical function parameters define the functionality required from a basic logical function.

To configure the parameters for a basic logical function, click the  basic logical function icon in the Hardware view window:

Parameters for **Basic Logical Function Basic Logical Function 1**

☐ VibroSmart Measurement
 ☒ VibroSmart VSI010
 ☒ Basic Logical Function 1

Name: Basic Logical Function 1
 State: Enabled

Function Id: 1
 Type: Basic Logical Function

Function

☐ AND
☒ OR
☐ Voting - Number: 1

Inputs

Type	Hierarchy	Name	Inverted	State
Alarm Input	VibroSmart Measurement Block 1 / VibroSmart VSV300 Module 1 / Relative Shaft Vibration ...	1D Fixed Limit (Position) - Danger +	☐	Disabled
Alarm Input	VibroSmart Measurement Block 1 / VibroSmart VSV300 Module 1 / Relative Shaft Vibration ...	1D Fixed Limit (Position) - Alert +	☐	Disabled
Alarm Input	VibroSmart Measurement Block 1 / VibroSmart VSV300 Module 1 / Relative Shaft Vibration ...	1D Fixed Limit (Position) - Alert -	☐	Disabled
Alarm Input	VibroSmart Measurement Block 1 / VibroSmart VSV300 Module 1 / Relative Shaft Vibration ...	1D Fixed Limit (Position) - Danger -	☐	Disabled

Add Remove

Description:

Basic logical function parameters for a VSI010 module

Name

The name of the basic logical function, for example "Basic Logical Function 1".

State

The basic logical function can be either Enabled or Disabled.

Function Id

An internal identifier for the basic logical function, used by VibroSight.

For VSI010 modules, this Function Id must be in the range 1 to 8 (that is, there can be up to eight basic logical functions per module).

Type

A logical function can either be a Basic Logical Function or an Advanced Logical Function. Not available (greyed out) for configuration.

Under Function, one of the following option buttons should be selected:

AND

The inputs to the basic logical function will be logically ANDed to generate the output bit.

OR

The inputs to the basic logical function will be logically ORed to generate the output bit.

Voting - Number

The inputs to the basic logical function will undergo a majority voting function where the specified Number of inputs must be true in order to have an output bit that is true.

Under Inputs, the following buttons should be used to select the inputs for the basic logical function:

Add

The Add button is used to add the required alarm and status information as inputs (bits) to the basic logical function.

Remove

The Remove button is used to remove unwanted alarm and status information inputs (bits) from the basic logical function.

The Description text box can be used to include an optional description of the basic logical function.

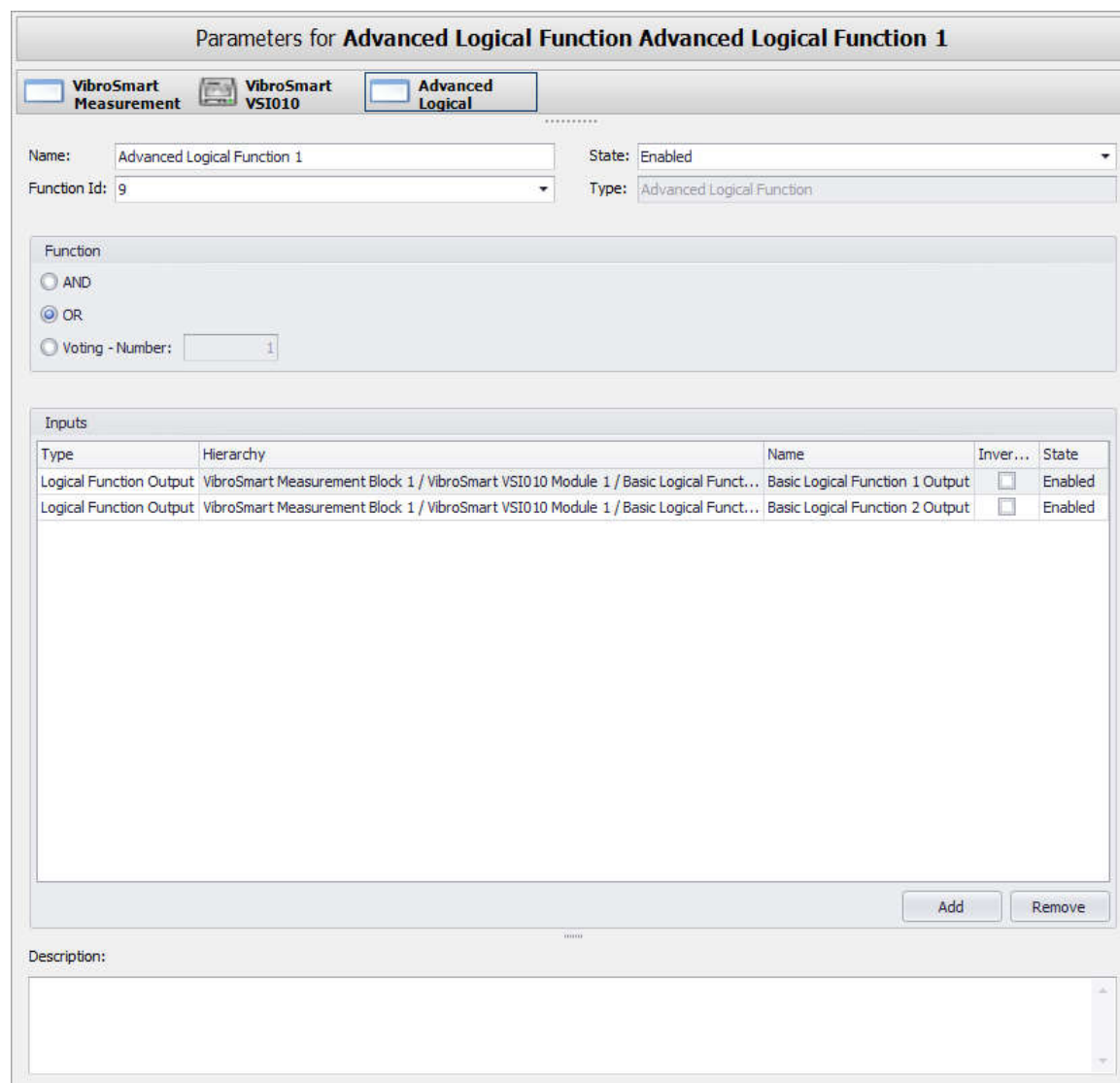
Parent topic: [VibroSmart VSI010 logical functions](#)

VibroSmart VSI010 advanced logical function parameters

A VibroSmart DMSs advanced logical functions have parameters that must be configured in the module's configuration tree (Hardware view).

The advanced logical function parameters define the functionality required from an advanced logical function.

To configure the parameters for an advanced logical function, click the  advanced logical function icon in the Hardware view window:



Parameters for **Advanced Logical Function Advanced Logical Function 1**

VibroSmart Measurement **VibroSmart VSI010** **Advanced Logical**

Name: State:

Function Id: Type:

Function:

☐ AND

☒ OR

☐ Voting - Number:

Inputs

Type	Hierarchy	Name	Inver...	State
Logical Function Output	VibroSmart Measurement Block 1 / VibroSmart VSI010 Module 1 / Basic Logical Funct...	Basic Logical Function 1 Output	☐	Enabled
Logical Function Output	VibroSmart Measurement Block 1 / VibroSmart VSI010 Module 1 / Basic Logical Funct...	Basic Logical Function 2 Output	☐	Enabled

Add Remove

Description:

Advanced logical function parameters for a VSI010 module

Name

The name of the advanced logical function, for example "Advanced Logical Function 1".

State

The advanced logical function can be either Enabled or Disabled.

Function Id

An internal identifier for the advanced logical function, used by VibroSight.

For VSI010 modules, this Function Id must be in the range 9 to 12 (that is, there can be up to four advanced logical functions per module).

Type

A logical function can either be a Basic Logical Function or an Advanced Logical Function. Not available (greyed out) for configuration.

Under Function, one of the following option buttons should be selected:

AND

The inputs to the advanced logical function will be logically ANDed to generate the output bit.

OR

The inputs to the advanced logical function will be logically ORed to generate the output bit.

Voting - Number

The inputs to the advanced logical function will undergo a majority voting function where the specified Number of inputs must be true in order to have an output bit that is true.

Under Inputs, the following buttons should be used to select the inputs for the advanced logical function:

Add

The Add button is used to add the required alarm and status information as inputs (bits) to the advanced logical function.

Remove

The Remove button is used to remove unwanted alarm and status information inputs (bits) from the advanced logical function.

The Description text box can be used to include an optional description of the advanced logical function.

Parent topic: [VibroSmart VSI010 logical functions](#)

VibroSmart VSI010 outputs

The VibroSmart VSI010 provides relay outputs that can be driven using the logical functions from modules in the same measurement block.

Relay outputs

For a VSI010 module, there are two single-pole double-throw (SPDT) relays available per module.

Each relay can be configured as either Normally De-energized (NDE) or Normally Energized (NE), and as Latched (or not).

- [VibroSmart VSI010 relay output parameters](#)

A VibroSmart DMSs relay output has parameters that must be configured in the module's configuration tree (Hardware view).

Parent topic: [VibroSmart VSI010 parameters](#)

VibroSmart VSI010 relay output parameters

A VibroSmart DMSs relay output has parameters that must be configured in the module's configuration tree (Hardware view).

To configure the parameters for a relay output, click the  relay icon in the Hardware view window:

Relay output parameters for a VSI010 module

Name

The name of the relay output, for example "Relay 1".

State

The relay output can be either Enabled or Disabled.

Relay Id

An internal identifier for the relay output, used by VibroSight.

For most VibroSmart DMS modules, the Relay Id must be in the range 1 to 2 (that is, there are typically two relays per module).

Relay Input

Opens the Relay Input dialog box which is used to select the local alarm or status information or logical function output to use as the input to drive the relay.

Normally De-energized (NDE) / Normally Energized (NE)

The Normally De-energized (NDE) and the Normally Energized (NE) option buttons are mutually exclusive controls that are used to configure the relationship between the control input to the relay's coil and the operation (tripping) of the relay.

Select Normally De-energized (NDE) to configure the relay as energised to trip so that:

- A low (logical 0') on the relay's input leaves the relay de-energised, indicating a normal condition.
- A high (logical 1') on the relay's input energises the relay, indicating an alarm condition.

Select Normally Energized (NE) to configure the relay as de-energised to trip so that:

- A low (logical 0') on the relay's input de-energises the relay, indicating an alarm condition.
- A high (logical 1') on the relay's input leaves the relay energised, indicating a normal condition.

Latched

The Latched check box is used to configure the permanence of the tripping (operation) of the relay.

Select the Latched check box to configure the relay so that it will remain "tripped" (that is, in the state caused by the alarm condition) even if there is a change to the operating conditions that caused the alarm. A latched relay output can only be cleared manually, using either the external alarm reset input signal (DSI AR) or a software command from VibroSight.

Clear the Latched check box to configure the relay so that it will remain "tripped" (that is, in the state caused by the alarm condition) for the duration of the operating conditions that cause the alarm only.

The Description text box can be used to include an optional description of the relay output function.

Parent topic: [VibroSmart VSI010 outputs](#)

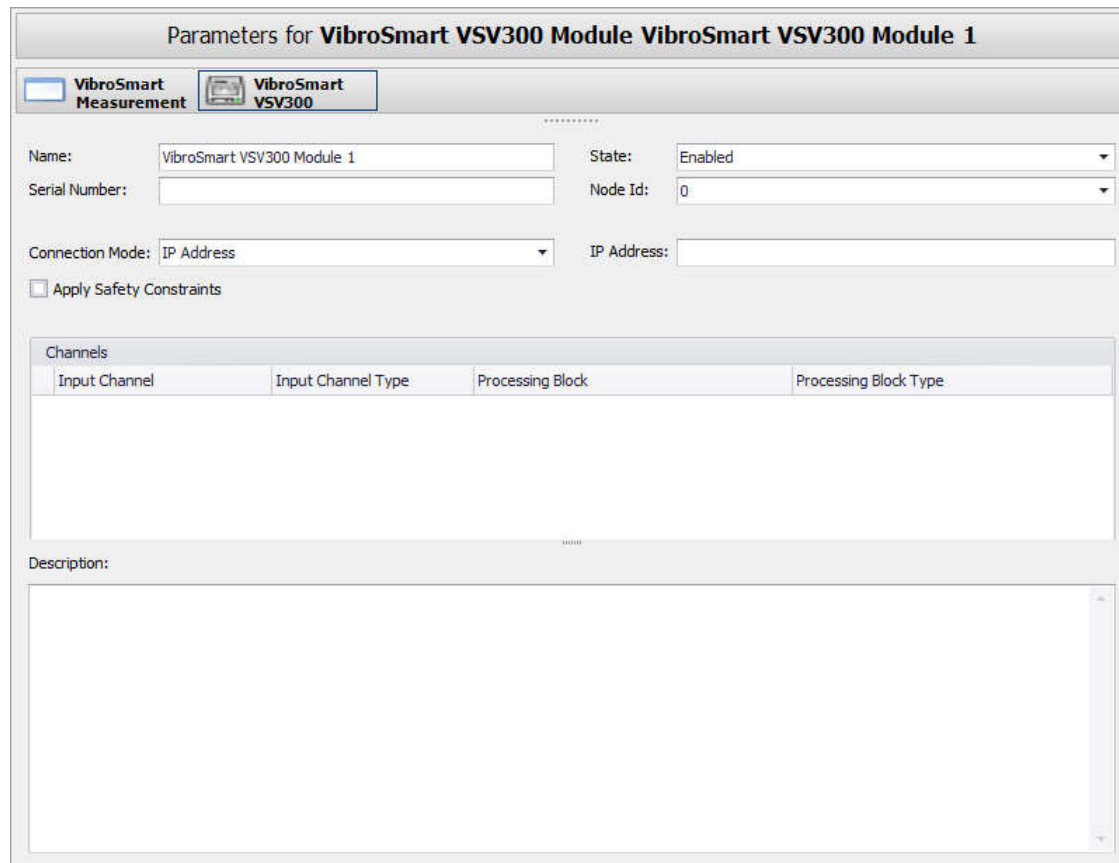
Related tasks

[Configuring a VibroSmart DMS relay output](#)

VibroSmart VSV30x parameters

VibroSmart VSV30x modules must be added to a measurement block in order to be added to a configuration.

To configure a VibroSmart VSV30x's parameters, click the  module icon in the Hardware View window:



VSV30x module parameters

Name

The name of the module, for example "VibroSmart VSV30x Module 1".

Serial Number

The serial number (xxxxxxxx) of the module / terminal base to be used in the measurement block. This is a unique number assigned by Meggitt Sensing Systems during manufacturing.

This box must be completed if Automatic Discovery is being used as the Connection Mode.

Note: The serial number of a module can be found using either VibroSight System Manager, or for a VibroSmart DMS module such as a VSI010 or VSV30x by inspecting the label (sticker) on the terminal base that the module is clipped into, or for a VibroSmart DMS device such as a VSN010 by inspecting the label on the device itself.

Note:

As an IP address can be easily changed, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

State

A module can be either Enabled or Disabled in a measurement block.

Node Id

The unique identification number (xx) for the module in a measurement block.

The Node Id is required in multi-module systems in order to uniquely identify the sub-parameters (such as modules, channels, processing blocks and extracted data) as belonging to a particular module. It also allocates the time slot to be used by the module for real-time communications within the measurement block.

Connection Mode

The Connection Mode is used to select how VibroSight will discover and identify the VibroSmart DMS module.

If IP Address is selected, the DMS module is identified by an IP address that must be entered manually in the IP address box (in which case, the Serial Number is not required).

If Automatic Discovery is selected, the module will be identified by its Serial Number.

IP Address

The IP address of the VibroSmart DMS module.

If IP Address is selected for the Connection Mode, then the IP address for the VibroSmart DMS module is entered here. The IP address can be entered in one of two ways:

- Using the module's name (derived from the serial number) suffixed with .local. For example, vm-xtran-AH33103.local
- Using the module's IP address directly (in dot-decimal notation).

If Automatic Discovery is selected for the Connection Mode, then VibroSight will automatically identify the VibroSmart DMS module from its Serial Number and update this box.

Apply Safety Constraints

If Apply Safety Constraints is selected, VibroSight Configurator's Consistency Check will be more rigorous. More specifically, in order to "pass" the consistency check:

- All alarms enabled in the configuration must be used to drive a relay.
- All relays in the configuration must be configured as Normally Energized (NE) and as Latched.

Channels

A summary view of all of the channels and processing blocks configured for this module.

Double-click on an entry (row) to modify a channels or a processing block's parameters.

To add a new channel or processing block, right-click on the  Input Channels or  Processing Blocks icon (for a DMS module) in the Hardware View and choose a new type of input channel or a new type of processing block.

Description

An optional description of the VibroSmart DMS module.

- [VibroSmart VSV30x input channels](#)
The VibroSmart VSV30x has two dynamic input channels and one auxiliary input channel, each of which can be individually configured.
- [VibroSmart VSV30x processing blocks](#)
The VibroSmart VSV30x provides a number of standard processing blocks that assemble and implement different underlying signal processing functions, depending on the phenomenon being measured.
- [VibroSmart VSV30x logical functions](#)
The VibroSmart VSV30x provides logical functions that allow alarm and status information from the VSV30x module to be logically combined in order to form aggregate bits (flags), which can be used to drive the VSV30x's relay outputs.
- [VibroSmart VSV30x outputs](#)
The VibroSmart VSV30x provides relay outputs and analog outputs that can be driven using information and signals from the module.

Parent topic: [Configuration parameters](#)

Related tasks

[Identifying a VibroSmart module in a DMS](#)

VibroSmart VSV30x input channels

The VibroSmart VSV30x has two dynamic input channels and one auxiliary input channel, each of which can be individually configured.

To see the input channels that have been configured for a VSV30x module, click the  Input Channels icon in the Hardware View window.

Dynamic input channels

The VSV30x module has two dynamic input channels that are fully software configurable. The dynamic input channels are suitable for measuring signals such as:

- Vibration – derived from acceleration, velocity or displacement

For example, using CA xxx and CE xxx accelerometers from Meggitt Sensing Systems.

- Pressure

For example, using CP xxx dynamic pressure sensors from Meggitt Sensing Systems.

Auxiliary input channels

The VSV30x module has one auxiliary input channel that is fully software configurable as either a tachometer input channel or a DC input channel. According, this input is suitable for measuring the following signals:

- Tachometer (speed) and phase reference

For example, using T xxx proximity probes from Meggitt Sensing Systems.

- DC inputs (DC to 10 Hz)

For example, DC gaps or process control inputs such as temperature or flow rate.

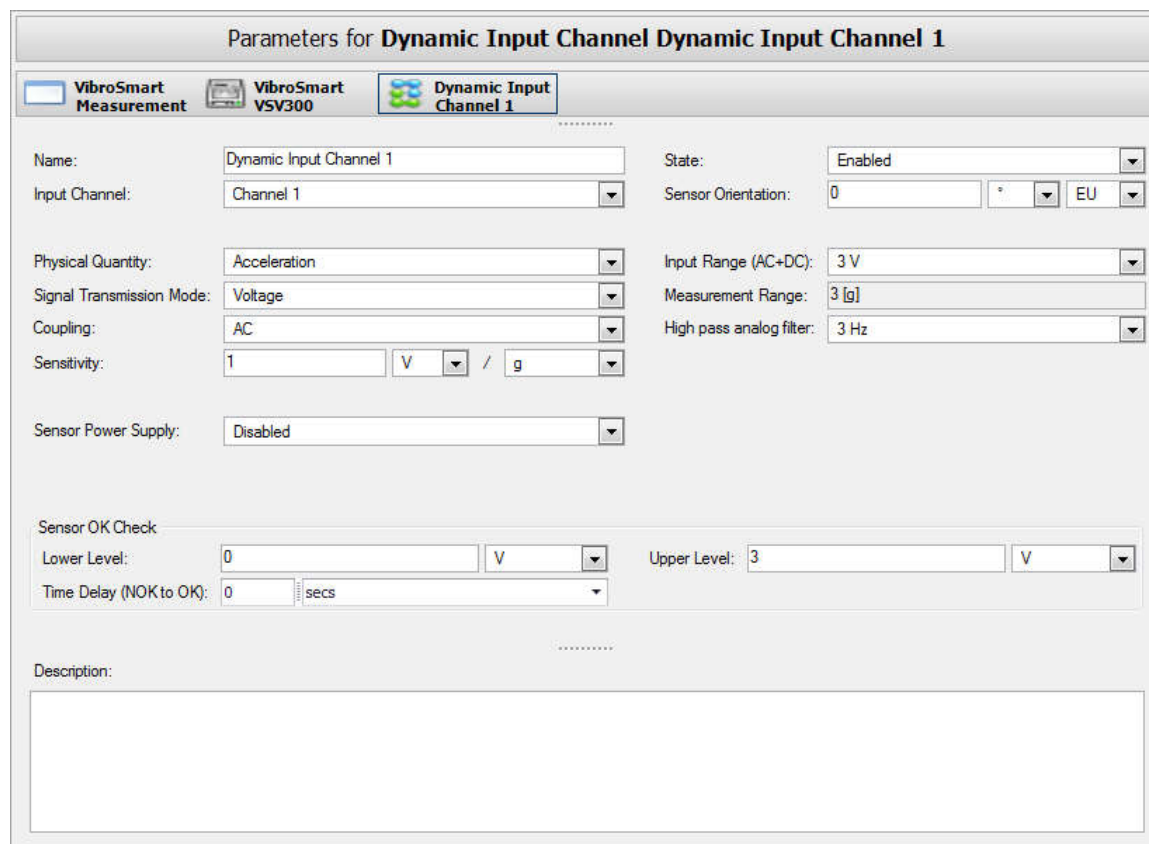
- [VibroSmart VSV30x dynamic input channel parameters](#)
The VibroSmart VSV30x has two dynamic input channels which can be individually configured.
- [VibroSmart VSV30x tachometer input channel parameters](#)
The VibroSmart VSV30x has one auxiliary input channel that can be configured as either a tachometer input channel or a DC input channel.
- [VibroSmart VSV30x DC input channel parameters](#)
The VibroSmart VSV30x has one auxiliary input channel that can be configured as either a tachometer input channel or a DC input channel.

Parent topic: [VibroSmart VSV30x parameters](#)

VibroSmart VSV30x dynamic input channel parameters

The VibroSmart VSV30x has two dynamic input channels which can be individually configured.

To configure a VSV30x module's dynamic input channel parameters, click the  dynamic input channel icon in the Hardware View window:



Parameters for **Dynamic Input Channel Dynamic Input Channel 1**

VibroSmart Measurement **VibroSmart VSV300** **Dynamic Input Channel 1**

Name: State:

Input Channel: Sensor Orientation: °

Physical Quantity: Input Range (AC+DC):

Signal Transmission Mode: Measurement Range:

Coupling: High pass analog filter:

Sensitivity: V / g

Sensor Power Supply:

Sensor OK Check

Lower Level: V Upper Level: V

Time Delay (NOK to OK): secs

Description:

The VSV30x module's dynamic input channel parameters

Name

The name of the dynamic input channel, for example "Dynamic Input Channel 1".

State

A dynamic input channel can be either Enabled or Disabled for a module.

Input Channel

Select the physical input channel number on the VibroSmart DMS module with which this channel is associated.

Sensor Orientation

Specifies the physical mounting orientation of the speed sensor in degrees (°) or radians with respect to a fixed reference point on the machine. The reference point and data entry of the orientation depends on the convention used: EU, Math or US.

Physical quantity

The Physical quantity that the channel is being used to measure. The value selected here is used to automatically populate (and limit) other fields in VibroSight Configurator related to this channel. For example, if Acceleration is selected as the Physical quantity, the units available in the Sensitivity field will be related to acceleration.

Input Range (AC/DC)

Select the input range of the dynamic input channel according to the magnitude of the electrical signal expected. The units available here depend on the Signal Transmission Mode selected.

Signal Transmission Mode

Selects whether the electrical signal at the input to the channel is transmitted as a voltage or a current signal.

Measurement Range

The Measurement Range is calculated by VibroSight using the data entered in the Sensitivity and Input Range (AC/DC) fields. It cannot be edited by the user.

Coupling

The coupling of the analog high-pass filter at the input of a dynamic input channel can be configured as either:

- AC – AC couples the electrical signal to the dynamic input channel.

AC coupling allows only the AC component of the signal through to the input channel (the DC component is removed).

Selecting AC activates the analog high-pass filter in the signal path. The High-pass analog filter parameter is used to configure the cutoff frequency (–3 dB) of this filter.

- AC/DC – DC couples the electrical signal to the dynamic input channel.

DC coupling allows both the AC component and the DC component of the signal through to the input channel.

Selecting AC/DC bypasses the analog high-pass filter in the signal path. The High-pass analog filter parameter is disabled.

High-pass analog filter

The cutoff frequency of the analog high-pass filter at the input of a dynamic input channel can be configured as follows:

- When Coupling: AC is selected, the High-pass analog filter can be set to either 0.1, 1 or 3 Hz in order to set the cutoff frequency (–3 dB) of the filter depending on the machinery monitoring application. The default value is 3 Hz.
- When Coupling: DC is selected, the High-pass analog filter is automatically set to Disabled.

Note:

If Coupling: AC is selected, all processing blocks except for Narrow Band Vibration can be configured for the dynamic input channel.

If Coupling: AC/DC is selected, the only the Narrow Band Vibration processing block can be configured for the dynamic input channel.

Sensitivity

The sensitivity of the signal. Sensitivity is the ratio of the response or change induced in the output to a stimulus or change in the input signal. The units available here depend on the value selected for Physical quantity.

Sensor Power Supply

The Sensor Power Supply can be set to a voltage (–24 V or +24 V) or current (6 mA) in order to enable a power supply (VibroSmart DMS module output) for use by a sensor attached to this input channel. It is disabled by default.

Sensor On/Off Check

The Lower Level and the Upper Level should be set to levels (voltage or current depending on the Signal Transmission Mode) that allow typical faults due to damaged or faulty cabling (or sensors) to be detected.

The Time Delay (NO to OFF) requires the sensor reading to be within the lower and upper levels for the specified period of time, following a fault, before registering the sensor as OFF.

Description

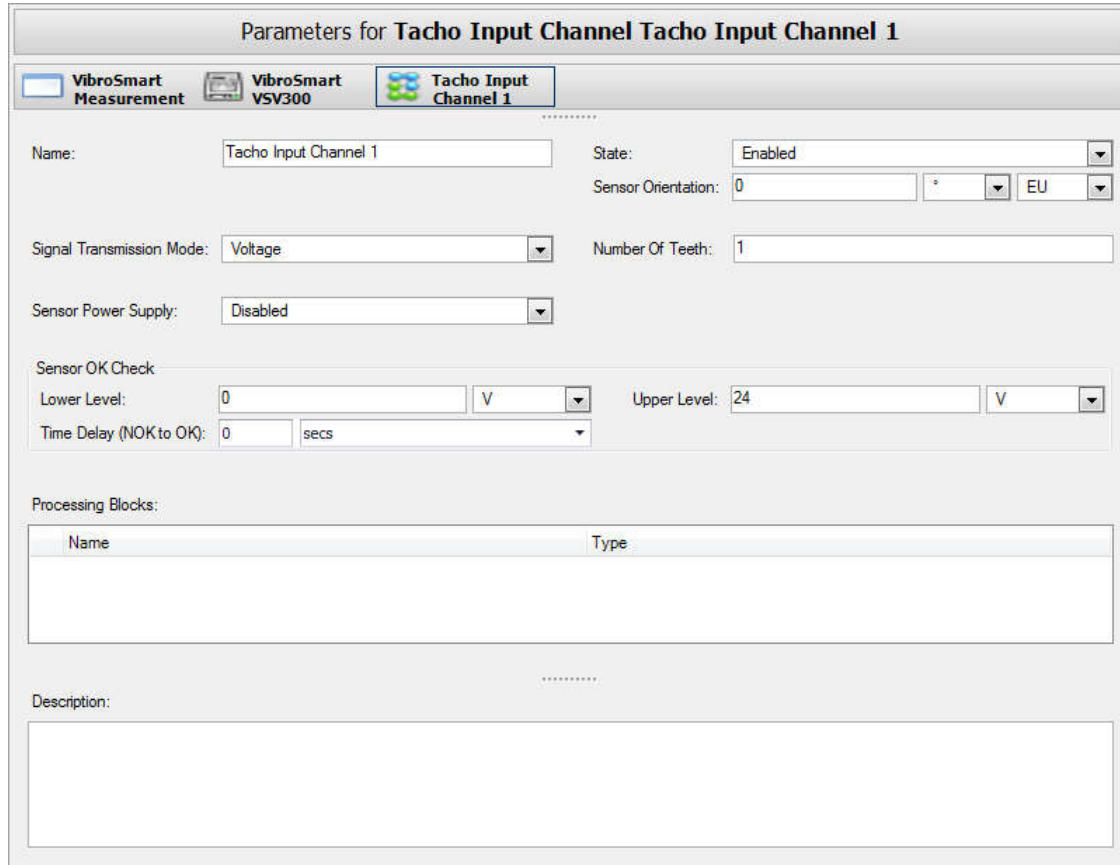
An optional description of the VibroSmart DMS module.

Parent topic: [VibroSmart VSV30x input channels](#)

VibroSmart VSV30x tacho input channel parameters

The VibroSmart VSV30x has one auxiliary input channel that can be configured as either a tacho input channel or a DC input channel.

When a VSV30x module's auxiliary input channel is added as a tacho input channel, to configure the channel parameters, click the  tacho input channel icon in the Hardware View window:



Parameters for **Tacho Input Channel Tacho Input Channel 1**

VibroSmart Measurement **VibroSmart VSV300** **Tacho Input Channel 1**

Name: Tacho Input Channel 1 State: Enabled

Sensor Orientation: 0 * EU

Signal Transmission Mode: Voltage Number Of Teeth: 1

Sensor Power Supply: Disabled

Sensor OK Check

Lower Level: 0 V Upper Level: 24 V

Time Delay (NOK to OK): 0 secs

Processing Blocks:

Name	Type

Description:

VSV30x module tacho input (auxiliary) channel parameters

Name

The name of the tacho input channel, for example "Tacho Input Channel 1".

State

A dynamic input channel can be either Enabled or Disabled for a module.

Sensor Orientation

Specifies the physical mounting orientation of the speed sensor in degrees (°) or radians with respect to a fixed reference point on the machine. The reference point and data entry of the orientation depends on the convention used: EU, Math or US.

Signal Transmission Mode

Selects whether the electrical signal at the input to the channel is transmitted as a voltage or a current signal.

Number of Teeth

The Number of Teeth should be set to the number of teeth counted by the tacho sensor (per revolution).

Sensor Power Supply

The Sensor Power Supply can be set to a voltage (24 V or 24 V) or current (6 mA) in order to enable a power supply (VibroSmart DMS module output) for use by a sensor attached to this input channel. It is disabled by default.

Sensor OK Check

The Lower Level and the Upper Level should be set to levels (voltage or current depending on the Signal Transmission Mode) that allow typical faults due to damaged or faulty cabling (or sensors) to be detected.

The Time Delay (NO to O) requires the sensor reading to be within the lower and upper levels for the specified period of time, following a fault, before registering the sensor as O .

Attached Processing Blocks

A list of all processing blocks to which this channel is attached. Double-click an entry in the list to view the processing block's parameters.

Description

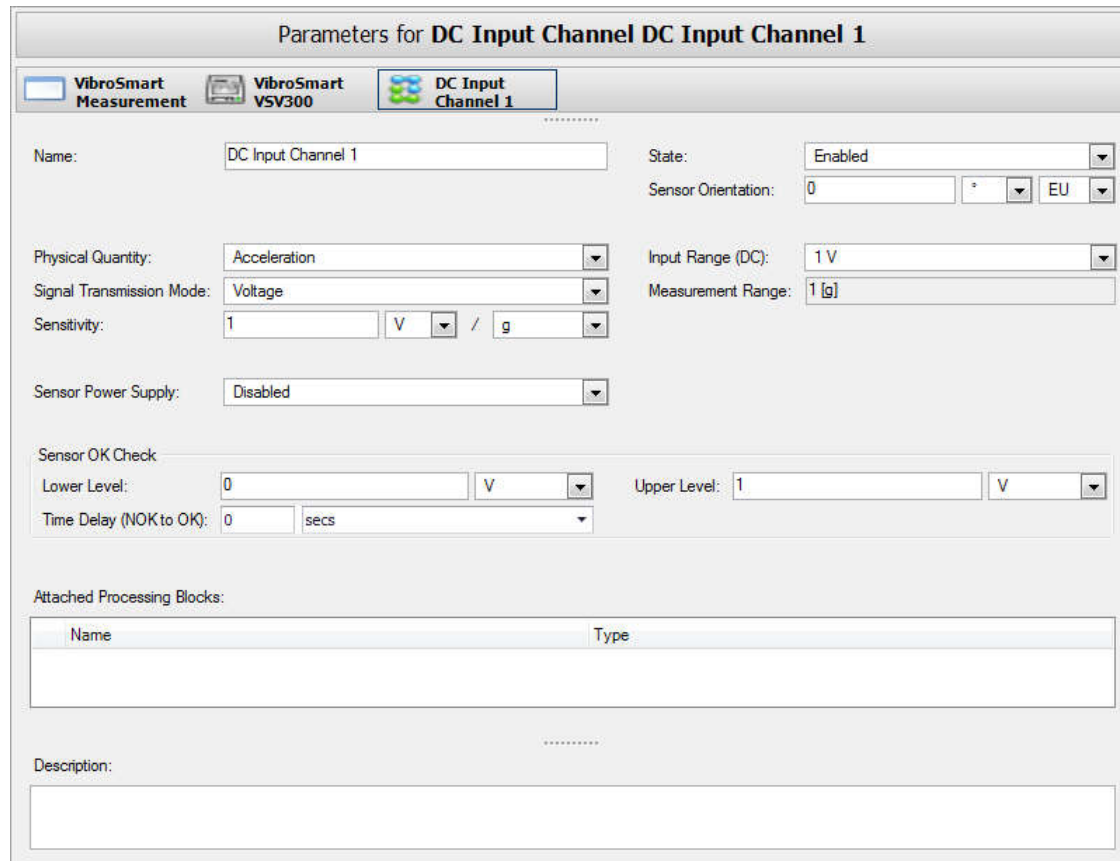
An optional description of the VibroSmart DMS module.

Parent topic: [VibroSmart VSV30x input channels](#)

VibroSmart VSV30x DC input channel parameters

The VibroSmart VSV30x has one auxiliary input channel that can be configured as either a tacho input channel or a DC input channel.

When a VSV30x module's auxiliary input channel is added as a DC input channel, to configure the channel parameters, click the  DC input channel icon in the Hardware View window:



The screenshot shows the 'Parameters for DC Input Channel DC Input Channel 1' window. It has three tabs: 'VibroSmart Measurement', 'VibroSmart VSV300', and 'DC Input Channel 1'. The 'DC Input Channel 1' tab is active. The fields are as follows:

- Name:** DC Input Channel 1
- State:** Enabled
- Sensor Orientation:** 0°, EU
- Physical Quantity:** Acceleration
- Signal Transmission Mode:** Voltage
- Sensitivity:** 1 V / g
- Input Range (DC):** 1 V
- Measurement Range:** 1 [g]
- Sensor Power Supply:** Disabled
- Sensor OK Check:**
 - Lower Level:** 0 V
 - Upper Level:** 1 V
 - Time Delay (NOK to OK):** 0 secs
- Attached Processing Blocks:** (Empty table with columns Name and Type)
- Description:** (Empty text area)

The VSV30x module's DC input (auxiliary) channel parameters

Name

The name of the DC input channel, for example "DC Input Channel 1".

State

A dynamic input channel can be either Enabled or Disabled for a module.

Sensor Orientation

Specifies the physical mounting orientation of the speed sensor in degrees (°) or radians with respect to a fixed reference point on the machine. The reference point and data entry of the orientation depends on the convention used: EU, Math or US.

Physical quantity

The Physical quantity that the channel is being used to measure. The value selected here is used to automatically populate (and limit) other fields in VibroSight Configurator related to this channel. For example, if Distance is selected as the Physical quantity, the units available in the Sensitivity field will be related to length (distance).

Input Range (AC DC)

Select the input range of the dynamic input channel according to the magnitude of the electrical signal expected. The units available here depend on the Signal Transmission Mode selected.

Signal Transmission Mode

Selects whether the electrical signal at the input to the channel is transmitted as a voltage or a current signal.

Measurement Range

The Measurement Range is calculated by VibroSight using the data entered in the Sensitivity and Input Range (AC DC) fields. It cannot be edited by the user.

Sensitivity

The sensitivity of the signal. Sensitivity is the ratio of the response or change induced in the output to a stimulus or change in the input signal. The units available here depend on the value selected for Physical quantity.

Sensor Power Supply

The Sensor Power Supply can be set to a voltage (± 24 V or ± 24 V) or current (6 mA) in order to enable a power supply (VibroSmart DMS module output) for use by a sensor attached to this input channel. It is disabled by default.

Sensor O₂ Check

The Lower Level and the Upper Level should be set to levels (voltage or current depending on the Signal Transmission Mode) that allow typical faults due to damaged or faulty cabling (or sensors) to be detected.

The Time Delay (NO₂ to O₂) requires the sensor reading to be within the lower and upper levels for the specified period of time, following a fault, before registering the sensor as O₂.

Attached Processing Blocks

A list of all processing blocks to which this channel is attached. Double-click an entry in the list to view the processing block's parameters.

Description

An optional description of the VibroSmart DMS module.

Parent topic: [VibroSmart VSV30x input channels](#)

VibroSmart VSV30x processing blocks

The VibroSmart VSV30x provides a number of standard processing blocks that assemble and implement different underlying signal processing functions, depending on the phenomenon being measured.

Vibration

A VSV30x module provides the following processing blocks for monitoring absolute and relative vibration input signals:

- Asynchronous absolute bearing vibration processing block

For the measurement of absolute machine vibration (the movement of a machine part) with respect to free space. Typically, with seismic transducers mounted on a machine bearing housing or another mechanical structure.

- Shaft relative vibration processing block

For the measurement of relative machine vibration (the movement of a machine part) with respect to another machine part. Typically, with non-contact proximity probes mounted on a non-vibrating surface, such as a machine housing near a bearing, in order to measure the distance to a moving (vibrating) object, such as a machine shaft.

- Narrow band vibration processing block

Narrow-band vibration is a tracking technique (known as order tracking) that allows specific machine vibrations to be isolated and followed, for example, as a function of a particular shaft speed. It is equally applicable to absolute vibration monitoring and relative vibration monitoring.

- Dual shaft relative processing block

The dual-channel shaft relative processing block uses two (single-channel) shaft relative vibration processing blocks as inputs in order to provide more advanced processing functions and outputs, including orbits and $S_{\max}$ ($S_{\max}$ output calculated according to ISO 7919-1 method C and/or X-Ymax discriminator output calculated according to ISO 7919-1 method B). Typically, with non-contact proximity probes (X and Y) mounted on a non-vibrating surface at approximately 90° to each other.

Pressure

A VSV30x module provides the following processing block for monitoring pressure input signals:

- Broad band pulsation processing block

For the measurement of dynamic pressure pulsations. Typically, with dynamic pressure sensors mounted in the combustor (combustion chamber) of a gas turbine.

Tachometer

A VSV30x module provides the following processing block for monitoring speed and phase reference input signals:

- Tacho processing block

For the measurement of tachometer (speed) and phase reference information. Typically, with a non-contact proximity probe mounted on a timing mark or wheel.

Position

A VSV30x module provides the following processing block for monitoring position and other quasi-static DC input signals:

- Position processing block

For the measurement of DC gap and other process variables. The input must be slowly changing (DC to 10 Hz).

- [VibroSmart VSV30x asynchronous absolute bearing vibration processing block \(main path\)](#)
The VibroSmart VSV30x's asynchronous absolute bearing vibration processing block has overall parameters that must be configured in addition to the separate main path and secondary path parameters that are configured on their individual tabs.
- [VibroSmart VSV30x shaft relative vibration processing block \(main path\)](#)
The VibroSmart VSV30x's shaft relative vibration processing block has overall parameters that must be configured in addition to the separate main path and secondary path parameters that are configured on their individual tabs and any required position extraction parameters.
- [VibroSmart VSV30x narrow band vibration processing block](#)
The VibroSmart VSV30x's narrow band vibration processing block has overall and measurement specific parameters that must be configured.
- [VibroSmart VSV30x tacho processing block](#)
The VibroSmart VSV30x's tacho (speed) processing block has overall parameters that must be configured in addition to the required speed extraction parameters.
- [VibroSmart VSV30x position processing block](#)
The VibroSmart VSV30x's position processing block has overall parameters that must be configured in addition to the required position extraction parameters.
- [VibroSmart VSV30x broad band pulsation processing block \(main path\)](#)
The VibroSmart VSV30x's broad band pulsation processing block has overall parameters that must be configured in addition to the separate main path and secondary path parameters that are configured on their individual tabs.
- [VibroSmart VSV30x dual shaft relative processing block](#)
The VibroSmart VSV30x's dual shaft relative processing block has overall parameters that must be configured in addition to any required orbit and Smax data entities.

Parent topic: [VibroSmart VSV30x parameters](#)

VibroSmart VSV30x asynchronous absolute bearing vibration processing block (main path)

The VibroSmart VSV30x's asynchronous absolute bearing vibration processing block has overall parameters that must be configured in addition to the separate main path and secondary path parameters that are configured on their individual tabs.

To configure the overall and main path parameters for a VSV30x module's asynchronous absolute bearing vibration processing block, click the  Asynchronous Absolute Bearing Vibration Processing Block icon in the Hardware View window to select it, then select the Main Path title tab:

Parameters for **Asynchronous Absolute Bearing Vibration Processing Block Asynchronous Absolute Bearing Vibration Processing Block 1**

☐ VibroSmart Measurement
 ☒ VibroSmart VSV300
 ☒ Asynchronous Absolute

Name: State:

Input Channel:

Tacho Input Channel:

☒ Main Path
 ☐ Secondary Path

High Pass Filter

State:

Cut Off Frequency:

Transition Bandwidth Slope:

Frequency Attenuation:

Low Pass Filter

State:

Cut Off Frequency:

Transition Bandwidth Slope:

Frequency Attenuation:

☐ ISO-2954 Compatible

Description:

VSV30x module asynchronous absolute bearing vibration processing block overall and main path parameters

Name

The name of the asynchronous absolute bearing vibration processing block, for example "Asynchronous Absolute Bearing Vibration Processing Block 1".

State

A processing block can be either Enabled or Disabled for a module.

Input Channel

Select the physical dynamic input channel number on the VibroSmart DMS module with which this processing block is associated.

Tacho Input Channel

Select the physical tacho input channel on the VibroSmart DMS module with which this processing block is associated.

The Tacho Input Channel is only required for asynchronous absolute bearing vibration monitoring if order-tracked frequency domain extractions are required (for example, Harmonics, NOT 1X or Sub-Harmonics).

High Pass Filter

State

The high-pass filter section of the configurable band-pass filter can be either Enabled or Disabled.

Cut Off Frequency

The cutoff frequency of the high-pass filter can be specified from 3 Hz without integration, or from 5 Hz if integration will be used on the input signal.

Transition Bandwidth Slope

The slope of the high-pass filter can be specified from 24 dB/Oct to 60 dB/Oct, in steps of 6 dB.

Frequency Attenuation

The attenuation at the cutoff frequency can be specified as either 0.1 dB or 3 dB.

Low Pass Filter

State

The low-pass filter section of the of the configurable band-pass filter can be either Enabled or Disabled.

Cut Off Frequency

The cutoff frequency of the low-pass filter can be specified up to 19 kHz.

Transition Bandwidth Slope

The slope of the high-pass filter can be specified from 24 dB/Oct to 60 dB/Oct, in steps of 6 dB.

Frequency Attenuation

The attenuation at the cutoff frequency can be specified as either 0.1 dB or 3 dB.

ISO-2954 Compatible

This check box selects a fixed filter, that has been optimised in accordance with the ISO 2954 standard, in place of the configurable band pass filter. If selected, the configurable band-pass filter fields are overwritten with ISO 2954 values and become unavailable (dimmed).

Note: ISO 2954:1975. Mechanical vibration of rotating and reciprocating machinery – requirements for instruments for measuring vibration severity

This check box allows the use of this often used filter without having to manually enter the filter characteristics.

Description

An optional description of the asynchronous absolute bearing vibration processing block.

Note:

- Up to two successive integrators can be used after the configurable band-pass filter in the main path. For example, to convert an accelerometer's acceleration output to velocity (one integration) or displacement (two integrations).
- The low-pass to high-pass filter ratio must be 1000 if no or one integration is used.
- The low-pass to high-pass filter ratio must be 100 if two integrations are used.
- **[VibroSmart VSV30x asynchronous absolute bearing vibration processing block \(secondary path\)](#)**
The VibroSmart VSV30x's asynchronous absolute bearing vibration processing block also has secondary path parameters that are configured on their individual tab.

Parent topic: [VibroSmart VSV30x processing blocks](#)

VibroSmart VSV30x asynchronous absolute bearing vibration processing block (secondary path)

The VibroSmart VSV30x's asynchronous absolute bearing vibration processing block also has secondary path parameters that are configured on their individual tab.

To configure secondary path parameters for a VSV30x module's asynchronous absolute bearing vibration processing block, click the  Asynchronous Absolute Bearing Vibration Processing Block icon in the Hardware View window to select it, then select the Secondary Path title tab:

Parameters for **Asynchronous Absolute Bearing Vibration Processing Block Asynchronous Absolute Bearing Vibration Processing Block 1**

☐ VibroSmart Measurement
 ☒ VibroSmart VSV300
 ☒ Asynchronous Absolute

Name:
 State:

Input Channel:

Tacho Input Channel:

☒ Main Path
 ☐ Secondary Path

General
 State:

Frequency Domain Processing
 Low Pass Filter Frequency:

Waveform
 Output Name:
 Output State:

Waveform Size:

Spectrum
 Output Name:
 Output State:

Spectrum Size:
 Window Type:

Exponential Average:

Description:

VSV30x module asynchronous absolute bearing vibration processing block secondary path parameters

General

State

The secondary path of the asynchronous absolute bearing vibration processing block can be either Enabled or Disabled.

Frequency Domain Processing

Low Pass Filter Frequency

The cutoff frequency of the low-pass filter can be set to either 156.25 Hz, 312.5Hz, 625Hz, 1.25 kHz, 2.5 kHz, 5 kHz, 10 kHz or 20 kHz.

Waveform

Note:

The waveform size and the spectra size have a fixed relationship. That is, $\text{Spectrum Size} = \text{Waveform Size} / 2.56$

Output Name

The name of the output waveform, for example "My Waveform".

Output State

The output waveform can be either Enabled or Disabled.

Waveform Size

The size of the output waveform, in data points.

Spectrum

Note:

The waveform size and the spectra size have a fixed relationship. That is, $\text{Spectrum Size} = \text{Waveform Size} / 2.56$

Output Name

The name of the output spectrum, for example "My Spectrum".

Output State

The output spectrum can be either Enabled or Disabled.

Spectrum Size

The size of the output spectrum, in lines.

Window Type

The type of windowing function to be applied to the time-domain data. In general, for fixed frequency acquisition, a Hann (Hanning) window is recommended.

Exponential Average

A weighted moving average, used to reduce noise, where the weights of the older spectra decrease exponentially. TBC.

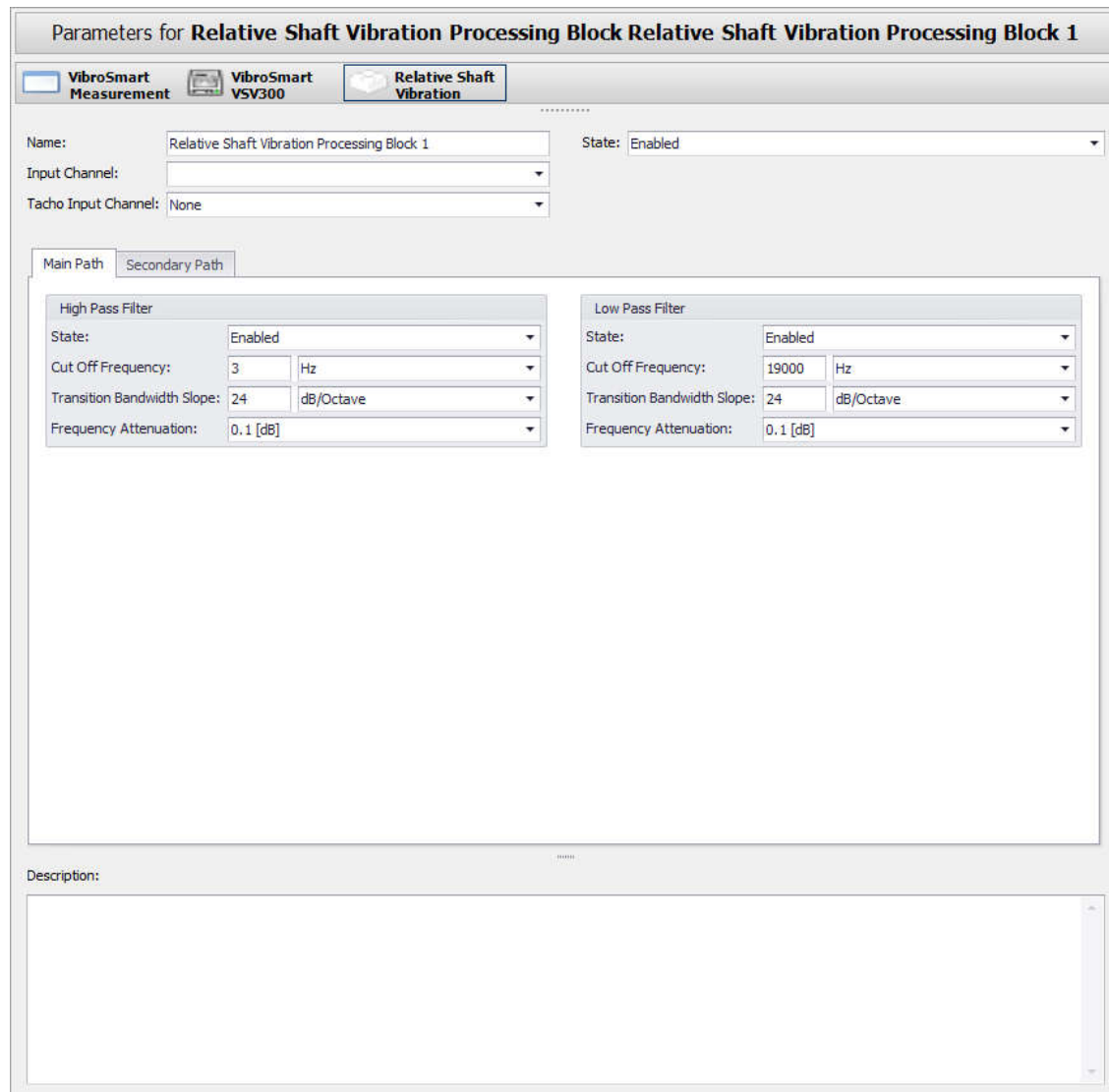
Parent topic: [VibroSmart VSV30x asynchronous absolute bearing vibration processing block \(main path\)](#)

VibroSmart VSV30x shaft relative vibration processing block (main path)

The VibroSmart VSV30x's shaft relative vibration processing block has overall parameters that must be configured in addition to the separate main path and secondary path parameters that are configured on their individual tabs and any required position extraction parameters.

The main path parameters correspond to the configurable band-pass filter in the main path of the dynamic input signal for a shaft relative vibration processing block.

To configure the overall and main path parameters for a VSV30x module's shaft relative vibration processing block, click the  Shaft Relative Vibration Processing Block icon in the Hardware View window to select it, then select the Main Path title tab:



Parameters for **Relative Shaft Vibration Processing Block** **Relative Shaft Vibration Processing Block 1**

VibroSmart Measurement **VibroSmart VSV300** **Relative Shaft Vibration**

Name: State:

Input Channel:

Tacho Input Channel:

Main Path **Secondary Path**

High Pass Filter

State:

Cut Off Frequency:

Transition Bandwidth Slope:

Frequency Attenuation:

Low Pass Filter

State:

Cut Off Frequency:

Transition Bandwidth Slope:

Frequency Attenuation:

Description:

VSV30x module shaft relative vibration processing block overall and main path parameters

Name

The name of the shaft relative vibration processing block, for example "Shaft Relative Vibration Processing Block 1".

State

A processing block can be either Enabled or Disabled for a module.

Input Channel

Select the physical dynamic input channel number on the VibroSmart DMS module with which this processing block is associated.

Tacho Input Channel

Select the physical tacho input channel on the VibroSmart DMS module with which this processing block is associated.

The Tacho Input Channel is only required for shaft relative vibration processing block monitoring if order-tracked frequency domain extractions are required (for example, Harmonics, NOT 1X or Sub-Harmonics).

High Pass Filter**State**

The high-pass filter section of the configurable band-pass filter can be either Enabled or Disabled.

Cut Off Frequency

The cutoff frequency of the high-pass filter can be specified from 3 Hz.

Transition Bandwidth Slope

The slope of the high-pass filter can be specified from 24 dB/Oct to 60 dB/Oct, in steps of 6 dB.

Frequency Attenuation

The attenuation at the cutoff frequency can be specified as either 0.1 dB or 3 dB.

Low Pass Filter**State**

The low-pass filter section of the of the configurable band-pass filter can be either Enabled or Disabled.

Cut Off Frequency

The cutoff frequency of the low-pass filter can be specified up to 19 kHz.

Transition Bandwidth Slope

The slope of the high-pass filter can be specified from 24 dB/Oct to 60 dB/Oct, in steps of 6 dB.

Frequency Attenuation

The attenuation at the cutoff frequency can be specified as either 0.1 dB or 3 dB.

Description

An optional description of the shaft relative vibration processing block.

Note:

- The low-pass to high-pass filter ratio must be 1000.
- The ... (TBD).
- [VibroSmart VSV30x shaft relative vibration processing block \(secondary path\)](#)
A VibroSmart VSV30x's shaft relative vibration processing block also has secondary path parameters that are configured on their individual tab.
- [VibroSmart VSV30x shaft relative vibration processing block \(position extraction\)](#)
A VibroSmart VSV30x's shaft relative vibration processing block also has position extraction parameters that are configured for the required position measurements.

Parent topic: [VibroSmart VSV30x processing blocks](#)

Related reference

[VibroSmart VSV30x dual shaft relative processing block](#)

VibroSmart VSV30x shaft relative vibration processing block (secondary path)

A VibroSmart VSV30x's shaft relative vibration processing block also has secondary path parameters that are configured on their individual tab.

The secondary path parameters correspond to the configurable low-pass filter and subsequent waveform and spectrum outputs in the secondary path of the dynamic input signal for a shaft relative vibration processing block.

To configure the overall and main path parameters for a VSV30x module's shaft relative vibration processing block, click the  Shaft Relative Vibration Processing Block icon in the Hardware View window to select it, then select the Secondary Path title tab:

Parameters for **Relative Shaft Vibration Processing Block Relative Shaft Vibration Processing Block 1**

☐ VibroSmart Measurement ☒ VibroSmart VSV300 ☒ Relative Shaft Vibration

Name: State:

Input Channel:

Tacho Input Channel:

Main Path ☒ Secondary Path ☐

General

State:

Frequency Domain Processing

Low Pass Filter Frequency:

Waveform

Output Name: Output State:

Waveform Size:

Spectrum

Output Name: Output State:

Spectrum Size: Window Type:

Exponential Average:

Description:

VSV30x module shaft relative vibration processing block secondary path parameters

General

State

The secondary path of the shaft relative vibration processing block can be either Enabled or Disabled.

Frequency Domain Processing

Low Pass Filter Frequency

The cutoff frequency of the low-pass filter can be set to either 156.25 Hz, 312.5Hz, 625Hz, 1.25 kHz, 2.5 kHz, 5 kHz, 10 kHz or 20 kHz.

Waveform

Note:

The waveform size and the spectra size have a fixed relationship. That is, $\text{Spectrum Size} = \text{Waveform Size} / 2.56$

Output Name

The name of the output waveform, for example "My Waveform".

Output State

The output waveform can be either Enabled or Disabled.

Waveform Size

The size of the output waveform, in data points.

Spectrum

Note:

The waveform size and the spectra size have a fixed relationship. That is, $\text{Spectrum Size} = \text{Waveform Size} / 2.56$

Output Name

The name of the output spectrum, for example "My Spectrum".

Output State

The output spectrum can be either Enabled or Disabled.

Spectrum Size

The size of the output spectrum, in lines.

Window Type

The type of windowing function to be applied to the time-domain data. In general, for fixed frequency acquisition, a Hann (Hanning) window is recommended.

Exponential Average

A weighted moving average, used to reduce noise, where the weights of the older spectra decrease exponentially. TBC.

Parent topic: [VibroSmart VSV30x shaft relative vibration processing block \(main path\)](#)

VibroSmart VSV30x shaft relative vibration processing block (position extraction)

A VibroSmart VSV30x's shaft relative vibration processing block also has position extraction parameters that are configured for the required position measurements.

The position extraction parameters correspond to a signal scaling, initial position subtraction and a fixed low pass filter (DC to 10 Hz) in a dedicated position extraction path for a shaft relative vibration processing block.

Note:

The shaft relative vibration processing block and its associated position extraction use the same signal processing functions (building blocks) used by the position extraction of the position processing block.

To configure the position extraction parameters for a VSV30x module's shaft relative vibration processing block, select the  Position Extraction icon under the  Shaft Relative Vibration Processing Block icon in the Hardware View window:

Parameters for Position Extraction

☐ VibroSmart Measurement
 ☒ VibroSmart VSV300
 ☐ Relative Shaft Vibration
 ☒ Position Extraction

Position Extraction

Name: State:

Gap Units: Gap:

Signal Inverted: ☐

Data Entities (Outputs)

Name	Type	Is Disabled	Used Outputs
Scalar Data Entity 1	Scalar	False	Position

VSV30x module shaft relative vibration processing block position extraction parameters

Position Extraction

Name

The name of the position extraction, for example "Position Extraction 1".

State

The position extraction path of the shaft relative vibration processing block can be either Enabled or Disabled.

ap Units

The position extraction path of the shaft relative vibration processing block can operate with either a physical value (engineering units) or an electrical value.

If Physical Value (Engineering Units) is selected, then the units available for the ap depends on the Physical quantity previously selected for the associated input channel (dynamic).

If Electrical Value is selected, then the units available for the ap depends on the Signal Transmission Mode previously selected for the associated input channel (dynamic).

ap

The initial gap (as either a physical value or an electrical value) measured when the measuring system was installed.

Signal Inverted

The signal from the input channel can optionally be inverted using the Signal Inverted control. More specifically, the sign of the input value can be inverted in accordance with the following position processing formula:

$X_{out} = (X_{in} \cdot S_{inv}) - X_{initial}$, where S_{inv} is the Signal Inverted parameter which can have a value of 1 or -1.

Clear the Signal Inverted check box to configure no signal inversion: $S_{inv} = 1$ (the default). Or select the Signal Inverted check box to configure signal inversion: $S_{inv} = -1$.

Data Entities (Outputs)

A list of the position measurements (scalar data entities) obtained from the position extraction path are listed.

Parent topic: [VibroSmart VSV30x shaft relative vibration processing block \(main path\)](#)

VibroSmart VSV30x narrow band vibration processing block

The VibroSmart VSV30x's narrow band vibration processing block has overall and measurement specific parameters that must be configured.

The overall parameters include a configurable narrow-band pass filter – that tracks the tachometer (1/REV pulse) signal in order to generate all of its frequency domain extractions – in the main path of the dynamic input signal for a narrow band vibration processing block.

The measurement specific parameters correspond to the waveform and spectrum outputs in the main path of the dynamic input signal for an narrow band vibration processing block.

To configure the parameters for a VSV30x module's narrow band vibration processing block, click the  Narrow Band Vibration Processing Block icon in the Hardware View window to select it:

Parameters for **Narrow Band Vibration Processing Block** **Narrow Band Vibration Processing Block 1**

VibroSmart Measurement **VibroSmart VSV300** **Narrow Band Vibration**

Name: State:

Input Channel: Tacho Input Channel:

Bandwidth: Points Per Rotation:

Minimum Speed: Hz Maximum Speed: Hz

Waveform

Output Name: State:

Waveform Size: Averaging: ☐

Spectrum

Output Name: Output State:

Spectrum Size: Window Type:

Exponential Average:

Description:

VSV30x module narrow band vibration processing block parameters

Name

The name of the narrow band vibration processing block, for example "Narrow Band Vibration Processing Block 1".

State

A processing block can be either Enabled or Disabled for a module.

Input Channel

Select the physical dynamic input channel number on the VibroSmart DMS module with which this processing block is associated.

Tacho Input Channel

Select the physical tacho input channel on the VibroSmart DMS module with which this processing block is associated.

The Tacho Input Channel is a prerequisite for narrow band vibration monitoring, as narrow band vibration processing is a synchronous measurement that requires a tachometer (1/REV pulse) signal in order to generate all of its frequency domain extractions (Band Peak, Band Energy, Harmonics, NOT 1X and Sub-Harmonics).

Bandwidth

The bandwidth of the measurement in orders (nX), where n is a multiplier and X is the first order (that is, the rotational speed of the target machine).

Note:

Synchronous measurements such as narrow band vibration processing support order analysis techniques that enable vibration signals to be analysed, even as the rotational speed changes over time. For example, with order analysis, information about harmonics in the frequency domain extractions due to changing rotational speed can be effectively monitored.

An order is the normalization of the rotational speed. The first order is the rotational speed, and the order nX is n times the rotational speed. Order components thus are the harmonics of the rotational speed.

Points Per Rotation

The number of measurement points taken by the module per revolution. narrow band vibration processing is a synchronous measurement that requires a fixed number of points per revolution (rotational speed) in order to support order analysis.

Minimum Speed

The minimum speed of - TBC.

Maximum Speed

The maximum speed of - TBC.

Waveform

Note:

The waveform size and the spectra size have a fixed relationship. That is, $\text{Spectrum Size} = \text{Waveform Size} / 2.56$

Output Name

The name of the output waveform, for example "My Waveform".

State

The output waveform can be either Enabled or Disabled.

Waveform Size

The size of the output waveform, in data points.

Averaging

If enabled, the number of averages used for a simple (unweighted) moving average should be selected. Used to reduce noise. TBC.

Spectrum

Note:

The waveform size and the spectra size have a fixed relationship. That is, $\text{Spectrum Size} = \text{Waveform Size} / 2.56$

Output Name

The name of the output spectrum, for example "My Spectrum".

Output State

The output spectrum can be either Enabled or Disabled.

Spectrum Size

The size of the output spectrum, in lines.

Window Type

The type of windowing function to be applied to the time-domain data. In general, for fixed frequency acquisition, a Hann (Hanning) window is recommended.

Exponential Average

A weighted moving average, used to reduce noise, where the weights of the older spectra decrease exponentially. TBC.

Description

An optional description of the narrow band vibration processing block.

Parent topic: [VibroSmart VSV30x processing blocks](#)

VibroSmart VSV30x tacho processing block

The VibroSmart VSV30x's tacho (speed) processing block has overall parameters that must be configured in addition to the required speed extraction parameters.

The overall parameters correspond to the tacho input (auxiliary) channel and details of any tacho ratio for the machine being monitored.

To configure the overall parameters for a VSV30x module's tacho processing block, click the  Tacho Processing Block icon in the Hardware View window to select it:

Parameters for **Tacho Processing Block Tacho Processing Block 1**

VibroSmart Measurement **VibroSmart VSV300** **Tacho Processing**

Name: State:

Tacho Input Channel:

Tacho Ratio

Multiplier: Ratio:

Divider:

Description:

VSV30x module tacho processing block overall parameters

Name

The name of the tacho processing block, for example "Tacho Processing Block 1".

State

A processing block can be either Enabled or Disabled for a module.

Tacho Input Channel

Select the physical tacho input channel on the VibroSmart DMS module with which this processing block is associated.

Tacho Ratio

Multiplier

The numerator that, in conjunction with the Divider, describes the relationship between the input and output shafts of a machine.

Divider

The denominator that, in conjunction with the Multiplier, describes the relationship between the input and output shafts of a machine.

Ratio

The Ratio is calculated by VibroSight using the data entered in the Multiplier and Divider fields. It cannot be edited by the user.

Description

An optional description of the tacho processing block.

Note:

- The tacho ratio is used if there is a difference in rotational speeds between the input (that is, the shaft used as the tacho input) and the output (that is, the main shaft of interest being monitored) for a the machine. Typically, this is due to a gearbox between these shafts.
- Accept the default tacho ratio value of 1 if there is no difference in the rotational speed between the input and output shafts in the machine. Typically, this occurs when the tacho input monitors a timing mark or wheel mounted directly on the main shaft in the machine.
- [VibroSmart VSV30x tacho processing block \(speed extraction\)](#)
A VibroSmart VSV30x's tacho (speed) processing block also has speed extraction parameters that are configured for the required speed measurements.

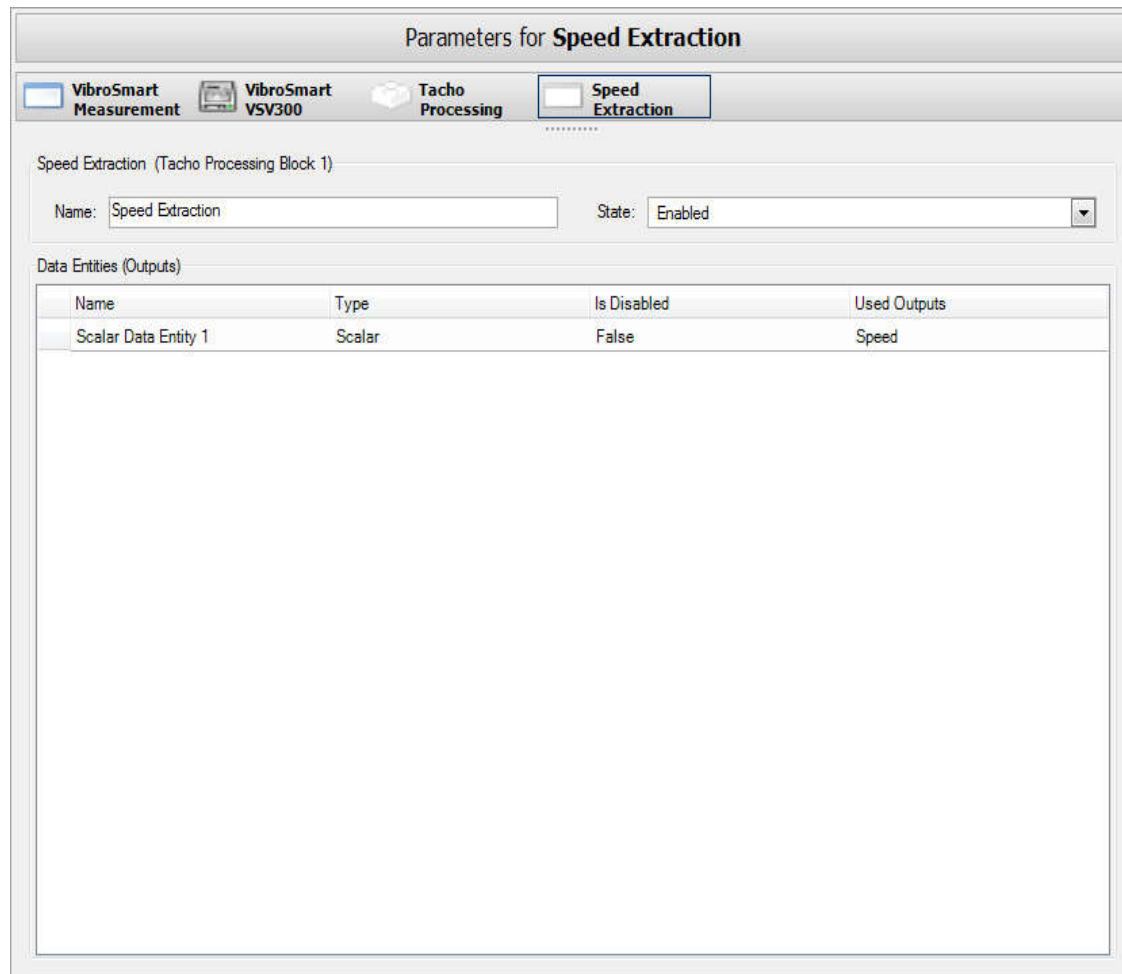
Parent topic: [VibroSmart VSV30x processing blocks](#)

VibroSmart VSV30x tachometer processing block (speed extraction)

A VibroSmart VSV30x's tachometer (speed) processing block also has speed extraction parameters that are configured for the required speed measurements.

The speed extraction parameters correspond to a signal scaling, edge detection and frequency (speed) measurement in the tachometer processing block.

To configure the speed extraction parameters for a VSV30x module's tachometer processing block, select the  Speed Extraction icon under the  Tachometer Processing Block icon in the Hardware View window:



Parameters for **Speed Extraction**

 **VibroSmart Measurement**  **VibroSmart VSV300**  **Tachometer Processing**  **Speed Extraction**

Speed Extraction (Tachometer Processing Block 1)

Name: State:

Data Entities (Outputs)

Name	Type	Is Disabled	Used Outputs
Scalar Data Entity 1	Scalar	False	Speed

VSV30x module tachometer processing block speed extraction parameters

Speed Extraction

Name

The name of the speed extraction, for example "Speed Extraction 1".

State

The speed extraction path of the tachometer processing block can be either Enabled or Disabled.

Data Entities (Outputs)

A list of the speed measurements (scalar data entities) obtained from the speed extraction path are listed.

Parent topic: [VibroSmart VSV30x tachometer processing block](#)

VibroSmart VSV30x position processing block

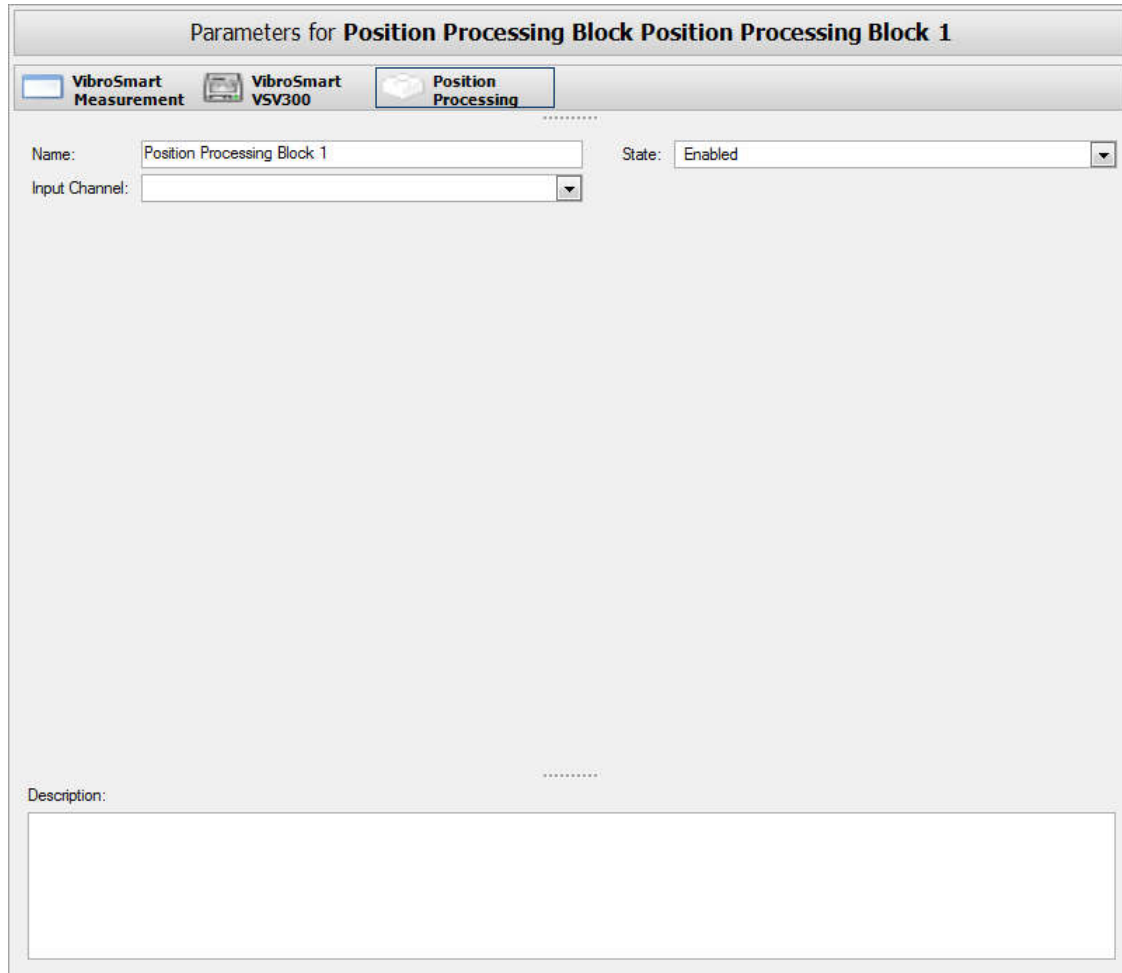
The VibroSmart VSV30x's position processing block has overall parameters that must be configured in addition to the required position extraction parameters.

The overall parameters are used to select the input channel.

Note:

Position processing blocks can be used with an Auxiliary Input Channel configured as a DC input channel and with Dynamic Input Channels.

To configure the overall parameters for a VSV30x module's position processing block, click the  Position Processing Block icon in the Hardware View window to select it:



Parameters for **Position Processing Block Position Processing Block 1**

VibroSmart Measurement **VibroSmart VSV300** **Position Processing**

Name: State:

Input Channel:

Description:

VSV30x module position processing block overall parameters

Name

The name of the position processing block, for example "Position Processing Block 1".

State

A processing block can be either Enabled or Disabled for a module.

Input Channel

Select the physical input channel on the VibroSmart DMS module with which this processing block is associated.

Description

An optional description of the position processing block.

- [VibroSmart VSV30x position processing block \(position extraction\)](#)

A VibroSmart VSV30x's position processing block also has position extraction parameters that are configured for the required position measurements.

Parent topic: [VibroSmart VSV30x processing blocks](#)

VibroSmart VSV30x position processing block (position extraction)

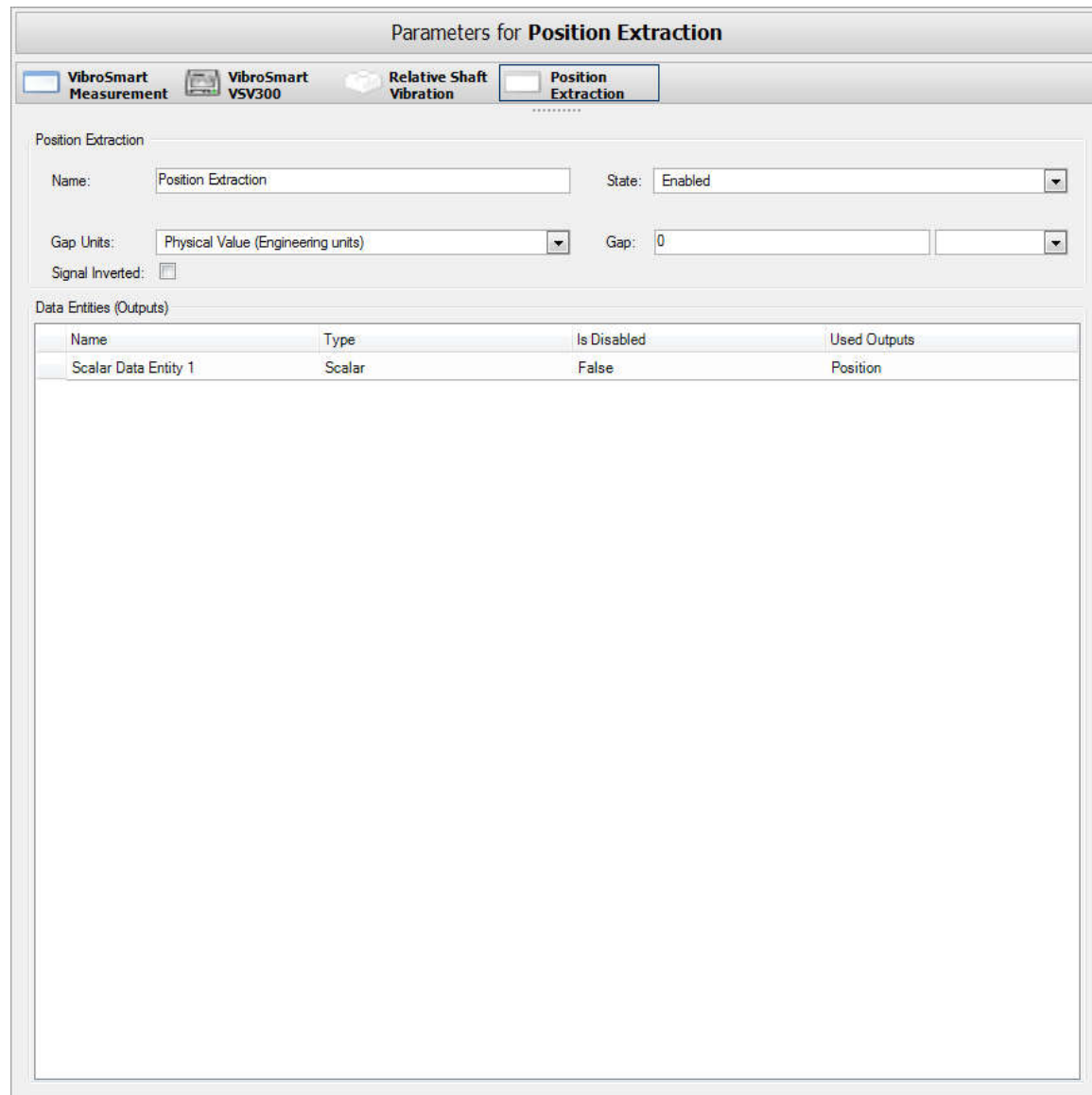
A VibroSmart VSV30x's position processing block also has position extraction parameters that are configured for the required position measurements.

The position extraction parameters correspond to a signal scaling, initial position subtraction and a fixed low pass filter (DC to 10 Hz) in a dedicated position extraction path for a position processing block.

Note:

The position processing block and its associated position extraction use the same signal processing functions (building blocks) used by the position extraction of the shaft relative vibration processing block.

To configure the position extraction parameters for a VSV30x module's position processing block, select the  Position Extraction icon under the  Position Processing Block icon in the Hardware View window:



Parameters for **Position Extraction**

Position Extraction

Name: State:

Gap Units: Gap:

Signal Inverted: ☐

Data Entities (Outputs)

Name	Type	Is Disabled	Used Outputs
Scalar Data Entity 1	Scalar	False	Position

VSV30x module position processing block position extraction parameters

Position Extraction

Name

The name of the position extraction, for example "Position Extraction 1".

State

The position extraction path of the position processing block can be either Enabled or Disabled.

ap Units

The position extraction path of the position processing block can operate with either a physical value (engineering units) or an electrical value.

If Physical Value (Engineering Units) is selected, then the units available for the ap depends on the Physical quantity previously selected for the associated input channel (dynamic).

If Electrical Value is selected, then the units available for the ap depends on the Signal Transmission Mode previously selected for the associated input channel (dynamic).

ap

The initial gap (as either a physical value or an electrical value) measured when the measuring system was installed.

Signal Inverted

The signal from the input channel can optionally be inverted using the Signal Inverted control. More specifically, the sign of the input value can be inverted in accordance with the following position processing formula:

$X_{out} = (X_{in} \cdot S_{inv}) - X_{initial}$, where S_{inv} is the Signal Inverted parameter which can have a value of 1 or -1.

Clear the Signal Inverted check box to configure no signal inversion: $S_{inv} = 1$ (the default). Or select the Signal Inverted check box to configure signal inversion: $S_{inv} = -1$.

Data Entities (Outputs)

A list of the position measurements (scalar data entities) obtained from the position extraction path are listed.

Parent topic: [VibroSmart VSV30x position processing block](#)

VibroSmart VSV30x broad band pulsation processing block (main path)

The VibroSmart VSV30x's broad band pulsation processing block has overall parameters that must be configured in addition to the separate main path and secondary path parameters that are configured on their individual tabs.

The main path parameters correspond to a notch filter followed by the configurable band pass filter in the main path of the dynamic input signal for an broad band pulsation processing block.

To configure the overall and main path parameters for a VSV30x module's broad band pulsation processing block, click the  Broad Band Pulsation Processing Block icon in the Hardware View window to select it, then select the Main Path title tab:

Parameters for **Broad Band Pulsation Processing Block Broad Band Pulsation Processing Block 1**

VibroSmart Measurement **VibroSmart VSV300** **Broad Band Pulsation**

Name: Broad Band Pulsation Processing Block 1 State: Enabled

Input Channel:

Tacho Input Channel: None

Main Path Secondary Path

High Pass Filter

State: Enabled

Cut Off Frequency: 3 Hz

Transition Bandwidth Slope: 24 dB/Octave

Frequency Attenuation: 0.1 [dB]

Low Pass Filter

State: Enabled

Cut Off Frequency: 19000 Hz

Transition Bandwidth Slope: 24 dB/Octave

Frequency Attenuation: 0.1 [dB]

Notch

State: Enabled Notch: 50 [Hz]

Description:

VSV30x module broad band pulsation processing block overall and main path parameters

Name

The name of the broad band pulsation processing block, for example "Broad Band Pulsation Processing Block 1".

State

A processing block can be either Enabled or Disabled for a module.

Input Channel

Select the physical dynamic input channel number on the VibroSmart DMS module with which this processing block is associated.

Tacho Input Channel

Select the physical tacho input channel on the VibroSmart DMS module with which this processing block is associated.

The Tacho Input Channel is only required for broad band pulsation monitoring if order-tracked frequency domain extractions are required (for example, Harmonics, NOT 1X or Sub-Harmonics).

High Pass Filter

State

The high-pass filter section of the configurable band-pass filter can be either Enabled or Disabled.

Cut Off Frequency

The cutoff frequency of the high-pass filter can be specified from 3 Hz without integration, or from 5 Hz if integration will be used on the input signal (TBC).

Transition Bandwidth Slope

The slope of the high-pass filter can be specified from 24 dB/Oct to 60 dB/Oct, in steps of 6 dB.

Frequency Attenuation

The attenuation at the cutoff frequency can be specified as either 0.1 dB or 3 dB.

Low Pass Filter

State

The low-pass filter section of the of the configurable band-pass filter can be either Enabled or Disabled.

Cut Off Frequency

The cutoff frequency of the low-pass filter can be specified up to 19 kHz.

Transition Bandwidth Slope

The slope of the high-pass filter can be specified from 24 dB/Oct to 60 dB/Oct, in steps of 6 dB.

Frequency Attenuation

The attenuation at the cutoff frequency can be specified as either 0.1 dB or 3 dB.

Notch

State

The notch filter section – before the configurable band-pass filter in the main path of the dynamic input signal – can be either Enabled or Disabled.

Notch

The notch filter can be selected depending on the operating frequency of the target machine (50 Hz or a 60 Hz) to reduce hum (noise).

Description

An optional description of the broad band pulsation processing block.

Note:

- TBC: Up to two successive integrators can be used after the configurable band-pass filter. For example, to convert an accelerometer's acceleration output to velocity (one integration) or displacement (two integrations).
- TBC: The low-pass to high-pass filter ratio must be 1000 if no or one integration is used.
- TBC: The low-pass to high-pass filter ratio must be 100 if two integrations are used.
- [VibroSmart VSV30x broad band pulsation processing block \(secondary path\)](#)
The VibroSmart VSV30x's broad band pulsation processing block also has secondary path parameters that are configured on their individual tab.

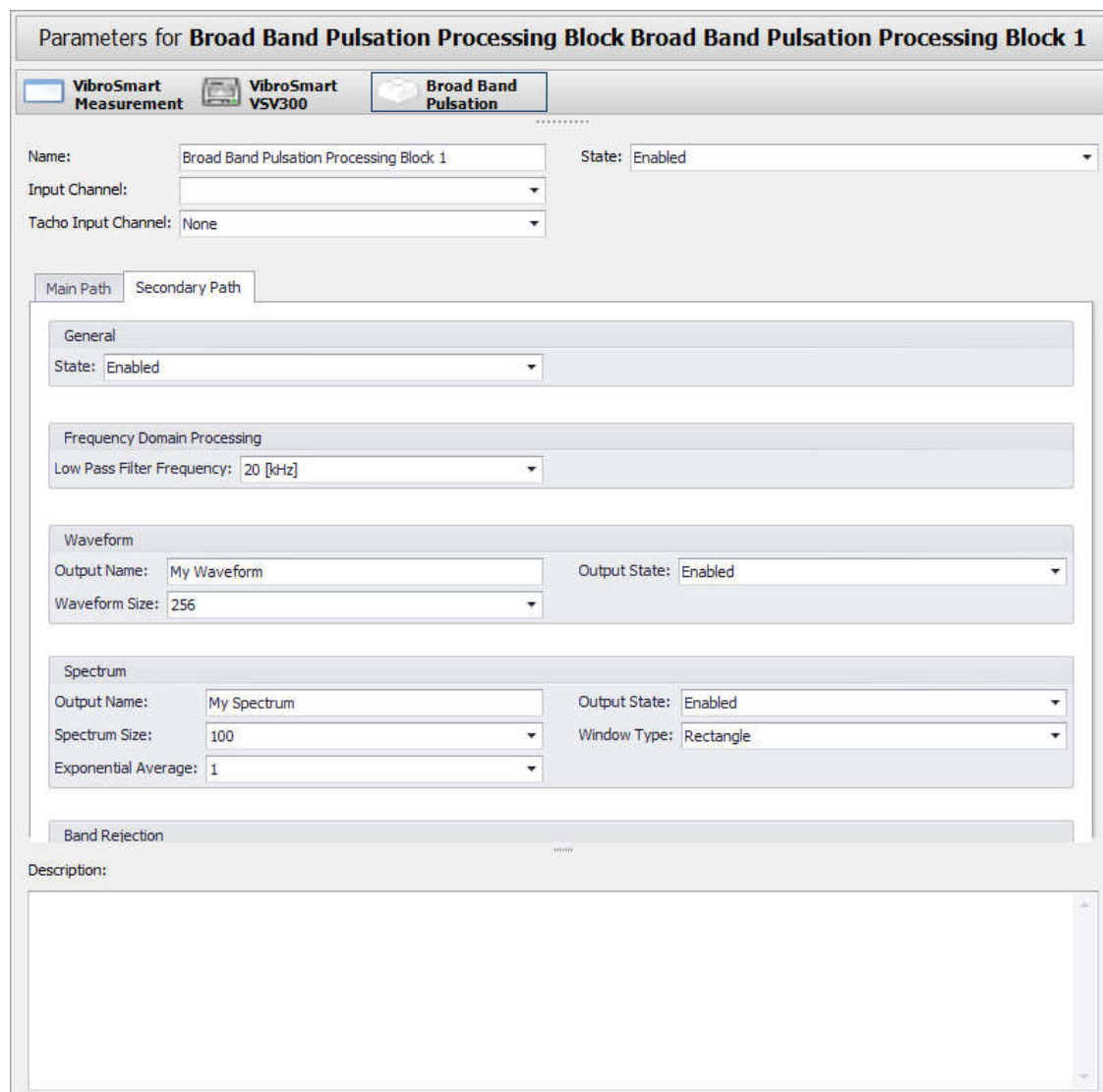
Parent topic: [VibroSmart VSV30x processing blocks](#)

VibroSmart VSV30x broad band pulsation processing block (secondary path)

The VibroSmart VSV30x's broad band pulsation processing block also has secondary path parameters that are configured on their individual tab.

The secondary path parameters correspond to the configurable low pass filter, subsequent waveform and spectrum outputs, followed by a final (TBC) band-rejection filter, in the secondary path of the dynamic input signal for an broad band pulsation processing block.

To configure secondary path parameters for a VSV30x module's broad band pulsation processing block, click the  Broad Band Pulsation Processing Block icon in the Hardware View window to select it, then select the Secondary Path title tab:



Parameters for **Broad Band Pulsation Processing Block Broad Band Pulsation Processing Block 1**

VibroSmart Measurement **VibroSmart VSV300** **Broad Band Pulsation**

Name: Broad Band Pulsation Processing Block 1 State: Enabled

Input Channel:

Tacho Input Channel: None

Main Path Secondary Path

General

State: Enabled

Frequency Domain Processing

Low Pass Filter Frequency: 20 [kHz]

Waveform

Output Name: My Waveform Output State: Enabled

Waveform Size: 256

Spectrum

Output Name: My Spectrum Output State: Enabled

Spectrum Size: 100 Window Type: Rectangle

Exponential Average: 1

Band Rejection

Description:

VSV30x module broad band pulsation processing block secondary path parameters

General

State

The secondary path of the broad band pulsation processing block can be either Enabled or Disabled.

Frequency Domain Processing

Low Pass Filter Frequency

The cutoff frequency of the low-pass filter can be set to either 156.25 Hz, 312.5Hz, 625Hz, 1.25 kHz, 2.5 kHz, 5 kHz, 10 kHz or 20 kHz.

Waveform

Note:

The waveform size and the spectra size have a fixed relationship. That is, $\text{Spectrum Size} = \text{Waveform Size} / 2.56$

Output Name

The name of the output waveform, for example "My Waveform".

Output State

The output waveform can be either Enabled or Disabled.

Waveform Size

The size of the output waveform, in data points.

Spectrum

Note:

The waveform size and the spectra size have a fixed relationship. That is, $\text{Spectrum Size} = \text{Waveform Size} / 2.56$

Output Name

The name of the output spectrum, for example "My Spectrum".

Output State

The output spectrum can be either Enabled or Disabled.

Spectrum Size

The size of the output spectrum, in lines.

Window Type

The type of windowing function to be applied to the time-domain data. In general, for fixed frequency acquisition, a Hann (Hanning) window is recommended.

Exponential Average

A weighted moving average, used to reduce noise, where the weights of the older spectra decrease exponentially. TBC.

Band Rejection

Parameters used to create a notch filter to remove unwanted lines from the output spectrum.

Note:

This band-rejection (band-stop) filter passes all frequencies except for the range specified.

Band Start

The start frequency of the band-rejection filter.

Band Stop

The stop frequency of the band-rejection filter.

State

The band-rejection filter can be either Enabled or Disabled.

Parent topic: [VibroSmart VSV30x broad band pulsation processing block \(main path\)](#)

VibroSmart VSV30x dual shaft relative processing block

The VibroSmart VSV30x's dual shaft relative processing block has overall parameters that must be configured in addition to any required orbit and $S_{\max}$ data entities.

Note:

The single-channel processing blocks used as the inputs to the dual shaft relative processing block must be shaft relative vibration processing blocks and the channels must be orthogonal, that is, from transducers (X and Y) mounted on the machine bearing at approximately 90° to each other.

To configure the parameters for a VSV30x module's dual shaft relative processing block, click the  Dual Shaft Relative Processing Block icon in the Hardware View window to select it:

Parameters for **Dual Shaft Relative Processing Block Dual Shaft Relative Processing Block 1**

VibroSmart Measurement **VibroSmart VSV300** **Dual Shaft Relative**

Name: Dual Shaft Relative Processing Block 1 State: Enabled

X Channel Setup

Processing Block: [Dropdown]
 State: [Dropdown]
 Sampling Mode: [Dropdown]
 Bandwidth: [Dropdown]
 Reference Speed: [Dropdown]
 Sensor Orientation: 0 [Dropdown] [Dropdown] EU [Dropdown]
 Physical Quantity: [Dropdown]

Y Channel Setup

Processing Block: [Dropdown]
 State: [Dropdown]
 Sampling Mode: [Dropdown]
 Bandwidth: [Dropdown]
 Reference Speed: [Dropdown]
 Sensor Orientation: 0 [Dropdown] [Dropdown] EU [Dropdown]
 Physical Quantity: [Dropdown]

Description:

[Text Area]

VSV30x module dual shaft relative processing block parameters

Name

The name of the dual shaft relative processing block, for example "Dual Shaft Relative Processing Block 1".

State

A processing block can be either Enabled or Disabled for a module.

X Channel Setup – Processing Block

Select the single-channel processing block to be used as the X channel input to the dual shaft relative processing block.

When the X Channel Setup Processing Block is selected, VibroSight Configurator automatically populates the other fields related to this channel, such as State, Sampling Mode, Bandwidth, Reference Speed, Sensor Orientation and Physical quantity using the parameters that have been configured for the single-channel processing block.

Y Channel Setup – Processing Block

Select the single-channel processing block to be used as the Y channel input to the dual shaft relative processing block.

When the Y Channel Setup Processing Block is selected, VibroSight Configurator automatically populates the other fields related to this channel, such as State, Sampling Mode, Bandwidth, Reference Speed, Sensor Orientation and Physical quantity using the parameters that have been configured for the single-channel processing block.

Description

An optional description of the dual shaft relative processing block.

- [VibroSmart VSV30x dual shaft relative processing block - orbit data entity](#)
A VibroSmart VSV30x's dual shaft relative processing block also has an optional orbit data entity with parameters that can be configured in order to provide orbit measurements.
- [VibroSmart VSV30x dual shaft relative processing block - Smax data entity](#)
A VibroSmart VSV30x's dual shaft relative processing block also has an optional Smax data entity with parameters that can be configured in order to provide either a Smax measurement or an X-Ymax discriminator measurement.

Parent topic: [VibroSmart VSV30x processing blocks](#)

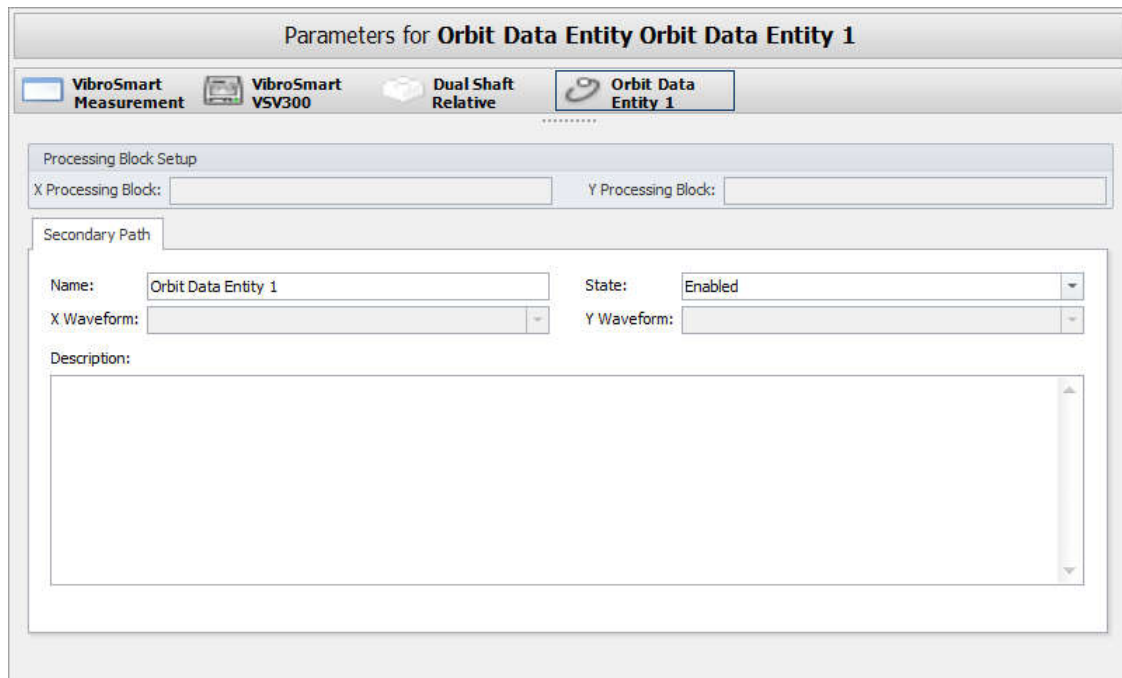
Related reference

[VibroSmart VSV30x shaft relative vibration processing block \(main path\)](#)

VibroSmart VSV30x dual shaft relative processing block - orbit data entity

A VibroSmart VSV30x's dual shaft relative processing block also has an optional orbit data entity with parameters that can be configured in order to provide orbit measurements.

To configure the Orbit data entity parameters for a VSV30x module's dual shaft relative processing block, select the  Orbit Data Entity icon under the  Dual Shaft Relative Processing Block icon in the Hardware View window:



VSV30x module dual shaft relative processing block orbit data entity parameters

Processing Block Setup

VibroSight Configurator automatically populates these and some other fields from the parameters configured for the parent Dual Shaft Relative Processing Block.

Secondary Path

Name

The name of the orbit data entity, for example "Orbit Data Entity 1".

State

A data entity can be either Enabled or Disabled for a processing block.

X Waveform

Automatically populated using the parameters that have been configured for the single-channel processing block used by the parent Dual Shaft Relative Processing Block.

Y Waveform

Automatically populated using the parameters that have been configured for the single-channel processing block used by the parent Dual Shaft Relative Processing Block.

Description

An optional description of the orbit measurement.

Parent topic: [VibroSmart VSV30x dual shaft relative processing block](#)

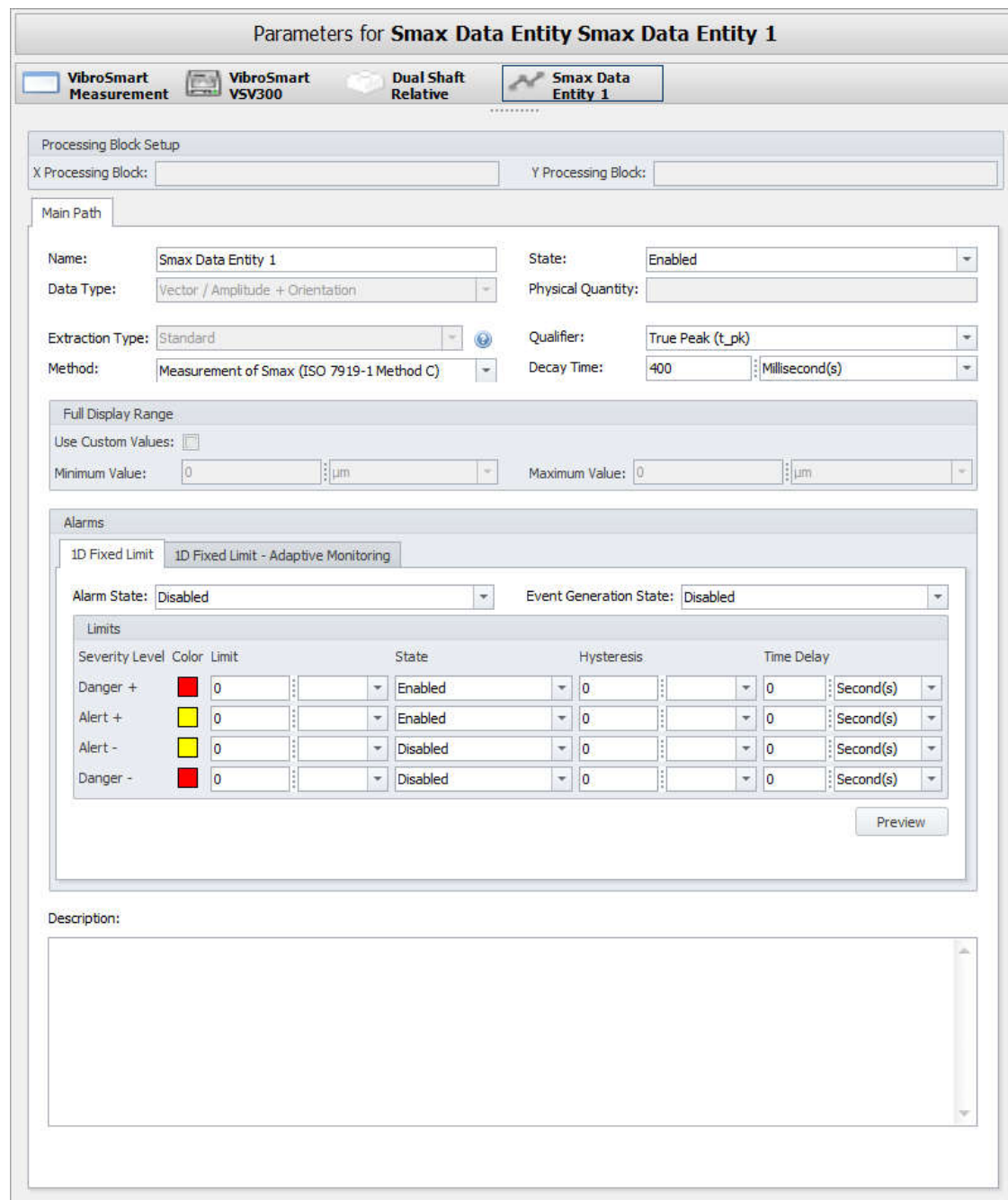
VibroSmart VSV30x dual shaft relative processing block - $S_{\max}$ data entity

A VibroSmart VSV30x's dual shaft relative processing block also has an optional $S_{\max}$ data entity with parameters that can be configured in order to provide either a $S_{\max}$ measurement or an X-Ymax discriminator measurement.

Note:

VibroSmart VSV30x modules uses ISO 7919-1 method C to calculate $S_{\max}$ measurements and ISO 7919-1 method B to calculate X-Ymax discriminator measurements.

To configure the $S_{\max}$ data entity parameters for a VSV30x module's dual shaft relative processing block, select the  $S_{\max}$ Data Entity icon under the  Dual Shaft Relative Processing Block icon in the Hardware View window:



Parameters for Smax Data Entity Smax Data Entity 1

Processing Block Setup

X Processing Block: Y Processing Block:

Main Path

Name: State:

Data Type: Physical Quantity:

Extraction Type: Qualifier:

Method: Decay Time:

Full Display Range

Use Custom Values: ☐

Minimum Value: Maximum Value:

Alarms

Alarm State: Event Generation State:

Severity Level	Color	Limit	State	Hysteresis	Time Delay
Danger +		0	Enabled	0	0 Second(s)
Alert +		0	Enabled	0	0 Second(s)
Alert -		0	Disabled	0	0 Second(s)
Danger -		0	Disabled	0	0 Second(s)

Description:

VSV30x module dual shaft relative processing block $S_{\max}$ data entity parameters

Processing Block Setup

VibroSight Configurator automatically populates these and some other fields from the parameters configured for the parent Dual Shaft Relative Processing Block.

Main Path

Name

The name of the $S_{\max}$ data entity, for example "Smax Data Entity 1".

State

A data entity can be either Enabled or Disabled for a processing block.

Data Type

Automatically populated using the parameters that have been configured for the single-channel processing block used by the parent

Dual Shaft Relative Processing Block.

Physical quantity

Automatically populated using the parameters that have been configured for the single-channel processing block used by the parent Dual Shaft Relative Processing Block.

Extraction Type

Automatically populated using the parameters that have been configured for the single-channel processing block used by the parent Dual Shaft Relative Processing Block.

Qualifier

The qualifier (rectifier) used for the measurement.

Method

The $S_{\max}$ data entity can be configured to provide either an $S_{\max}$ or an X-Ymax discriminator measurement:

- Select Measurement of Smax (ISO 7919-1 Method C) in order to provide a $S_{\max}$ measurement, calculated according to method C of the ISO 7919-1 standard.
- Select X-Y max discriminator (ISO 7919-1 Method B) in order to provide an X-Ymax discriminator measurement, calculated according to method B of the ISO 7919-1 standard.

Exponential Average / Decay Time

When the Shaft Relative Vibration Processing Blocks used as inputs to the Dual Shaft Relative Processing Block use a reference speed (which must be the same for both channels), then Exponential Average can be used to perform a weighted moving average of the detected peaks, where the weights of the older peaks decrease exponentially.

When the Shaft Relative Vibration Processing Blocks used as inputs to the Dual Shaft Relative Processing Block do not use a reference speed, then Decay Time can be used to configure the time allowed for a detected peak to decay to 10% of its value.

Note:

When a reference speed is used, $S_{\max}$ and X-Ymax discriminator simply detect the peak value over a rotation. The detected peaks can be averaged using exponential averaging in order to reduce noise.

When a reference speed is not used, $S_{\max}$ and X-Ymax discriminator use a true peak qualifier (rectifier) that gives the instantaneous value of the rectifier over time (exponential decay law) and is valid while the signal value at the same instant is lower than the rectifier value. Once the signal is greater, it becomes the new peak value that is used to re-initialise the decay formula.

Description

An optional description of the $S_{\max}$ data entity.

Parent topic: [VibroSmart VSV30x dual shaft relative processing block](#)

Related concepts

[Smax processing](#)

VibroSmart VSV30x logical functions

The VibroSmart VSV30x provides logical functions that allow alarm and status information from the VSV30x module to be logically combined in order to form aggregate bits (flags), which can be used to drive the VSV30x's relay outputs.

Note:

For a VSV30x module:

- Up to four basic logical functions and up to two advanced logical functions are available per module
- Only alarm and status information internal to the module (local) can be used as inputs to its logical functions.

A VSV30x module's basic logical function outputs can be used as inputs to the module's advanced logical functions.

A VSV30x module's basic logical function and advanced logical function outputs (in addition to alarm and status information from the module) can be used as inputs to drive the module's relay outputs.

- [VibroSmart VSV30x logical functions summary](#)
The Logical Functions node in a VibroSmart DMS module's configuration tree (Hardware view) provides a summary view of the basic logical functions and the advanced logical functions configured for the module.
- [VibroSmart VSV30x basic logical function parameters](#)
A VibroSmart DMS's basic logical functions have parameters that must be configured in the module's configuration tree (Hardware view).
- [VibroSmart VSV30x advanced logical function parameters](#)

A VibroSmart DMSs advanced logical functions have parameters that must be configured in the module's configuration tree (Hardware view).

Parent topic: [VibroSmart VSV30x parameters](#)

VibroSmart VSV30x logical functions summary

The Logical Functions node in a VibroSmart DMS module's configuration tree (Hardware view) provides a summary view of the basic logical functions and the advanced logical functions configured for the module.

This summary view includes the Name, Function Id and a Summary of the logical functions.

Right-clicking on the Logical Functions allows new logical functions to be added to the module.

Parent topic: [VibroSmart VSV30x logical functions](#)

VibroSmart VSV30x basic logical function parameters

A VibroSmart DMSs basic logical functions have parameters that must be configured in the module's configuration tree (Hardware view).

The basic logical function parameters define the functionality required from a basic logical function.

To configure the parameters for a basic logical function, click the  basic logical function icon in the Hardware view window:

Parameters for **Basic Logical Function Basic Logical Function 1**

☐ VibroSmart Measurement
 ☒ VibroSmart VSV300
 ☐ Basic Logical Function 1

Name: Basic Logical Function 1
 State: Enabled

Function Id: 1
 Type: Basic Logical Function

Function

☐ AND
☒ OR
☐ Voting - Number: 1

Inputs

Type	Hierarchy	Name	Inverted	State
Alarm Input	VibroSmart Measurement Block 1 / VibroSmart VSV300 Module 1 / Relative Shaft Vibration ...	1D Fixed Limit (Position) - Danger +	☐	Disabled
Alarm Input	VibroSmart Measurement Block 1 / VibroSmart VSV300 Module 1 / Relative Shaft Vibration ...	1D Fixed Limit (Position) - Alert +	☐	Disabled
Alarm Input	VibroSmart Measurement Block 1 / VibroSmart VSV300 Module 1 / Relative Shaft Vibration ...	1D Fixed Limit (Position) - Alert -	☐	Disabled
Alarm Input	VibroSmart Measurement Block 1 / VibroSmart VSV300 Module 1 / Relative Shaft Vibration ...	1D Fixed Limit (Position) - Danger -	☐	Disabled

Add Remove

Description:

Basic logical function parameters for a VSV30x module

Name

The name of the basic logical function, for example "Basic Logical Function 1".

State

The basic logical function can be either Enabled or Disabled.

Function Id

An internal identifier for the basic logical function, used by VibroSight.

For VSV30x modules, this Function Id must be in the range 1 to 4 (that is, there can be up to four basic logical functions per module).

Type

A logical function can either be a Basic Logical Function or an Advanced Logical Function. Not available (greyed out) for configuration.

Under Function, one of the following option buttons should be selected:

AND

The inputs to the basic logical function will be logically ANDed to generate the output bit.

OR

The inputs to the basic logical function will be logically ORed to generate the output bit.

Voting - Number

The inputs to the basic logical function will undergo a majority voting function where the specified Number of inputs must be true in order to have an output bit that is true.

Under Inputs, the following buttons should be used to select the inputs for the basic logical function:

Add

The Add button is used to add the required alarm and status information as inputs (bits) to the basic logical function.

Remove

The Remove button is used to remove unwanted alarm and status information inputs (bits) from the basic logical function.

The Description text box can be used to include an optional description of the basic logical function.

Parent topic: [VibroSmart VSV30x logical functions](#)

VibroSmart VSV30x advanced logical function parameters

A VibroSmart DMSs advanced logical functions have parameters that must be configured in the module's configuration tree (Hardware view).

The advanced logical function parameters define the functionality required from an advanced logical function.

To configure the parameters for an advanced logical function, click the  advanced logical function icon in the Hardware view window:

Parameters for **Advanced Logical Function Advanced Logical Function 1**

☐ VibroSmart Measurement
 ☒ VibroSmart VSV300
 ☐ Advanced Logical

Name:
 State:

Function Id:
 Type:

Function

☐ AND
☒ OR
☐ Voting - Number:

Inputs

Type	Hierarchy	Name	Inverted	State
Logical Function Output	VibroSmart Measurement Block 1 / VibroSmart VSV300 Module 1 / Basic Logical Func...	Basic Logical Function 1 Output	☐	Enabled
Logical Function Output	VibroSmart Measurement Block 1 / VibroSmart VSV300 Module 1 / Basic Logical Func...	Basic Logical Function 2 Output	☐	Enabled

Add Remove

Description:

Advanced logical function parameters for a VSV30x module

Name

The name of the advanced logical function, for example "Advanced Logical Function 1".

State

The advanced logical function can be either Enabled or Disabled.

Function Id

An internal identifier for the advanced logical function, used by VibroSight.

For VSV30x modules, this Function Id must be in the range 5 to 6 (that is, there can be up to two advanced logical functions per module).

Type

A logical function can either be a Basic Logical Function or an Advanced Logical Function. Not available (greyed out) for configuration.

Under Function, one of the following option buttons should be selected:

AND

The inputs to the advanced logical function will be logically ANDed to generate the output bit.

OR

The inputs to the advanced logical function will be logically ORed to generate the output bit.

Voting - Number

The inputs to the advanced logical function will undergo a majority voting function where the specified Number of inputs must be true in order to have an output bit that is true.

Under Inputs, the following buttons should be used to select the inputs for the advanced logical function:

Add

The Add button is used to add the required alarm and status information as inputs (bits) to the advanced logical function.

Remove

The Remove button is used to remove unwanted alarm and status information inputs (bits) from the advanced logical function.

The Description text box can be used to include an optional description of the advanced logical function.

Parent topic: [VibroSmart VSV30x logical functions](#)

VibroSmart VSV30x outputs

The VibroSmart VSV30x provides relay outputs and analog outputs that can be driven using information and signals from the module.

Relay outputs

For a VSV30x module, there are two single-pole double-throw (SPDT) relays available per module.

Each relay can be configured as either Normally De-energized (NDE) or Normally Energized (NE), and as Latched (or not).

Note:

If safety constraints have been enabled for a VSV30x module (that is, Apply Safety Constraints has been selected at the module node level), the VSV30x's relays must be configured as Normally Energized (NE) and as Latched in order to pass the consistency check.

Analog outputs

For a VSV30x module, there are two analog outputs available per module.

The analog outputs can be configured as for operation as either 4-20 mA (DC) or $5 V_{PEA}$ outputs (AC). However, both of the analog outputs must be configured to operate in the same mode (AC or DC).

- [VibroSmart VSV30x relay output parameters](#)
A VibroSmart DMSs relay output has parameters that must be configured in the module's configuration tree (Hardware view).
- [VibroSmart VSV30x analog output parameters](#)
A VibroSmart VSV30x module's analog outputs have parameters that must be configured in the module's configuration tree (Hardware view).

Parent topic: [VibroSmart VSV30x parameters](#)

VibroSmart VSV30x relay output parameters

A VibroSmart DMSs relay output has parameters that must be configured in the module's configuration tree (Hardware view).

To configure the parameters for a relay output, click the  relay icon in the Hardware view window:

Parameters for **Relay Relay 1**

VibroSmart Measurement VibroSmart VSV300 **Relay 1**

Name: Relay 1 State: Enabled

Relay Id: 1

Relay Input: ...

☐ Normally De-energized (NDE) ☒ Normally Energized (NE)

Latched: ☐

Description:

Relay output parameters for a VSV30x module

Name

The name of the relay output, for example "Relay 1".

State

The relay output can be either Enabled or Disabled.

Relay Id

An internal identifier for the relay output, used by VibroSight.

For most VibroSmart DMS modules, the Relay Id must be in the range 1 to 2 (that is, there are typically two relays per module).

Relay Input

Opens the Relay Input dialog box which is used to select the local alarm or status information or logical function output to use as the input to drive the relay.

Normally De-energized (NDE) / Normally Energized (NE)

The Normally De-energized (NDE) and the Normally Energized (NE) option buttons are mutually exclusive controls that are used to configure the relationship between the control input to the relay's coil and the operation (tripping) of the relay.

Select Normally De-energized (NDE) to configure the relay as energised to trip so that:

- A low (logical 0') on the relay's input leaves the relay de-energised, indicating a normal condition.
- A high (logical 1') on the relay's input energises the relay, indicating an alarm condition.

Select Normally Energized (NE) to configure the relay as de-energised to trip so that:

- A low (logical 0') on the relay's input de-energises the relay, indicating an alarm condition.
- A high (logical 1') on the relay's input leaves the relay energised, indicating a normal condition.

Note:

If safety constraints have been enabled for a VSV30x module (that is, Apply Safety Constraints has been selected at the module node level), the VSV30x's relays must be configured as Normally Energized (NE) and as Latched in order to pass the consistency check.

Latched

The Latched check box is used to configure the permanence of the tripping (operation) of the relay.

Select the Latched check box to configure the relay so that it will remain "tripped" (that is, in the state caused by the alarm condition) even if there is a change to the operating conditions that caused the alarm. A latched relay output can only be cleared

manually, using either the external alarm reset input signal (DSI AR) or a software command from VibroSight.

Clear the Latched check box to configure the relay so that it will remain “tripped” (that is, in the state caused by the alarm condition) for the duration of the operating conditions that cause the alarm only.

The Description text box can be used to include an optional description of the relay output function.

Parent topic: [VibroSmart VSV30x outputs](#)

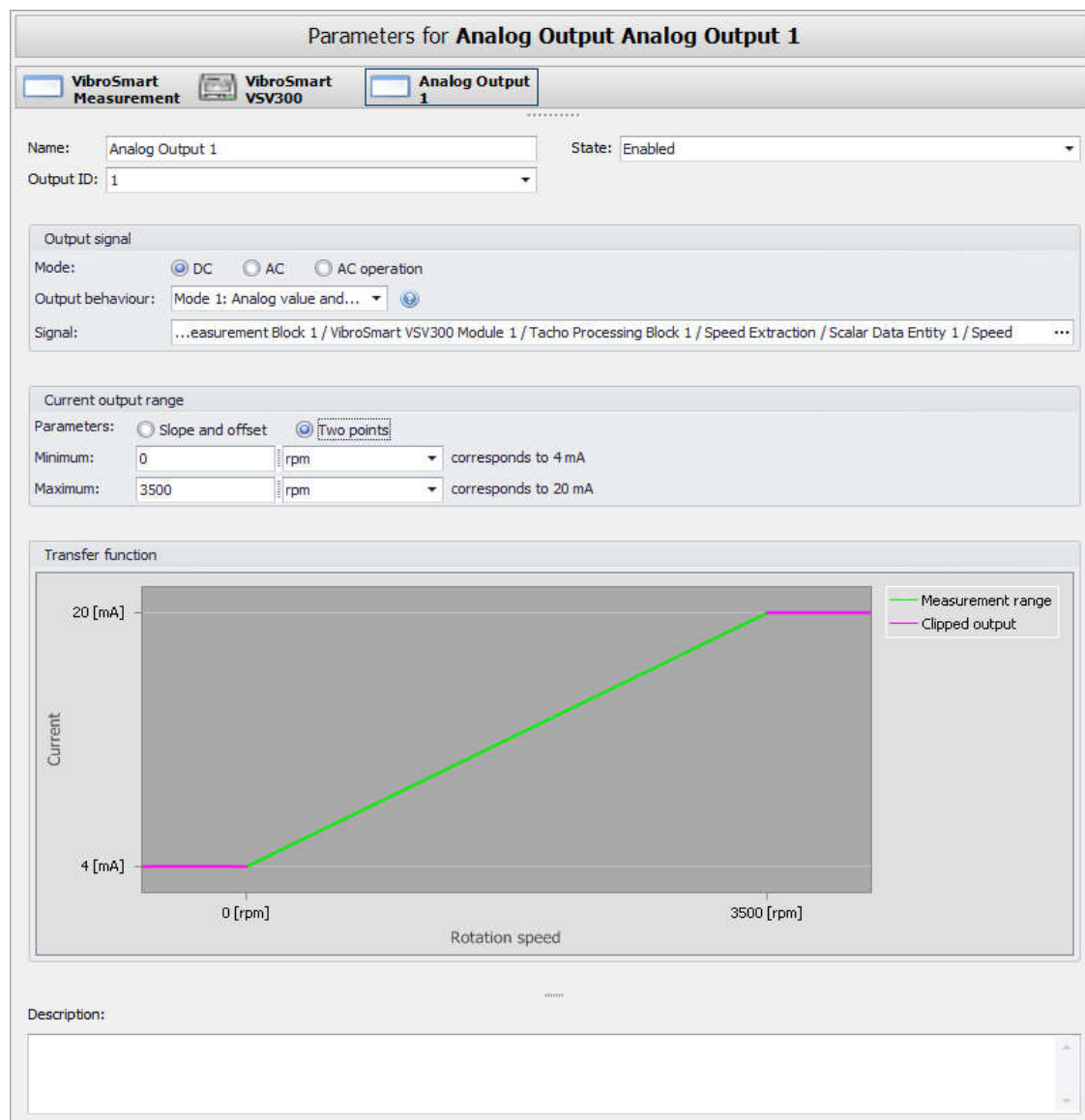
Related tasks

[Configuring a VibroSmart DMS relay output](#)

VibroSmart VSV30x analog output parameters

A VibroSmart VSV30x module’s analog outputs have parameters that must be configured in the module’s configuration tree (Hardware view).

To configure the parameters for an analog output, click the  analog output icon in the Hardware view window:



Parameters for Analog Output Analog Output 1

VibroSmart Measurement **VibroSmart VSV300** **Analog Output 1**

Name: State:

Output ID:

Output signal

Mode: ☒ DC ☐ AC ☐ AC operation

Output behaviour: 

Signal: 

Current output range

Parameters: ☐ Slope and offset ☒ Two points

Minimum: rpm corresponds to 4 mA

Maximum: rpm corresponds to 20 mA

Transfer function

Current vs. Rotation speed graph. The graph shows a linear relationship between Current (mA) and Rotation speed (rpm). The measurement range is indicated by a green line, and the clipped output is indicated by a magenta line.

Description:

Analog output parameters for a VSV30x module

Name

The name of the analog output, for example "Analog Output 1".

State

The analog output can be either Enabled or Disabled.

Output ID

An internal identifier for the analog output, used by VibroSight.

For VSV30x modules, this Output ID must be in the range 1 to 2 (that is, there can be up to two analog outputs per module).

Under Output signal, the Mode, Output behaviour and Signal are configured:

Mode

In DC mode, the output is a 4-20 mA signal (DC) and is suitable for quasi-static module signals, such as extracted data.

In AC mode, the output is a $5 V_{PEA}$ signal (AC) and is suitable for processed module signals, such as an AC filtered version of a dynamic input signal.

Note:

AC operation mode is no longer supported and should not be used.

Note:

For a VibroSmart DMS module, all of the analog outputs must be configured to operate in the same mode: DC or AC.

Output behaviour

When an analog output is configured as DC (Mode: DC), the Output behaviour control is used to configure the behaviour of the output. (This control is not available when an analog output is configured as AC (Mode: AC)).

In Mode 1: Measured value - quality checks embedded, during normal operation, the analog output is driven in the 4-20 mA signal range, proportional to the selected input signal. If the input signal goes outside the 4-20 mA signal range, the analog output is limited to 4 or 20 mA as appropriate.

In Mode 1, if the VSV30x module detects a problem (such as a sensor O₂ check fail, input signal saturation or other bad data quality indicators), then the analog output is driven to 2 mA in order to allow external third party systems such as a DCS or PLC to detect the problem.

Note:

Mode 1: Measured value - quality checks embedded is the default mode of operation.

In Mode 2: Measured value (without quality checks), during normal operation, the analog output is driven in a slightly wider 2-23 mA signal range, proportional to the selected input signal. If the input signal goes outside the 4-20 mA signal range, the analog output is not limited to 4 or 20 mA and is driven in the 2-23 mA signal range, proportional to the input signal.

In Mode 2, even if the VSV30x module detects a problem (such as a sensor O₂ check fail, input signal saturation or other bad data quality indicators), the analog output continues to be driven in the 2-23 mA signal range, proportional to the measured signal.

Note:

Mode 2: Measured value (without quality checks) is similar to the behaviour of the VM600 MPC4 machinery protection card.

In both Mode 1 and Mode 2, the analog outputs are driven to 0 mA when the operating mode of the VSV30x module is not the Operational mode (for example, Initialisation, Test, FailSafe, Programming, Stabilisation, Incompatibility).

Signal

This control is used to select the input signal for the analog output. Click the corresponding short browse button  to open the DC or AC Input dialog box and select the internal module signal to use as the analog output.

In DC mode, the input signal can be a quasi-static module signal, such as an extracted data entity.

In AC mode, the input signal can be a processed module signal, such as an AC filtered version of a dynamic input signal.

Note:

AC operation mode is no longer supported and should not be used.

Under output range, the Parameters, Slope and Offset are configured:

Note:

output range is Current output range when an analog output is configured as DC (Mode: DC) and is Voltage output range when an analog output is configured as AC (Mode: AC).

Parameters

Using Slope and offset, the relationship (transfer function) between the selected input signal and the analog output is defined using

the linear equation of a straight line: $y=mx+c$, where y is the analog output, m is the slope or gradient of the line (Slope), x is the input signal, and c is where the line crosses the y-axis or y-intercept (Offset).

Using Two points, the relationship (transfer function) between the selected input signal and the analog output is defined using two input signal values (Minimum, Maximum) that correspond to the limits of the analog output.

Note:

The limits of the analog output depend on the Mode: DC or AC (nominally 4-20 mA or $\pm 5 V_{PEA}$) and the Output behaviour:
Mode 1 or Mode 2 (4-20 or 2-23 mA).

Under Transfer function, the graph displayed automatically updates to show the relationship between the between the selected input signal and the analog output, depending on the setting of the various configuration parameters.

Under Description, an optional description of the analog output.

Parent topic: [VibroSmart VSV30x outputs](#)

Related tasks

[Configuring a VibroSmart DMS analog output](#)

Data logging rule parameters

The data logging rule parameters – options and requirements – depend on the type of data logging rule.

Time Based data logging rule parameters

Time Based data logging rules can be added to a data storage group. They are recommended when you want to log data at regular time intervals. These data logging rules can have conditions attached in order to log data depending on the value of other data entities, such as machine speed.

To configure the specific configuration parameters of the time based data logging rule, click the rule's icon  in the Data Storage view window:

Parameters for Time Base Logging Rule Time Base Logging Rule 1

☐ Data Storage Folder 1 ☐ Data Storage Group 1 ☒ Time Base Logging Rule

Name: Time Base Logging Rule 1 Rule State: Enabled

Logging Rate: 1 Minutes

☐ Condition:

☐ Time Delay: 1 Seconds ☐ Timeout: 1 Hours

☐ Pre Logging: 0 Seconds ☐ Post Logging: 0 Seconds

Description:

Time Based data logging rule parameters

Name

The name of the data logging rule, for example " as Turbine 1 – hourly data log".

Rule State

This can be used to temporarily enable or disable the data logging rule. Unused or unwanted data logging rules can be permanently deleted (right-click on the data logging rule in the Data Storage view and click Delete).

Logging Rate

Defines the rate at which the time base logging rule will log data. Type the number and then select the units. For example, if 10 minutes is defined, then all of the data entities associated with this data logging rule will be logged to the database once every ten minutes.

Condition

Allows data conditions to be added to the data logging rule. For example, the data logging could be conditional based on the speed of the machine.

Time Delay

Defines a time delay to be used with the Condition. For example, if 1 minute is defined, then the condition must be valid for at least one minute before the data logging will start. This parameter should be used to avoid glitches or noise falsely triggering a data logging rule. This parameter is only available when Condition is selected.

Timeout

Defines a timeout to be used with the Condition. For example, if 1 hour is defined, then if the condition is still valid after one hour, the data logging will stop. This parameter should be used to avoid excessive data being collected and taking too much space in your database. This parameter is only available when Condition is selected.

Pre Logging

Reserved for future use. This parameter is only available when Condition is selected.

Post Logging

Reserved for future use. This parameter is only available when Condition is selected.

Description

An (optional) description of the logging rule.

Related tasks

[Adding data logging rules to a data storage group](#)

Value Based data logging rule parameters

Value Based data logging rules can be added to a data storage group. They are recommended when you want to log more data depending on the value or change in value of a particular data entity, for example, during run-ups and/or coast-downs. These data logging rules can have conditions attached in order to log data depending on the value of other data entities, such as machine speed.

To configure the specific configuration parameters of the value based data logging rule, click the rule's icon  in the Data Storage view window:

Parameters for **Value Based Logging Rule** Value Based Logging Rule 1

☐ Data Storage Folder 1 ☐ Data Storage Group 1 ☒ Value Based Logging Rule

Name: Value Based Logging Rule 1 Rule State: Enabled

Data Entity: Data Entity Mode: Physical/Value

Delta Value: 0

☐ Condition:

Time Delay: 1 Seconds Timeout: 1 Hours

Description:

Value Based data logging rule parameters

Name

The name of the data logging rule, for example " as Turbine 1 – run-ups".

Rule State

This can be used to temporarily enable or disable the data logging rule. Unused or unwanted data logging rules can be permanently deleted (right-click on the data logging rule in the Data Storage view and click Delete).

Data Entity

Defines the data entity on which the data logging rule will make its value based decision. Only data entities that have been added to the data storage group are included in this list. The unit available in the Delta Value parameter will change depending on this selection.

Mode

Select Physical Value or Percent FSD. The unit available in the Delta Value parameter will change depending on this selection.

Delta Value

Defines the value to be used for value based data. Type the number and then select the units. For example, to capture data during a run-up, a tachometer could be selected for the data entity and a delta value of 10 rpm could be selected. Then all of the data entities associated with this data logging rule will be logged to the database once every time the RPM changes by 10.

Condition

Allows data conditions to be added to the data logging rule. For example, the data logging could be conditional on the displacement observed for the machine.

Time Delay

Defines a time delay to be used with the Condition. For example, if 1 minute is defined, then the condition must be valid for at least one minute before the data logging will start. This parameter should be used to avoid glitches or noise falsely triggering a data logging rule. This parameter is only available when Condition is selected.

Timeout

Defines a timeout to be used with the Condition. For example, if 1 hour is defined, then if the condition is still valid after one hour, the data logging will stop. This parameter should be used to avoid excessive data being collected and taking too much space in your database. This parameter is only available when Condition is selected.

Description

An (optional) description of the logging rule.

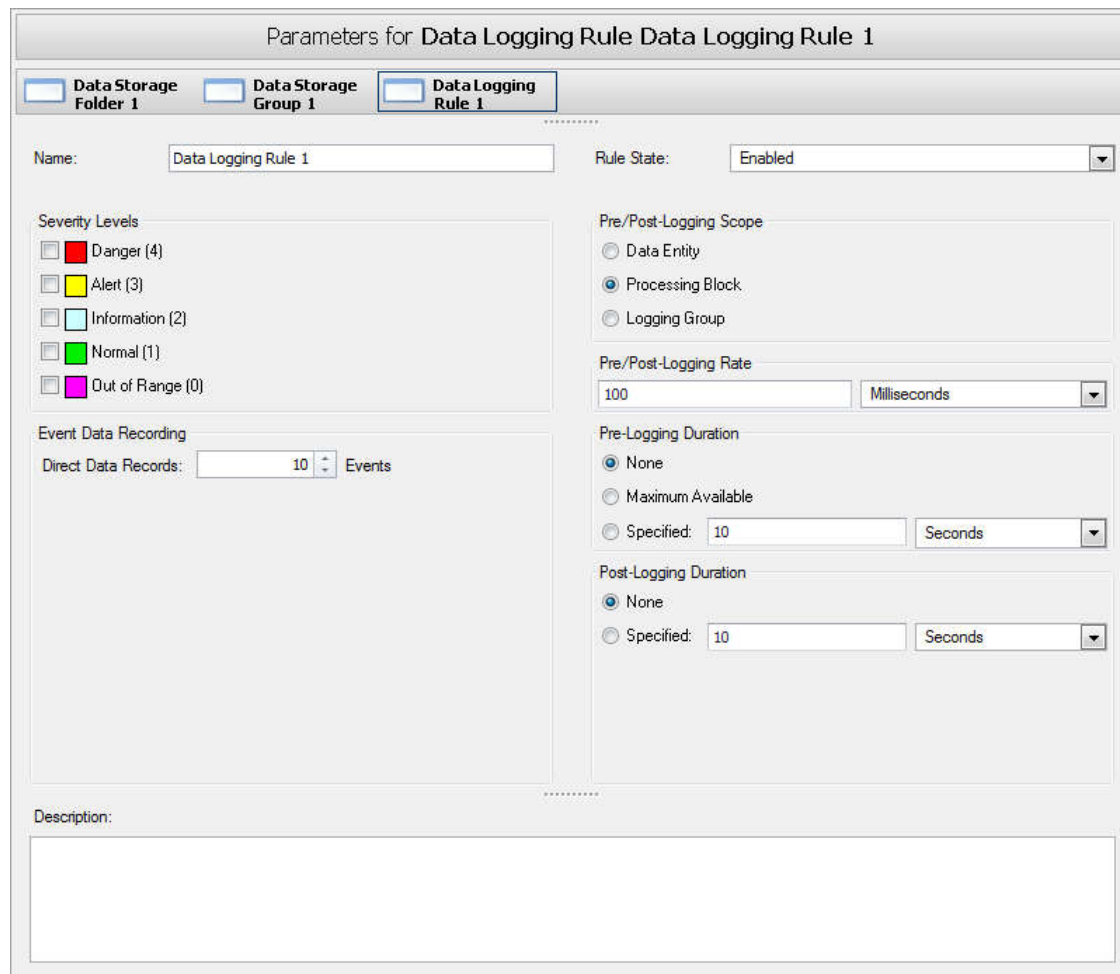
Related tasks

[Adding data logging rules to a data storage group](#)

Alarm Event Based data logging rule parameters

Alarm Event Based data logging rules can be added to a data storage group. They are recommended when you want to log more data depending on the severity level or levels (due to alarm events) associated with a particular data entity.

To configure the specific configuration parameters of the alarm event based data logging rule, click the rule's icon  in the Data Storage view window:



Parameters for **Data Logging Rule Data Logging Rule 1**

Data Storage Folder 1 **Data Storage Group 1** **Data Logging Rule 1**

Name: Rule State:

Severity Levels

☐  Danger (4)
☐  Alert (3)
☐  Information (2)
☐  Normal (1)
☐  Out of Range (0)

Event Data Recording

Direct Data Records: Events

Pre/Post-Logging Scope

☐ Data Entity
☒ Processing Block
☐ Logging Group

Pre/Post-Logging Rate

Pre-Logging Duration

☒ None
☐ Maximum Available
☐ Specified:

Post-Logging Duration

☒ None
☐ Specified:

Description:

Alarm Event Based data logging rule parameters

Name

The name of the data logging rule, for example " as Turbine 1 – alarms".

Rule State

This can be used to temporarily enable or disable the data logging rule. Unused or unwanted data logging rules can be permanently deleted (right-click on the data logging rule in the Data Storage view and click Delete).

Severity Levels

Select the severity level or levels of the data entities in the data entities folder of the data storage group containing this data logging rule that are required to trigger this data logging rule.

Event Data Recording / Direct Data Records

When an Alarm Event Based data logging rule is used to trigger the acquisition of direct data (digitised waveform) in the direct measurement mode, Event Data Recording and Direct Data Records are used to specify the maximum number of alarm events for which pre-event direct data should be saved.

Note:

Event Data Recording and Direct Data Records are not required to be configured when an Alarm Event Based data logging rule is being used to simply log measurement data.

Pre/Post-Logging Scope

Select the scope of the data logging rule, that is, the data entities to log measurement data for: only the data entity that triggered this data logging rule (Data Entity), the data entities in the same processing block as the data entity that triggered this data logging rule (Processing Block), or all of the data entities in the data entities folder of the data storage group containing this data logging rule (Data Entity).

Pre/Post-Logging Rate

Specify the data logging rate to use for pre-alarm event and post-alarm event measurement data.

Pre-Logging Duration

Specify the time period leading up to the alarm event for which pre-event measurement data should be recorded.

Post-Logging Duration

Specify the time period after the alarm event for which post-event measurement data should be recorded.

Description

An (optional) description of the logging rule.

Related tasks

[Adding data logging rules to a data storage group](#)

Events logging rule parameters

The events logging rule parameters – options and requirements – depend on the events logging rule.

- [Severity and Level Based events logging rule parameters](#)

Severity and Level Based events logging rules can be added to an events storage group, and is recommended when you want to log events related to the monitoring system. For example, in order to log hardware information such as the status of VM600 XMx16 cards and/or VibroSmart devices, and/or software information such as the status of the VibroSight Server including hard disk drive space and time reference information. Severity and Level Based events logging rules can also be used to log events related to the machinery being monitored, such as machine operating conditions and measurement data alarms. This events logging rule can have conditions attached in order to log events depending on the value of other data entities, such as machine speed.

Parent topic: [Configuration parameters](#)

Severity and Level Based events logging rule parameters

Severity and Level Based events logging rules can be added to an events storage group, and is recommended when you want to log events related to the monitoring system. For example, in order to log hardware information such as the status of VM600 XMx16 cards and/or VibroSmart devices, and/or software information such as the status of the VibroSight Server including hard disk drive space and time reference information. Severity and Level Based events logging rules can also be used to log events related to the machinery being monitored, such as machine operating conditions and measurement data alarms. This events logging rule can have conditions attached in order to log events depending on the value of other data entities, such as machine speed.

To configure the specific configuration parameters of the severity and alarm based events logging rule, click the rule's icon  in the Events Storage view window:

Parameters for **Severity and Level Based Logging Rule Severity and Level Based Logging Rule 1**

☐ Data Storage Folder 1 ☐ Events Storage Group ☒ Severity and Level Based

Name: Rule State:

Severity Level (Alarm Events)

- ☐  Danger (4)
- ☐  Alert (3)
- ☐  Information (2)
- ☐  Normal (1)
- ☐  Out of Range (0)

Event Level (System Generated Events)

- ☐  Error
- ☐  Warning
- ☐  Information

☐ Condition:

Description:

Severity and Level Based events logging rule parameters

Name

The name of the events logging rule, for example " as Turbine 1 – system events log".

Rule State

This can be used to temporarily enable or disable the events logging rule. Unused or unwanted events logging rules can be permanently deleted (right-click on the events logging rule in the Events Storage view and click Delete).

Severity Level (Alarm Events)

Select the severity level or levels for the alarm events related to the events in the event entities folder of the events storage group containing this logging rule that are required to trigger this events logging rule.

Event Level (System generated Events)

Select the event level or levels for the system generated events related to the events in the event entities folder of the events storage group containing this logging rule that are required to trigger this events logging rule.

Condition

Allows data conditions to be added to the events logging rule. For example, the events logging could be conditional based on the speed of the machine.

Description

An (optional) description of the logging rule.

Parent topic: [Events logging rule parameters](#)

Related tasks

[Adding events logging rules to an events storage group](#)

An introduction to VibroSight Event Viewer

The VibroSight software uses a client-server architecture to distribute the functional requirements of the system across several software modules and  VibroSight Event Viewer is used to log and view the events stored in VibroSight data repositories. Such events may have been created automatically by the system or defined by users.

For example, VibroSight Event Viewer can provide users with a comprehensive system overview of alarms, which may have been triggered by factors such as excessive vibration levels.

Working with events

The VibroSight software and VibroSight-compatible hardware performs limit checks for each configured output at every processing cycle. Any exceedences, or amplitude changes in excess of user-defined limits, are logged into the server's database as *events*.

You can view events in the separate Event Viewer application (Start > All Programs > Meggitt > VibroSight > Event Viewer).

Starting VibroSight Event Viewer

There are several ways in which VibroSight Event Viewer can be started.

For example:

- From a Windows Explorer, by double-clicking a VibroSight Event Viewer project file (*.vsevtvi).
- From a shortcut to the VibroSight Event Viewer executable program file ( VibroSightEventViewer.exe) on the Windows desktop.
- From the Windows Start menu, by clicking the Start button, then clicking All Programs > Meggitt > VibroSight > Event Viewer.
- From the VibroSight Welcome Center, by clicking Event Viewer.

Starting VibroSight Event Viewer by double-clicking a VibroSight Event Viewer project file (*.vsevtvi) in a Windows Explorer will start VibroSight Event Viewer, and automatically open the project and connect to the data source. This effectively restores the VibroSight Event Viewer project to the state it was in when it was last used and saved, with the same settings.

The other ways of starting VibroSight Event Viewer listed above will not open a project file. This allows a new VibroSight Event Viewer project to be created or an existing project to be opened.

Note:

If VibroSight Event Viewer is minimized to the Windows notification area rather than exited (closed), a pop-up message for each new event is displayed in the Windows notification area (bottom right of the Windows Taskbar). Clicking on a VibroSight Event Viewer pop-up message will jump to (display) the main VibroSight Event Viewer window.

Related reference[Default VibroSight files](#)

Sorting the Event List

You can sort the events listed on the Event Viewer window in ascending or descending order by any of the columns shown.

By default, events are listed in ascending date/time order, that is, new events appear at the bottom of the list.

To change the sort order:

1. Click the title box of any column.

Events are sorted according the type of information in the column: alphabetical order for text fields, numerical order for numbers, or date/time order.

A small arrow appears in the title box to indicate the current sort order:

- ▼ Descending order
 - ▲ Ascending order
2. Optionally, click the title box again to reverse the sort order, or click the title box of any other column.

Related concepts[Events](#)**Related reference**[The Event Viewer window](#)[The Event Viewer Toolbar](#)[The Event Detail Window](#)[The New User-Defined Event Window](#)

Creating a User-Defined Event

You can create manual events in the system.

To create a new user-defined event:

1. Optionally, to use the attributes of an existing event for the new event, select an event in the Event Viewer window.
2. Either:
 - Click the New User-Defined Event button  on the toolbar.
 - Choose File > New.

The New User-Defined Event window is displayed.

3. Select your user ID from the Created by list of the 10 most recently used user IDs. If your user ID is not listed, type it into the text box directly.
4. Select the Severity level to assign to the event. For example, if the new event is simply intended as information for other operators, choose “Information” from the list.

5. Select the Date and Time to assign to the new event. The default is to use the current date and time. Alternatively, choose Time of Selected Event to use the same date and time as the event you selected on the Event Viewer window, or User-defined Date and Time to manually specify the date and time.
6. Choose the Server to store the event on.
7. Optionally, choose a point in the server configuration to associate with the event. Choose Same point as selected event to use the same point as the event you selected on the Event Viewer window. Alternatively, choose User-selected point and click Browse to choose a point from the server configuration.
8. Optionally, type a comment about the event in the Comments area at the bottom of the window. Any text you type is stored with the event in the server database.
9. Click OK.

The new user-defined event is added to the bottom of the list of events on the Event Viewer window.

Related reference

[The New User-Defined Event Window](#)

[The Event Viewer window](#)

Exporting the Event List

You can export all events listed in the Event Viewer window to a Comma Separated Value (CSV) format file. You can then, for example, archive the data or subsequently import the contents of the file into another application, such as a spreadsheet, for further analysis.

All attributes of the event are exported, regardless of whether they are currently displayed in the window.

To export the event list:

1. Make sure the Event Viewer window is active (for example, click on the window's title bar).
2. Choose File > Export.
3. Browse to select the output folder and type the name of the file to export to.
4. Click Save.

Related concepts

[Events](#)

Related reference

[The Event Viewer window](#)

[The Event Viewer Toolbar](#)

[The Event Detail Window](#)

[The New User-Defined Event Window](#)

Printing the Event List

You can generate a printable report containing all events listed in the Event Viewer window.

Attributes of the event are only printed if they are currently displayed in the Event Viewer window.

To print the event list:

1. Make sure the Event Viewer window is active (for example, click on the window's title bar).

2. Choose File > Print, or click the Print icon  on VibroSight Vision's Standard toolbar.

A printable report in Rich Text Format (RTF) format is generated and opened in MS-Word or any other compatible program. Use the program's menus to print the document.

Related concepts

[Events](#)

Related reference

[The Event Viewer window](#)

[The Event Viewer Toolbar](#)

[The Event Detail Window](#)

[The New User-Defined Event Window](#)

Filtering the Event List

You can filter the events displayed in the Event list to display only events of interest to you.

Note: The Visualization Filter only controls which events are displayed in the list. Use an Events Filter to control which events are actually imported from the server.

To visually filter events:

1. Click the Visualisation Filter icon  on the toolbar.
2. Click any of the tabs:
 - o Date and Time

Choose to display events linked to live data, historical data, or both. You can also choose to display events occurring between specific dates and times, or to limit the display to a specific number of events.

- o Event Type

Choose to display hardware-related, machine-related, or user-defined events.

- o Acknowledgement State

Display events that have been acknowledged, not yet acknowledged, or all events.

- o Severity

Display events according to their severity: fatal errors, errors, information messages, or warnings.

- o Message

Displays a structured view of all event types. You can select specific event types to display.

3. Click OK to apply the filter definition.

The events listed are updated accordingly.

Related concepts[Events](#)**Related reference**[The Event Viewer window](#)[The Event Viewer Toolbar](#)[The Event Detail Window](#)[The New User-Defined Event Window](#)

Acknowledging Single Events

New events are initially flagged as “unacknowledged” until the operator manually acknowledges having read their contents.

To acknowledge any single event:

1. Select the event in the Event Viewer window.
2. Click the Acknowledge button  on the Event Viewer toolbar.

Depending on the filter that is being applied, the acknowledged event may be removed from the event list.

The check box in the Acknowledge column of the event list is selected to indicate that the event has been acknowledged.

Alternatively, double-click an event to display the Event Detail window. On this window, you can acknowledge the event, as well as viewing more details of the event and adding an optional comment to the event.

Related concepts[Events](#)**Related reference**[The Event Viewer window](#)[The Event Viewer Toolbar](#)[The Event Detail Window](#)[The New User-Defined Event Window](#)

Acknowledging All Events

New events are initially flagged as “unacknowledged” until the operator manually acknowledges having read their contents.

To acknowledge all unacknowledged events:

1. Right-click on any event in the Event Viewer window.
2. Choose Acknowledge all from the contextual menu that appears.

Depending on the filter that is being applied, the acknowledged events may be removed from the event list.

All check boxes in the Acknowledge column of the event list are selected to indicate that the events have been acknowledged.

Related concepts[Events](#)**Related reference**[The Event Viewer window](#)[The Event Viewer Toolbar](#)[The Event Detail Window](#)[The New User-Defined Event Window](#)

Displaying Event Details

You can display detailed information about any event listed on the Event Viewer window or displayed on the Data Browser window.

To display event details:

1. Either:
 - On the Event Viewer window, double-click an event in the list (or right-click on the event and choose Open Detail).
 - On the Data Browser window, double-click an event block  (or right-click on the event block and choose Open).

The Event Details window is displayed.

2. Optionally, add a comment to the event, or acknowledge the event.
3. Click Close.

Customizing the Event List

You can customize the Event list by adding columns to and removing columns from the list of events.

To customize the list of events:

1. Right-click on any of the column titles in the Event Viewer window and select Choose columns from the contextual menu that appears.

The Choose Columns window appears.



The Choose Columns Window

2. By default, all available columns are displayed. Clear a column's check box to hide the

column on the Event Viewer window. Select a column's check box to display the column again. Columns are hidden or displayed immediately.

3. When finished, close the window by clicking the Close button  in the top right hand corner.

Related concepts

[Events](#)

Related reference

[The Event Viewer window](#)

[The Event Viewer Toolbar](#)

[The Event Detail Window](#)

[The New User-Defined Event Window](#)

VibroSight Event Viewer menus

- [VibroSight Event Viewer File menu](#)

The VibroSight Event Viewer File menu contains options allowing you to manage VibroSight Event Viewer projects.

- [VibroSight Event Viewer Tools menu](#)

The VibroSight Event Viewer Tools menu allows you to modify optional VibroSight Event Viewer settings.

- [VibroSight Event Viewer Help menu](#)

The VibroSight Event Viewer help menu allows you to access help, save diagnostic information from a VibroSight system and display information about your version of VibroSight software.

VibroSight Event Viewer File menu

The VibroSight Event Viewer File menu contains options allowing you to manage VibroSight Event Viewer projects.

The following commands are available:

- New

Displays the first page of the Data Sources Selection dialog box (wizard), which allows a new VibroSight Event Viewer project to be created.

- Open

Opens an existing VibroSight Event Viewer project. If there is an open project, it is closed before the new project is opened.

- Save

Saves the open VibroSight Event Viewer project.

- Save As

Saves the open VibroSight Event Viewer project to a different location or with a different file name.

- Close

Closes the open VibroSight Event Viewer project. If the project has unsaved changes, you are prompted to save the changes.

- Exit

Exits (closes) VibroSight Event Viewer. If an open project has unsaved changes, you are prompted to save the changes before VibroSight Event Viewer closes.

Parent topic: [VibroSight Event Viewer menus](#)

VibroSight Event Viewer Tools menu

The VibroSight Event Viewer Tools menu allows you to modify optional VibroSight Event Viewer settings.

The following commands are available:

- Options

Displays the Options window containing VibroSight Event Viewer program options.

Parent topic: [VibroSight Event Viewer menus](#)

VibroSight Event Viewer Help menu

The VibroSight Event Viewer Help menu allows you to access help, save diagnostic information from a VibroSight system and display information about your version of VibroSight software.

The following commands are available:

- Contents

Displays the  VibroSight help that comes with the VibroSight software.

- Save diagnostic information

Allows diagnostic information for the VibroSight system, including log files (*.xlog) for all of the VibroSight software modules, system information and event information to be saved to a file. This information about a VibroSight system can be useful to Meggitt Sensing Systems customer support when investigating certain issues.

- About VibroSight ...

Displays information about the version of VibroSight software being used.

Parent topic: [VibroSight Event Viewer menus](#)

VibroSight Event Viewer toolbars

The VibroSight Event Viewer includes a number of global and local toolbars.

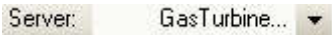
- [The Event Viewer Toolbar](#)

The Event Viewer toolbar allows you to work with the events listed in the Event Viewer window.

The Event Viewer Toolbar

The Event Viewer toolbar allows you to work with the events listed in the Event Viewer window.

The following buttons appear in the Event Viewer toolbar:

Button	Description
	Server
	Choose the VibroSight server from which to receive events.
	New User-Defined Event
	Displays the New User-Defined Event window allowing you to manually create an event.
	Delete Event
	Deletes the currently selected event.
	Importation Filter
	Defines filtering parameters to apply when events are imported. Events not matching the filter criteria are not imported.
	Acknowledge Event
	Acknowledges the event selected in the list of events. The acknowledged check box is selected for the event. The event is logged with the user name that appears in the Acknowledged By list of users. If no name appears in the list, a window appears with a list of users: choose the user name to associate with the event and click OK.
	Acknowledged By
	Choose a name from this list to display only events acknowledged by the selected user.
	The 10 most recently used user names are listed.
	To add a new name to the list, type a user name directly into the text box.
	Right-click on the list and choose Delete to delete the currently selected user name from the list, or choose Clear to remove all user names from the list.

Parent topic: [VibroSight Event Viewer toolbars](#)

Related concepts[Events](#)**Related tasks**[Sorting the Event List](#)[Customizing the Event List](#)[Filtering the Event List](#)[Acknowledging Single Events](#)[Acknowledging All Events](#)[Printing the Event List](#)[Exporting the Event List](#)

VibroSight Event Viewer windows

- [The New User-Defined Event Window](#)

The New User-Defined Event window allows you to manually create an event in the server's database.

- [VibroSight Event Viewer Options window](#)

The VibroSight Event Viewer Options window allows the general options that are user configurable to be displayed and modified.

The New User-Defined Event Window

The New User-Defined Event window allows you to manually create an event in the server's database.

Created by

Choose your user name from the list of the 10 most recently used user names. If your user name is not listed, you can type it directly into the text box.

Right-click on the list and choose Delete to delete the currently selected user name from the list, or choose Clear to remove all user names from the list.

Severity

Choose the severity level to assign to the new event:

- Fatal
- Error
- Warning
- Information
- Debug

Note:

The labels that appear in this list are customizable and may be different from these labels.

Date and Time

User-defined events must have an associated date and time.

Choose one of the following options:

- **Current Date and Time.** This is the default option. The event is given the date and time of its creation in the database, that is, when you click OK to save the event.
- **Time of Selected Event.** This option is only available when you click the New User-Defined Event button  on the toolbar of either the Event Viewer or Event Detail window *and* there is only a single event selected in the list. The new event is given the same date and time as the selected event.
- **User-defined Date and Time.** Select this option to manually specify the date and time to associate with the event.

Attached To

User-defined events can be attached to any point in a chosen server's configuration.

Select a Server from the list of servers to which the VibroSight Vision is currently connected. The new event will be stored in this server's database.

Choose the point to associate the event with:

- **None.** This is the default option if the Same point as selected Event option is not available. The event is not attached to any specific point.
- **Same point as selected Event.** This is the default option if available. It is only available when you click the New User-Defined Event button  on the toolbar of either the Event Viewer or Event Detail window *and* there is a single event selected in the list. The new event is assigned to the same point as the selected source event.
- **User-selected point.** Select this option to manually select a point in the configuration. Click Browse to display the Configuration window, select the point to associate with the new event, and click OK.

When you select either of the latter two options, the attributes of the source event, which will be copied to the new event, appear in the attributes section in the middle of the window. These attributes are described for the Event Detail window.

Comments

Type an optional comment to be saved in the database together with the event details. You can edit existing comments regardless of whether the event is been acknowledged or still unacknowledged.

Click Save to save the comment to the database.

Click Discard to discard any changes you have made to the comment and restore the original comment.

Parent topic: [VibroSight Event Viewer windows](#)

Related concepts

[Events](#)

Related tasks

[Sorting the Event List](#)

[Customizing the Event List](#)

[Filtering the Event List](#)

[Acknowledging Single Events](#)

[Acknowledging All Events](#)

[Printing the Event List](#)

[Exporting the Event List](#)

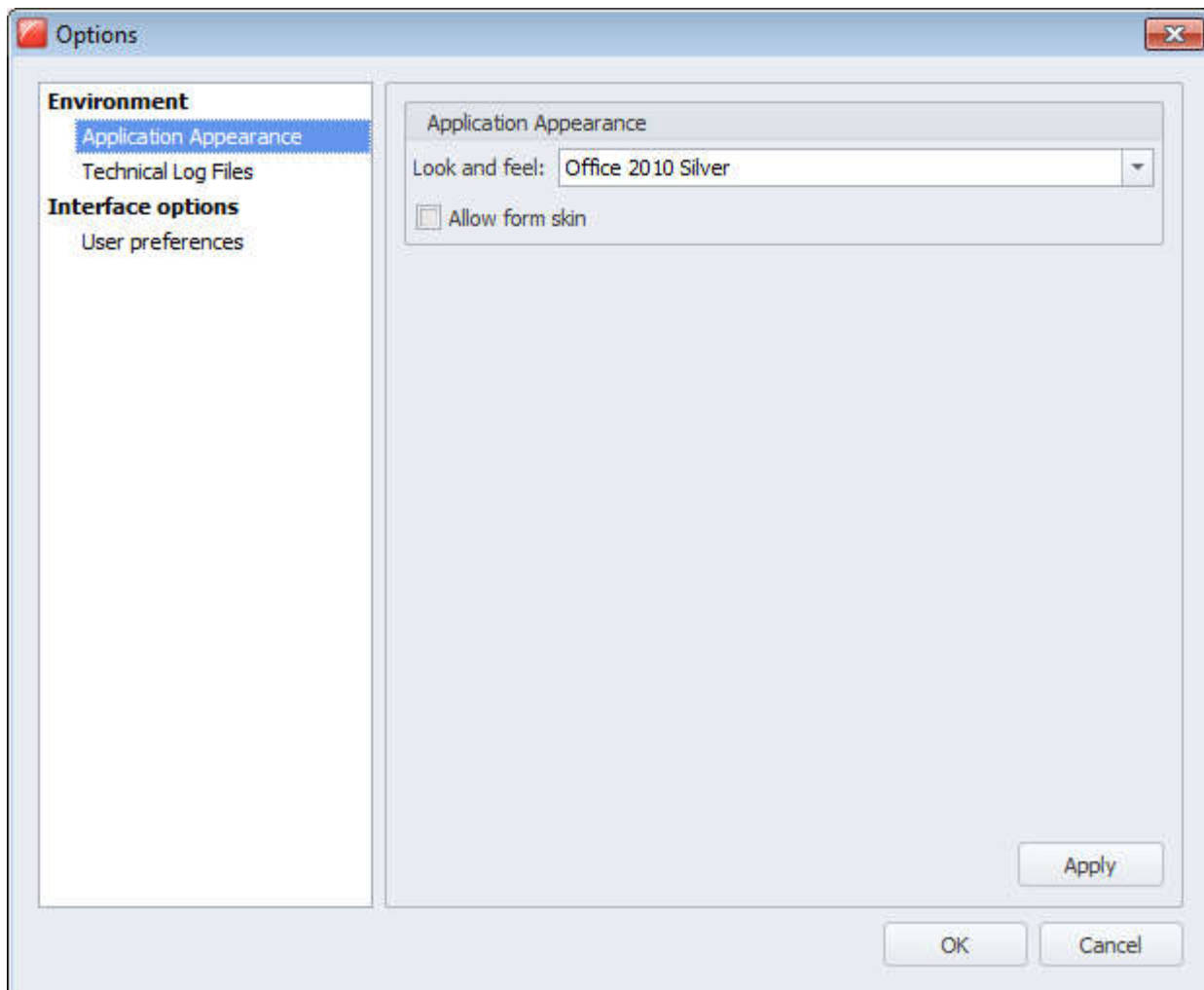
[Creating a User-Defined Event](#)

VibroSight Event Viewer Options window

The VibroSight Event Viewer Options window allows the general options that are user configurable to be displayed and modified.

For VibroSight Event Viewer, these general options include timestamps, channel identification (measurement identifier paths), technical log file settings and default plots settings.

As the figure below shows, the VibroSight Vision Options window consists of two panes: the left pane organises the options by function and allows a particular option to be selected, while the right pane displays the settings for the option selected in the left pane.



VibroSight Event Viewer Options window

Environment

Application appearance

Use these controls to change the default appearance of the VibroSight Event Viewer software.

Technical log Files

Use the Log file name control to navigate the folders on the computer and select in which folder and under what file name to save the VibroSight Event Viewer log file (*.xlog).
however, the it is recommended that the default folder and file are used.

Use the Log level option buttons to select the level of detail that is written to the VibroSight Event Viewer log file:

- Off (no information is written, the least processing overhead)
- Fatal
- Error
- Warning
- Information

- Debug
- Trace (lots of information is written, the most processing overhead).

Interface options

General

Under User preferences, use the Closing behaviour control to select the default VibroSight Event Viewer behaviour when it is closed (exited): Ask every time (that is, prompt the user before closing), Exit application or Minimise to task bar (that is, don't close, just minimise).

Under Popup duration, use the time (seconds) control to select the default time for which a VibroSight Event Viewer pop-up message/window identifier is displayed.

Parent topic: [VibroSight Event Viewer windows](#)

VibroSight Mimic concepts

The following topics introduce some VibroSight Mimic concepts and terminology.

- [An introduction to VibroSight Mimic](#)

The VibroSight software uses a client-server architecture to distribute the functional requirements of the system across several software modules and VibroSight Mimic is the graphical tool (software client) used to provide hierarchical views of the machinery being monitored and display live measurement data directly from VM600 XMx16 cards.

An introduction to VibroSight Mimic

The VibroSight software uses a client-server architecture to distribute the functional requirements of the system across several software modules and  VibroSight Mimic is the graphical tool (software client) used to provide hierarchical views of the machinery being monitored and display live measurement data directly from VM600 XMx16 cards.

VibroSight Mimic allows different hierarchical views of the machinery being monitored to be created and customized according to the user's requirements. A VibroSight Mimic consists of a variety of predefined objects, each associated with specific items of data. For example, one object might display the current value of an item of measurement data, while another object changes colour whenever a value exceeds a predefined alarm limit.

A VibroSight Mimic is created by the user from a library of different objects that are combined using a simple to use drag-and drop interface in order to create the required hierarchical views.

Parent topic: [VibroSight Mimic concepts](#)

Starting VibroSight Mimic

There are several ways in which VibroSight Mimic can be started.

For example:

- From a Windows Explorer, by double-clicking a VibroSight Mimic project file (*.vsmimic).
- From a shortcut to the VibroSight Mimic executable program file ( VibroSightMimic.exe) on the Windows desktop.
- From the Windows Start menu, by clicking the Start button, then clicking All Programs > Meggitt > VibroSight > Mimic.

Starting VibroSight Mimic by double-clicking a VibroSight Mimic project file (*.vsmimic) in a Windows Explorer will start VibroSight Mimic, and automatically open the project and connect to the data source. This effectively restores the VibroSight Mimic project to the state it was in when it was last used and saved, with the same layout and settings.

The other ways of starting VibroSight Mimic listed above will not open a project file. This allows a new VibroSight Mimic project to be created or an existing project to be opened.

Related reference

[Default VibroSight files](#)

VibroSight Mimic menus

- [VibroSight Mimic File menu](#)
The VibroSight Mimic File menu allows the management of VibroSight Mimic projects.
- [VibroSight Mimic Edit menu](#)
The VibroSight Mimic Edit menu supports the modification of objects in VibroSight Mimic projects.
- [VibroSight Mimic View menu](#)
The VibroSight Mimic View menu allows the management of the user interface windows provided by VibroSight Mimic.
- [VibroSight Mimic Tools menu](#)
The VibroSight Mimic Tools menu allows configuration of options and preferences local to VibroSight Mimic (and some common across VibroSight).
- [VibroSight Mimic Window menu](#)
The VibroSight Mimic Window menu allows the management of the Mimic documents in the main working window of VibroSight Mimic.
- [VibroSight Mimic Help menu](#)
The VibroSight Mimic Help menu allows you to access help, save diagnostic information from a VibroSight system and display information about the version of VibroSight software.

VibroSight Mimic File menu

The VibroSight Mimic File menu allows the management of VibroSight Mimic projects.

Note:

Any command that closes the currently opened project will prompt the user to save any changes (since the project was last saved) before the project is closed.

The following commands are available:

- New Project
Creates a new project by displaying the Data Sources Selection dialog box.
- Open Project
Opens an existing project by displaying the Open dialog box to select a project.
- Save Project
Saves the currently opened project using the current file name.
- Save Project As
Saves the currently opened project by displaying the Save as dialog box in order to allow a different file name to be used for the project. After a Save Project As operation, the currently opened project uses the new file name.
- Data Source Manager

Opens the Data Source Manager dialog box, which allows a different data source to be selected for the project (the current data source must be removed, then the new data source can be added).

- Close Project

Closes the currently opened project and returns to the VibroSight Mimic Home Page.

- New Mimic

Adds a new (empty) Mimic document to the project.

Note:

This command is only available when the Mimic project is in Edit Mode.

- Import

Allows a Mimic document or documents to be imported from an existing Mimic project.

Note:

This command is only available when the Mimic project is in Edit Mode.

- Print Preview

Opens the Print Preview window, which allows either the active plot or the active view to be previewed and printed.

- Print

Opens the Print dialog box, which allows either the active plot or the active view to be printed.

- Recent Projects

Opens a submenu that list the six most recently used projects. Clicking on a project will close the currently opened project and open the selected project.

- Exit

Closes the currently opened project and Exits VibroSight Mimic.

Parent topic: [VibroSight Mimic menus](#)

VibroSight Mimic Edit menu

The VibroSight Mimic Edit menu supports the modification of objects in VibroSight Mimic projects.

The following commands are available:

- Cut

Removes the currently selected objects from the Mimic document and copies them to the clipboard. Also available using the CTRL+X keyboard shortcut.

- Copy

Copies the currently selected object to the clipboard. Also available using the CTRL+C keyboard shortcut.

- Paste

Pastes the contents of the clipboard to the current location. Also available using the CTRL+V keyboard shortcut.

For example, these commands can be used to help create and edit the objects in a Mimic document.

Note:

If the Edit menu commands are unavailable (greyed out), check that suitable elements (nodes) have been selected in the Project Explorer window.

Parent topic: [VibroSight Mimic menus](#)

VibroSight Mimic View menu

The VibroSight Mimic View menu allows the management of the user interface windows provided by VibroSight Mimic.

The following commands are available:

- Hardware View

Displays the Hardware View window if it is currently hidden or closed and makes it the active window (setting the focus on it).

- Machinery View

Displays the Machinery View window if it is currently hidden or closed and makes it the active window (setting the focus on it).

- ToolBox

Displays the ToolBox window if it is currently hidden or closed and makes it the active window (setting the focus on it).

- Properties

Displays the Properties window if it is currently hidden or closed and makes it the active window (setting the focus on it).

- Full Screen

Maximizes the screen area given to the document windows (Mimics) contained in the project. This command is also available from the F11 keyboard shortcut, which switches the display

between maximum screen area for document windows (Mimics) and the default VibroSight Mimic project screen usage.

Parent topic: [VibroSight Mimic menus](#)

VibroSight Mimic Tools menu

The VibroSight Mimic Tools menu allows configuration of options and preferences local to VibroSight Mimic (and some common across VibroSight).

The following commands are available:

- Options

Displays the Options window that allows the management of the user configurable options for the VibroSight software. Options available include Environment variables.

- Unit Preferences

Displays the Unit Preferences window that allows the management of the unit preferences to be used throughout the VibroSight software. Imperial and Metric unit sets are available by default. However, unit sets can be copied, renamed, imported and exported, allowing unit preferences to be quickly customized to meet the needs of an application and shared between VibroSight installations.

Parent topic: [VibroSight Mimic menus](#)

VibroSight Mimic Window menu

The VibroSight Mimic Window menu allows the management of the Mimic documents in the main working window of VibroSight Mimic.

The following commands are available:

- (Name of) Mimic (one entry per Mimic document)

Displays the selected Mimic document in the main working window of VibroSight Mimic and makes it the active one (setting the focus on it).

Note:

This command is particularly useful when there are many Mimic documents as it removes the need to navigate the individual Mimic document tabs at the top of the main working window of VibroSight Mimic in order to jump to a particular Mimic document.

Parent topic: [VibroSight Mimic menus](#)

VibroSight Mimic Help menu

The VibroSight Mimic Help menu allows you to access help, save diagnostic information from a VibroSight system and display information about the version of VibroSight software.

The following commands are available:

- Contents

Displays the  VibroSight help that comes with the VibroSight software.

- Save diagnostic information

Allows diagnostic information for the VibroSight system, including log files (*.xlog) for all of the VibroSight software modules, system information and event information to be saved to a file. This information about a VibroSight system can be useful to Meggitt Sensing Systems customer support when investigating certain issues.

- About VibroSight ...

Displays information about the version of VibroSight software being used.

Parent topic: [VibroSight Mimic menus](#)

VibroSight Mimic toolbars

- [VibroSight Mimic Tools toolbar](#)
The VibroSight Mimic Tools toolbar contains buttons to help you quickly perform standard operations.
- [VibroSight Mimic Active Mimic toolbar](#)
The VibroSight Mimic Active Mimic toolbar contains buttons to help you work with the VibroSight Mimic projects.

VibroSight Mimic Tools toolbar

The VibroSight Mimic Tools toolbar contains buttons to help you quickly perform standard operations.

The following toolbar buttons are available:

Toolbar button	Description
	New Project (CTRL+N) Create a new VibroSight Mimic project.
	Open Project (CTRL+O) List all VibroSight Mimic projects in the current project folder.
	Save Project (CTRL+S) Save the current VibroSight Mimic project or active document.
	Cut (CTRL+X) Cut the selection and copy it to the clipboard.



Copy (CTRL+C)

Copy the selection to the clipboard.



Paste (CTRL +V)

Paste the contents of the clipboard.



New Mimic

Adds a new (empty) Mimic document to the project.



Full Screen (F11)

Maximizes the screen area given to the document windows (Mimics) contained in the project. Click Exit Full Screen or press F11 (again) to switch back to the default VibroSight Mimic project screen usage.

Parent topic: [VibroSight Mimic toolbars](#)

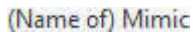
VibroSight Mimic Active Mimic toolbar

The VibroSight Mimic Active Mimic toolbar contains buttons to help you work with the VibroSight Mimic projects.

The following toolbar buttons are available:

Toolbar button

Description



Displays the name of the currently selected Mimic document that is active in the main working window of VibroSight Mimic.



Starts (runs) the VibroSight Mimic project.



Stops the VibroSight Mimic project.



Selecting Aautorun allows the VibroSight Mimic project to automatically start importing live data values into the Mimic documents whenever the project is opened in VibroSight Mimic.

If Aautorun is not selected (**Aautorun**), the Start toolbar button must be used to run the Mimic.

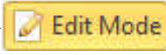
If Aautorun is selected (**Aautorun**), the Mimic will be run automatically when the VibroSight Mimic project is opened.

Aautorun is a two-state (toggle) control and the state of Aautorun is saved in the VibroSight Mimic project file.



Selecting Edit Mode allows the VibroSight Mimic project to be edited: new Mimic documents can be added and existing Mimic documents can be modified.

If Edit Mode is not selected (**Edit Mode**), the Toolbox and Properties windows are not available and the Mimic documents cannot be edited.

If Edit Mode is selected (, the Toolbox and Properties windows are available and the Mimic documents can be edited.

Edit Mode is a two-state (toggle) control.



Bring To Front

Brings the selected object to the front of the Mimic document.



Send To Back

Sends the selected object to the back of the Mimic document.



Fill Color

Fills the selected object (such as a Text box or a Panel) with a selected colour.



Border Color

Colours the border of the selected object (such as a Text box) with a selected colour.

Parent topic: [VibroSight Mimic toolbars](#)

VibroSight Mimic windows

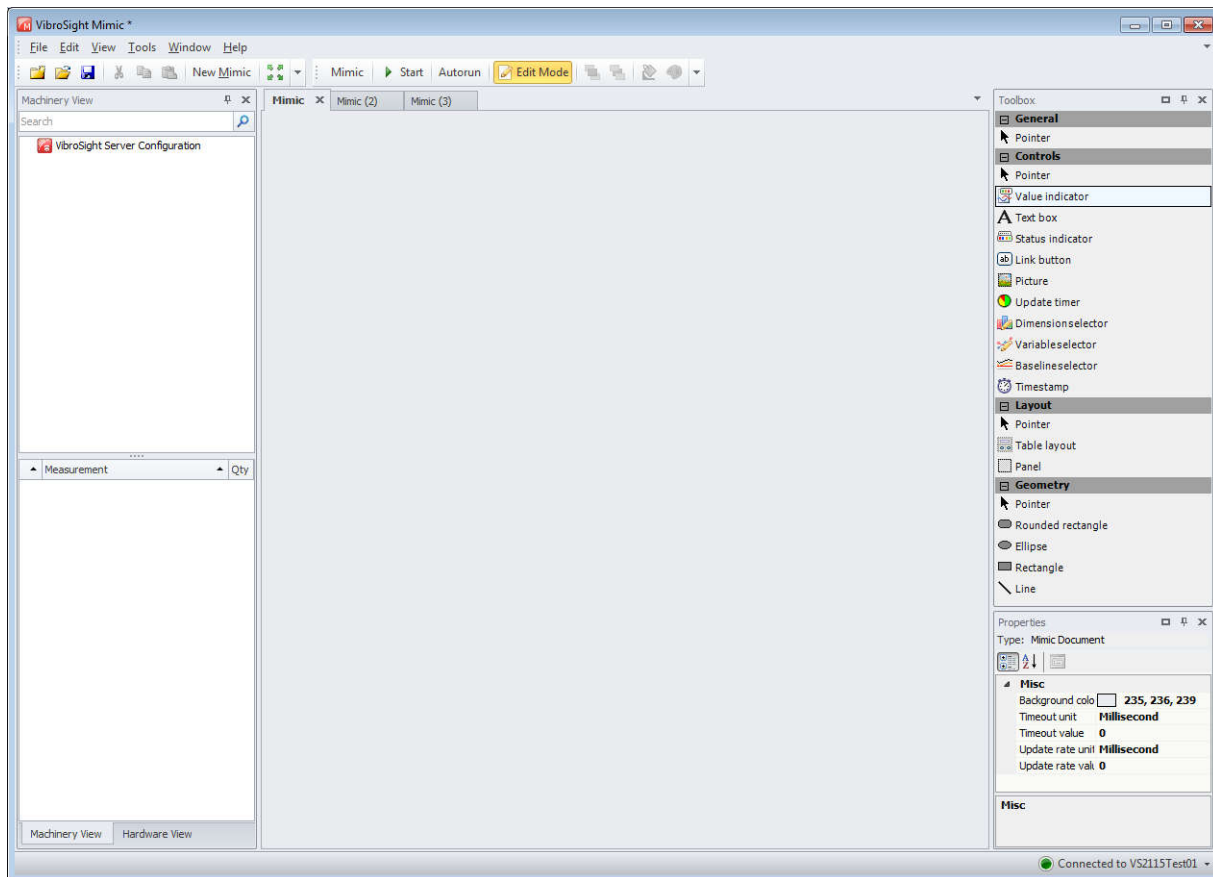
- [VibroSight Mimic user interface](#)
VibroSight Mimic implements a project-based user interface.
- [VibroSight Data Sources Selection dialog box](#)
The VibroSight Data Sources Selection dialog box is used to select a data source to be used by a VibroSight software client such as VibroSight Vision.
- [VibroSight Mimic Options window](#)
The VibroSight Mimic Options window allows the general options that are user configurable to be displayed and modified.

VibroSight Mimic user interface

VibroSight Mimic implements a project-based user interface.

The VibroSight Mimic user interface implements a multiple window tabbed document interface that provides all of the tools necessary for creating Mimics and displaying data. When a new VibroSight Mimic project is created, the windows are displayed in their default arrangement. However, VibroSight implements a flexible docking framework that supports the custom arrangement of windows (on a VibroSight Mimic project basis), which allows the layout of the windows to be easily customized to meet the needs of a VibroSight Mimic project. For example, with the tool windows displayed when creating Mimics in edit mode and with the tool windows hidden when running a Mimic in order to maximize the size of the displayed Mimic document.

The figure below shows the VibroSight Mimic project user interface, with the default arrangement of the windows, as displayed when a new VibroSight Mimic project is created. Looking from top to bottom and left to right, it consists of a title bar, a menu bar, a toolbar, a tabbed tool window containing the Hardware View and the Machinery View on the left, the main working area for document windows (that is, M) in the centre, a tabbed tool window containing the Toolbox and the Properties tool windows on the right, and a status bar.



VibroSight Mimic user interface

Title bar

The title bar at the top of the VibroSight Mimic project user interface displays the name of the VibroSight Mimic project and the name of the VibroSight software module.

Note:

The title bar will include an asterisk (*) after the name of the VibroSight Mimic project if there have been changes to the project since it was last saved.

Menu bar

The menu bar provides access to VibroSight Mimic commands, arranged by function.

Note:

Some menu bar commands are unavailable (greyed out) unless they are relevant to the work currently being done with the software. For example, some commands are restricted to editing Mimic documents.

Toolbar

The toolbar provides access to the most frequently used VibroSight Mimic commands, using toolbar buttons as shortcuts.

Note:

Some toolbar buttons are updated dynamically depending on the work currently being done with the software. For example, some toolbar buttons are for operations that are restricted to certain types of Mimic object.

Hardware View and Machinery View tool windows

The Hardware View and the Machinery View tool windows (left) are used to find and associate the measurements (data entities) with the Mimic objects displayed in the document windows (Mimic documents) of the VibroSight Mimic project. These views provide two complementary views of the complete system configuration as hierarchical tree structures. (This information is obtained from the configuration for the application that was entered in VibroSight Configurator and is stored in the VibroSight Server database.) And either view can be used to find and specify the same measurements (data entities).

The Hardware View tool window displays the configuration in terms of the VibroSight-based monitoring equipment deployed: such as the VibroSight Server, VM600 racks and XMx16 cards, and VibroSmart DMS measurement blocks and devices. This view is typically more useful when commissioning a VibroSight-based system.

The Machinery View tool window displays the configuration in terms of the machinery being monitored: such as facility units (typically buildings) that house the machinery, machine units (such as a turbine), shafts, stages, bearing planes and ultimately the measurement points. This view is typically more useful when using the VibroSight-based system to perform condition monitoring.

Note:

The Hardware View and the Machinery View also provide a search bar that allows their hierarchical tree structures to be searched in order to find particular measurements (data entities). This feature is particularly useful for larger, more complicated configurations that can be difficult or slow to navigate.

Main working area for document windows

The main working area in the centre of the VibroSight Vision project user interface is used to display the document windows (Mimic documents) that are added to a VibroSight Mimic project in order to display measurements (data entities).

By default, each document window (Mimic documents) that is added to the main working area is displayed as a separate tabbed document. However, the docking framework allows the custom arrangement of these document windows (Mimic documents).

Note:

The layout of document windows (Mimic documents) in the main working area is saved in the VibroSight Mimic project file (*.vsmimic).

Toolbox and Properties tool windows

The Toolbox and the Properties tool windows (right) provide complementary functions in a VibroSight Mimic project.

The Toolbox is used to add Mimic objects to a Mimic document.

The Project Explorer is used to specify the parameters for the Mimic objects in a Mimic document.

Status bar

The status bar at the bottom of the VibroSight Mimic project user interface provides information about the operation and the status of the VibroSight Mimic project.

On the far right of the status bar, information about the connection to the data source used by the project is displayed.

Parent topic: [VibroSight Mimic windows](#)

VibroSight Data Sources Selection dialog box

The VibroSight Data Sources Selection dialog box is used to select a data source to be used by a VibroSight software client such as VibroSight Vision.

The Data Sources Selection dialog box is automatically displayed in VibroSight clients such as VibroSight Vision when a new project is being created and the data source must be specified.

The Data Sources Selection dialog box is also used in VibroSight clients such as VibroSight Vision when the data source for a project is changed.

The data sources that can be used by VibroSight software clients are:

- VibroSight Server

Using a VibroSight Server as a data source provides access to both live and historical data from a VibroSight historical data folder (*.vshdf) used as the data repository.

Live data is measurement and event data from VM600 XMx16 cards and/or VibroSmart modules that is streamed via the VibroSight historical data folder.

Historical data is measurement and event data from VM600 XMx16 cards and/or VibroSmart modules that was logged to the VibroSight historical data folder.

- Devices

Using a device as a data source provide access to live measurement and event data that is streamed directly from VM600 XMx16 cards and/or VibroSmart modules.

- Historical Data Files

Using a historical data file as a data source provide access to historical measurement and event data that is stored in a VibroSight historical data archive (*.vshda). (A VibroSight historical data archive (*.vshda) a VibroSight historical data archive (HDA).

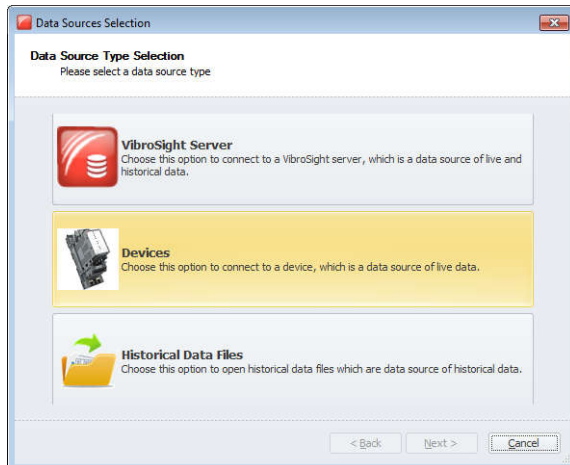
Note:

A smaller VibroSight historical data archive (*.vshda) generated from a larger VibroSight historical data folder (*.vshdf) makes it faster and easier to share and work with particular data

of interest.

Note:

The data sources displayed in the Data Sources Selection dialog box depends on the VibroSight client being used. For example, VibroSight Vision can work with all types of data so it displays all of the data sources but VibroSight Scope works with live data so it displays only the VibroSight Server and Devices data sources.



VibroSight Data Sources Selection dialog box

Selecting VibroSight Server displays the VibroSight Server selection page of the Data Sources Selection dialog box, which allows the specific VibroSight Server to use as the data source to be either selected from the list of VibroSight Servers that the VibroSight software can see on the computer network or specified using an IP address and TCP port number.

Selecting Devices displays the Device selection page of the Data Sources Selection dialog box, which allows one or more specific VM600 XMx16 cards and/or VibroSmart modules to be either selected from the list of compatible devices that the VibroSight software can see on the computer network or specified using an IP address or host name.

Selecting Historical Data Files displays the Select a historical data archive to open page of the Data Sources Selection dialog box, which allows the specific VibroSight historical data archive (*.vshda) to use as the data source for the to be either selected from the list of VibroSight historical data archives that the VibroSight software can see on the computer network or specified using a folder and file name.

Note:

On the status bar at the bottom of a VibroSight software client, information about the connection to the data source used by the project is displayed.

Data source information is stored in VibroSight client project files, so when a project is opened, it automatically reconnects to the data source that is specified for the project.

Parent topic: [VibroSight Mimic windows](#)

Parent topic: [VibroSight Vision windows](#)

Related concepts

[VibroSight Vision projects](#)

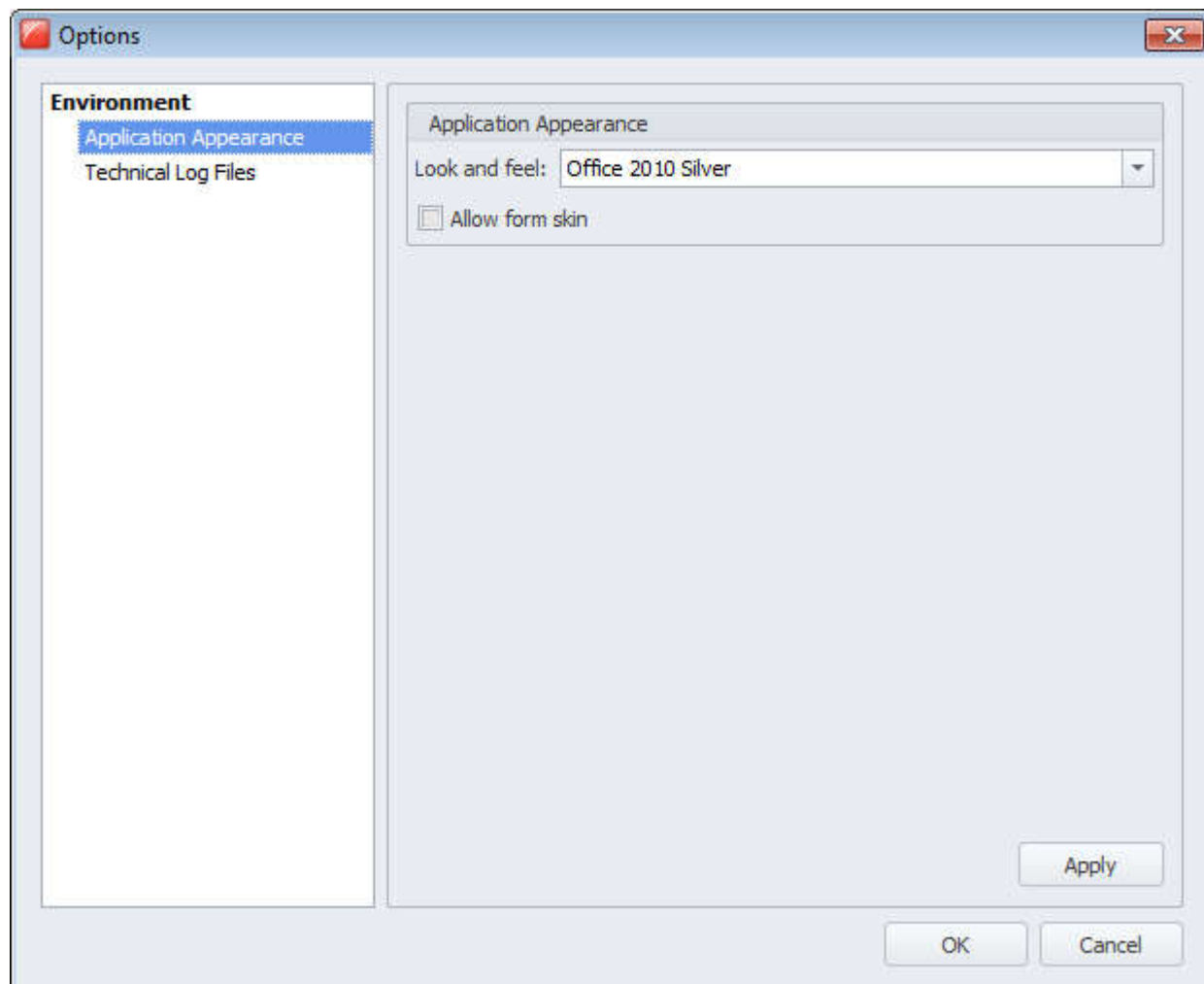
[VibroSight data sources](#)[An introduction to VibroSight Server](#)**Related tasks**[Creating a VibroSight Vision project](#)[Changing the data source for a VibroSight project](#)

VibroSight Mimic Options window

The VibroSight Mimic Options window allows the general options that are user configurable to be displayed and modified.

For VibroSight Mimic, these general options include technical log file and access rights settings.

As the figure below shows, the VibroSight Mimic Options window consists of two panes: the left pane organises the options by function and allows a particular option to be selected, while the right pane displays the settings for the option selected in the left pane.



VibroSight Mimic Options window

Environment

Application appearance

Use these controls to change the default appearance of the VibroSight Mimic software.
Technical log files

Use the Log file name control to navigate the folders on the computer and select in which folder and under what file name to save the VibroSight Mimic log file (*.xlog). However, the it is recommended that the default folder and file are used.

Use the Log level option buttons to select the level of detail that is written to the VibroSight Mimic log file:

- Off (no information is written, the least processing overhead)
- Fatal
- Error
- Warning
- Information
- Debug
- Trace (lots of information is written, the most processing overhead).

Parent topic: [VibroSight Mimic windows](#)

An introduction to VibroSight Scope

Unlike most of the VibroSight software, which uses a client-server architecture to distribute the functional requirements of the system across several software modules,  VibroSight Scope is a lite-client application that communicates directly with a VibroSmart DMS (that is, without accessing a  VibroSight Server).

Note:

The VibroSight Scope software does not require a user licence in order to run.

VibroSight Scope interacts directly with a VibroSmart DMS, whether a single module or multiple measurement blocks that are networked together. It has a simplified user interface that allows live data being streamed from DMS modules (such as an VSV30x) to be viewed.

Once a data source for a VibroSmart DMS has been configured, VibroSight Scope polls the module selected in the hardware view at a fixed rate of once per second (1/s).

The data that can be viewed using VibroSight Scope includes the previously configured static data and the status information for the modules that make up the DMS. It does not include the display of complicated data types such as waveforms and spectra, trending (historical) data or events, for which  VibroSight Vision should be used.

VibroSight Scope also allows commands such as alarm bypass (AB), alarm reset (AR) and trip multiply (TM) to be sent to the modules in a VibroSmart DMS.

VibroSight Scope data sources

Data source is a term used to describe the origin of the data to be imported into the VibroSight software.

The data sources that can be used with  VibroSight Scope are VibroSmart DMSs, whether a single module or multiple measurement blocks that are networked together.

Note:

It is envisioned that a future release of VibroSight Scope will also support the use of VibroSight servers as a data source.

VibroSight Scope can only be connected to one data source at a time. If the user wants to connect to another (different) data source, the current one must be disconnected first.

Once the user has selected a data source and a connection is established, the data source should not be modified, for example, by adding or removing modules.

VibroSight Scope access rights

Unlike most of the VibroSight software, which uses a system of access rights to control the functionality of the software available to different levels of user, all VibroSight Scope features are available to all users.

Starting VibroSight Scope

There are several ways in which VibroSight Scope can be started.

For example:

- From a Windows Explorer, by double-clicking a VibroSight Scope project file (*.vsscope).
- From a shortcut to the VibroSight Scope executable program file ( VibroSightScope.exe) on the Windows desktop.
- From the Windows Start menu, by clicking the Start button, then clicking All Programs > Meggitt > VibroSight > Scope.

Starting VibroSight Scope by double-clicking a VibroSight Scope project file (*.vsscope) in a Windows Explorer will start VibroSight Scope, and automatically open the project and connect to the data source. This effectively restores the VibroSight Scope project to the state it was in when it was last used and saved, with the same settings.

The other ways of starting VibroSight Scope listed above will not open a project file. This allows a new VibroSight Scope project to be created or an existing project to be opened.

Related reference

[Default VibroSight files](#)

[VibroSight Scope user interface](#)

[VibroSight Scope Hardware View window](#)

Managing VibroSight Scope projects

You can easily create new VibroSight Scope projects, or reopen existing projects and modify their properties.

Creating a VibroSight Scope project

VibroSight Scope projects are created in VibroSight Scope from the project user interface.

If creating a new VibroSight Scope project when a project is already open, the user will be prompted to save any unsaved changes in the already open project before being able to continue.

To create a new VibroSight Scope project:

1. Click the File > New Project menu command.

The Data Source Type Selection page of the Data Sources Selection dialog box is displayed.

2. Select a data source:
 - For projects requiring a VibroSight Server as the data source, click VibroSight Server and on the VibroSight Server selection page that appears, select the specific VibroSight Server to use as the data source for the project. Then click Finish.
 - For projects requiring a direct connection to a device as the data source, click Devices and on the Device selection page that appears, select one or more specific VM600 XMx16 cards and/or VibroSmart modules to use as the data source for the project. Then click Finish.
 - Note:

As VibroSight Scope does not work with historical data, the Historical Data Files data source option is not available.

3. The new project is created and the default VibroSight Scope project user interface is displayed.

The Hardware View (left) of VibroSight Scope updates to show a summary view of the VibroSmart DMS modules (and their containing measurement blocks) for the VibroSight Scope project.

The main window (central area) of VibroSight Scope updates to show more detailed information for the individual VibroSmart DMS module selected in the hardware view, such as the configured outputs and status information. The data displayed varies depending on the type of VibroSmart module.

Note: The information displayed in the status bar (bottom right) about the connection to the data source used by the project changes from  to  when a connection is established.

Opening an existing VibroSight Scope project

You can reopen any existing VibroSight Scope (*.vsscope) project.

To open an existing VibroSight Scope project:

1. On the File menu, click Open.

The file Open dialog box appears.

2. Navigate the folders on your computer and select a VibroSight Scope project file (*.vsscope), then click Open.

The selected project file is loaded into VibroSight Scope which will use the module information contained in the project file to communicate with (that is, load the configuration from) the relevant modules. The Hardware View and main window of VibroSight Scope will be updated accordingly.

Note:

The title bar of the VibroSight Scope window changes to reflect the currently active project.

Closing the current VibroSight Scope project

You can close a VibroSight Scope project if, for example, you want to start working with a different project.

To close the current VibroSight Scope project:

1. On the File menu, click Close.
2. If prompted, click Yes to continue (if you are sure you want to close the project).

Saving a VibroSight Scope project

When you save a VibroSight Scope project, information about the project is written to disk in a *.vsscope file.

To save the current VibroSight Scope project:

1. On the File menu, click Save As.

The file Save As dialog box appears.

2. Navigate the folders on your computer to select an appropriate folder, type the name of the VibroSight Scope project file (*.vsscope), then click Save.

The selected project file is saved in a *.vsscope (XML-based) file with the specified name and location.

Exiting VibroSight Scope

You can exit VibroSight Scope, for example, when you have finished working with it.

To close VibroSight Scope:

On the File menu, click Exit.

Working with a VibroSmart VSV30x module

The VibroSmart VSV30x is a vibration monitoring module with two dynamic vibration channels and one auxiliary (tachometer) channel.

VibroSight Scope can be used with a VSV30x module to monitor the extracted data from the module. The information that can be monitored (viewed) includes the static data entities (previously configured) and the status information for the module.

VibroSight Scope controls are also available for operation with the Logical Functions and DSI Commands supported by the module.

- [Monitoring the channels of a VibroSmart VSV30x in VibroSight Scope](#)

The main VibroSight Scope window displays the most important information for the VibroSmart DMS module selected in the hardware view. For a VibroSmart VSV30x, this includes the extracted data and status information for its input channels.

- [Adding status bits to a VibroSmart VSV30x channel in VibroSight Scope](#)

The main VibroSight Scope window displays the most important information for the VibroSmart DMS module selected in the hardware view. However, additional status bit (flag) information can also be added.

- [Removing status bits from a VibroSmart VSV30x channel in VibroSight Scope](#)

The main VibroSight Scope window displays the most important information for the VibroSmart DMS module selected in the hardware view. Additional status bit information can be removed, if previously added.

- [Monitoring the logical functions of a VibroSmart VSV30x in VibroSight Scope](#)

The main VibroSight Scope window displays the most important information for the VibroSmart DMS module selected in the hardware view. For a VibroSmart VSV30x, this includes the extracted data and status information for its input channels and any logical functions configured for the module.

- **[Using a VibroSmart VSV30x modules DSI signals in VibroSight Scope](#)**

The main VibroSight Scope window displays the most important information for the VibroSmart DMS module selected in the hardware view. For a VibroSmart VSV30x module, this includes the measurement data and status information for its input channels and the status indicators and controls for the DSI signals: alarm bypass (AB), alarm reset (AR) and trip multiply (TM).

Related tasks

[Viewing VibroSmart DMS device information](#)

Monitoring the channels of a VibroSmart VSV30x in VibroSight Scope

The main VibroSight Scope window displays the most important information for the VibroSmart DMS module selected in the hardware view. For a VibroSmart VSV30x, this includes the extracted data and status information for its input channels.

In an open VibroSight Scope project, to monitor the configured channels and the associated extracted data of a VSV30x module:

1. In the Hardware View (left), click on the VSV30x module of interest to select it.

The main VibroSight Scope window updates to show the information available for the selected module.

2. The information for the VSV30x module's input channels are displayed under the Dynamic Input Channel 1, Dynamic Input Channel 2 and Tacho Input Channel 1 title bars (in the center of the main window).

If an input channel is not listed, it is because it is not configured.

Parent topic: [Working with a VibroSmart VSV30x module](#)

Related reference

[VibroSmart VSV30x channels in VibroSight Scope](#)

Adding status bits to a VibroSmart VSV30x channel in VibroSight Scope

The main VibroSight Scope window displays the most important information for the VibroSmart DMS module selected in the hardware view. However, additional status bit (flag) information can also be added.

In an open VibroSight Scope project, to monitor the configured logical functions (basic and advanced) of a VibroSmart VSV30x module:

1. In the Hardware View (left), click on the VSV30x module of interest to select it.

The main VibroSight Scope window updates to show the information available for the selected module.

2. Right-click on the column title (Name, Value, Alarm, Status) in the information for the channel and click Column Chooser.

The Customization dialog box appears.

3. In the Customization dialog box, either:
 - a. Right-click on Flags and click Show This Column.
 - b. Drag Flags to the information for the channel.

The Flags column is added to the information available for the channel.

4. Drag a column title (left or right) to change the order of the information displayed in the information for the channel.
5. To autofit the width of a column to its contents in the information for the channel, either:
 - a. Double-click the boundary to the right of the column.
 - b. Right-click on the column title and click Best Fit.
6. To autofit the width of all columns to their contents in the information for the channel, right-click on any column title

and click Best Fit (all columns).

The individual flag (status bit) information for the channel is updated to reflect the last values received from the module.

Note:

Move (rest) the pointer over the Flags column to see a tooltip with a text description of the flag information.

Parent topic: [Working with a VibroSmart VSV30x module](#)

Related reference

[VibroSmart VSV30x channels in VibroSight Scope](#)

[Data quality information from a VibroSmart DMS module](#)

Removing status bits from a VibroSmart VSV30x channel in VibroSight Scope

The main VibroSight Scope window displays the most important information for the VibroSmart DMS module selected in the hardware view. Additional status bit information can be removed, if previously added.

In an open VibroSight Scope project, to remove the individual status bits (flags) corresponding to the overall status information of a VSV30x module:

1. In the Hardware View (left), click on the VSV30x module of interest to select it.

The main VibroSight Scope window updates to show the information available for the selected module.

2. Right-click on a column title (such as Name, Value, Alarm, Status or Flags) in the information for the channel and click Column Chooser.

The Customization dialog box appears.

3. Drag Flags from the information for the channel to the Customization dialog box.

The Flags column is removed from the information for the channel.

4. Close the Customization dialog box.

Parent topic: [Working with a VibroSmart VSV30x module](#)

Monitoring the logical functions of a VibroSmart VSV30x in VibroSight Scope

The main VibroSight Scope window displays the most important information for the VibroSmart DMS module selected in the hardware view. For a VibroSmart VSV30x, this includes the extracted data and status information for its input channels and any logical functions configured for the module.

In an open VibroSight Scope project, to monitor the configured logical functions (basic and advanced) of a VSV30x module:

1. On the Hardware View, click on the VSV30x module of interest to select it.

The main VibroSight Scope window updates to show the information for the selected module.

2. The status of the VSV30x module's basic logical functions and advanced logical functions are displayed under Logical Functions (right of the main window).

If the Logical Functions are not listed, it is because the Control information is hidden (collapsed). Click the  expand control to display the Control information, including the Logical Functions.

3. Individual virtual LED indicators reflect the status of the Basic (up to four) and Advanced (up to two) logical functions for the module.

Logical function indicator	Colour	Type	Description



reen True The output of the logical function is true (logical 1).



rey False The output of the logical function is false (logical 0).

Note:

This feature is not implemented yet

Parent topic: [Working with a VibroSmart VSV30x module](#)

Using a VibroSmart VSV30x modules DSI signals in VibroSight Scope

The main VibroSight Scope window displays the most important information for the VibroSmart DMS module selected in the hardware view. For a VibroSmart VSV30x module, this includes the measurement data and status information for its input channels and the status indicators and controls for the DSI signals: alarm bypass (AB), alarm reset (AR) and trip multiply (TM).

The status of the individual DSI signals (and their associated control functions) are displayed under the DSI Status title bar in the Status Commands window (right of the main window).

Note:

In addition to the (remote) software commands issued from VibroSight Scope under user control, the DSI control inputs to a VSV30x can be controlled by the (local) corresponding electrical signals on the DSI pins of the connector to the module.

Note:

Only users with the appropriate access rights are allowed to use the DSI Commands: alarm bypass (AB), alarm reset (AR) and trip multiply (TM).

In an open VibroSight Scope project, to use the controls (software commands) of a VibroSmart VSV30x module for the DSI control inputs:

1. On the Hardware View, click on the VSV30x module of interest to select it.

The main VibroSight Scope window updates to show the information for the selected module.

2. The controls (buttons) for the VSV30x module's DSI controls are displayed under the DSI Commands title bar.

If the DSI Commands are not listed, it is because the Status Commands window is hidden (collapsed). Click the  expand control to display the status and commands information, including the DSI Status, Logical Functions, Relays and DSI Commands.

3. Click on a DSI Command button, for example, Trip multiply Enable or Alarm reset Reset, to send the command to the module.

Note:

If the DSI Command buttons are unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Master user level or Admin user level access rights are required to send DSI commands from VibroSight Scope.

VibroSight Scope will send the selected DSI command to the VSV30x module and the DSI Status indicators will update to display the status of the module's DSI signals.

Parent topic: [Working with a VibroSmart VSV30x module](#)

Related concepts

[Discrete signal interface](#)

VibroSight Scope menus

- [VibroSight Scope File menu](#)

The VibroSight Scope File menu contains options allowing you to manage VibroSight Scope projects.

- [VibroSight Scope View menu](#)

The VibroSight Scope View menu allows you to choose which (optional) windows to display in VibroSight Scope.

- [VibroSight Scope Tools menu](#)

The VibroSight Scope Tools menu allows you to modify optional VibroSight Scope settings.

- [VibroSight Scope Help menu](#)

The VibroSight Scope Help menu allows you to access help, save diagnostic information from a VibroSight system and display information about the version of VibroSight software.

VibroSight Scope File menu

The VibroSight Scope File menu contains options allowing you to manage VibroSight Scope projects.

The following commands are available:

- New

Displays the first page of the Data Sources Selection dialog box (wizard), which allows a new VibroSight Scope project to be created.

- Open

Opens an existing VibroSight Scope project. If there is an open project, it is closed before the new project is opened.

- Save As

Saves the open VibroSight Scope project to a different location or with a different file name.

- Close

Closes the open VibroSight Scope project. If the project has unsaved changes, you are prompted to save the changes.

- Exit

Exits (closes) VibroSight Scope. If an open project has unsaved changes, you are prompted to save the changes before VibroSight Scope closes.

Parent topic: [VibroSight Scope menus](#)

VibroSight Scope View menu

The VibroSight Scope View menu allows you to choose which (optional) windows to display in VibroSight Scope.

The following commands are available:

- Hardware View

Displays the VibroSight Scope Hardware View window. By default, the window is displayed on the left side of the screen.

Parent topic: [VibroSight Scope menus](#)

VibroSight Scope Tools menu

The VibroSight Scope Tools menu allows you to modify optional VibroSight Scope settings.

The following commands are available:

- Login

Displays the Select a User Level window which allows the VibroSight Scope user level (access rights) to be changed.

- Options

Displays the Options window containing VibroSight Scope program options.

- Unit Preferences

Displays the Unit Preferences window that allows the management of the unit preferences to be used throughout the VibroSight software. Imperial and Metric unit sets are available by default. However, unit sets can be copied, renamed, imported and exported, allowing unit preferences to be quickly customized to meet the needs of an application and shared between VibroSight installations.

Parent topic: [VibroSight Scope menus](#)

VibroSight Scope Help menu

The VibroSight Scope Help menu allows you to access help, save diagnostic information from a VibroSight system and display information about the version of VibroSight software.

The following commands are available:

- Contents

Displays the  VibroSight help that comes with the VibroSight software.

- Save diagnostic information

Allows diagnostic information for the VibroSight system, including log files (*.xlog) for all of the VibroSight software modules, system information and event information to be saved to a file. This information about a VibroSight system can be useful to Meggitt Sensing Systems customer support when investigating certain issues.

- About VibroSight ...

Displays information about the version of VibroSight software being used.

Parent topic: [VibroSight Scope menus](#)

VibroSight Scope toolbars

VibroSight Scope includes a local toolbar.

- [VibroSight Scope Standard toolbar](#)

The VibroSight Scope Standard toolbar contains buttons to help you quickly perform common operations.

VibroSight Scope Standard toolbar

The VibroSight Scope Standard toolbar contains buttons to help you quickly perform common operations.

The following buttons appear in the VibroSight Scope Standard toolbar:

Button	Description
	Login
	Displays the Select a User Level window, which allows the user level (access rights) to be modified.

Parent topic: [VibroSight Scope toolbars](#)

VibroSight Scope windows

- [VibroSight Scope user interface](#)

The VibroSight Scope user interface consists of a single main window that is displayed when VibroSight Scope is running.

- [VibroSight Scope Hardware View window](#)

The Hardware View appears by default on the left of the main VibroSight Scope window.

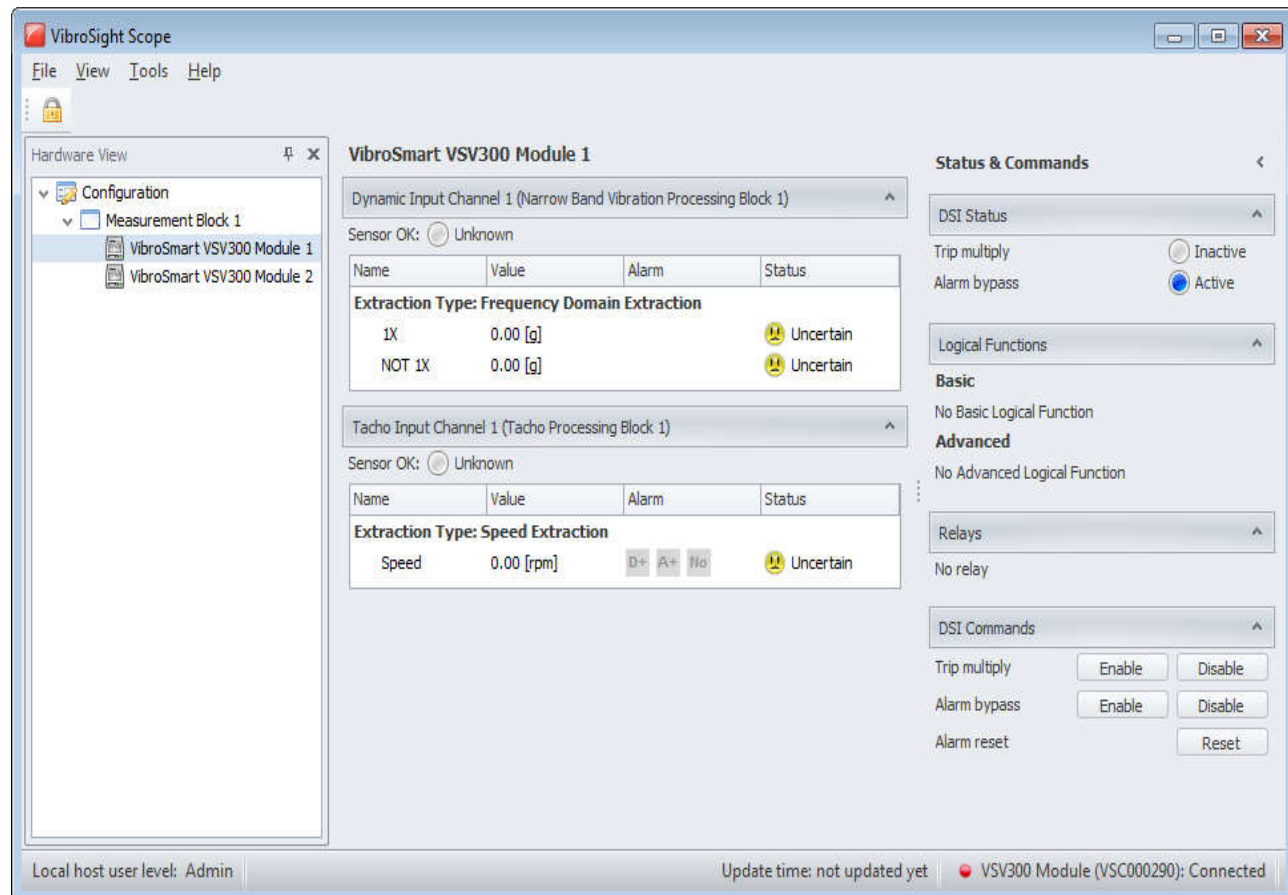
- [VibroSight Scope Options window](#)

The VibroSight Scope Options window allows the general options that are user configurable to be displayed and modified.

VibroSight Scope user interface

The VibroSight Scope user interface consists of a single main window that is displayed when VibroSight Scope is running.

The figure below shows the VibroSight Scope user interface, with the default arrangement of the windows, as displayed when a VibroSight Scope project is open. Looking from top to bottom and left to right, it consists of a title bar, a menu bar, a toolbar, a tool window containing the Hardware View on the left, the main working area for individual VibroSmart DMS modules in the centre, and a status bar.



The VibroSight Scope user interface

Title bar

The title bar at the top of the VibroSight Scope user interface displays the name of the VibroSight Scope project and the name of the VibroSight software module.

Menu bar

The menu bar provides access to VibroSight Scope commands, arranged by function.

Toolbar

The toolbar provides access to the most frequently used VibroSight Scope commands, using toolbar buttons as shortcuts.

Hardware View tool window

The Hardware View tool window (left) displays the VibroSmart DMS modules available in the VibroSight Scope project and is used to select the individual VibroSmart DMS module to display in the main working area (centre).

Main working area

The main working area in the centre of the VibroSight Scope user interface displays the measurement data and status information that is read directly from the currently selected VibroSmart DMS module. It also includes buttons for the DSI commands that can be sent to the currently selected module.

Status bar

The status bar at the bottom of the VibroSight Scope project user interface provides information about the operation and the status of the VibroSight Scope project.

On the left of the status bar, the current user level is displayed.

On the far right of the status bar, information about the connection to the data source used by the project is displayed.

Note:

You can hide, resize, or rearrange the default arrangement of these windows if you wish.

Parent topic: [VibroSight Scope windows](#)

Related tasks

[Starting VibroSight Scope](#)

VibroSight Scope Hardware View window

The Hardware View appears by default on the left of the main VibroSight Scope window.



The VibroSight Scope Hardware View

The Hardware view consists of a tree structure view.

The tree structure view

The tree structure view is a hierarchical representation of the modules contained in the current VibroSmart DMS project.

The following components can be displayed:



Configuration Root

The Configuration Root is the top-level element of a VibroSight configuration.



Measurement Block

DMS modules are grouped in measurement blocks, that is, a logical grouping of individual modules in order to allow inter-module communication (that is, the sharing of alarm, tachometer and some trigger type messages between modules).



VSI010

The VibroSmart VSI010 is a communications interface module (data communications bridge), with up to two industry standard fieldbuses, for use in a VibroSmart DMS.

VSV300

The VibroSmart VSV30x is a vibration monitoring module with two dynamic channels and one auxiliary (tachometer) process channel, for use in a VibroSmart DMS.

Parent topic: [VibroSight Scope windows](#)

Related tasks

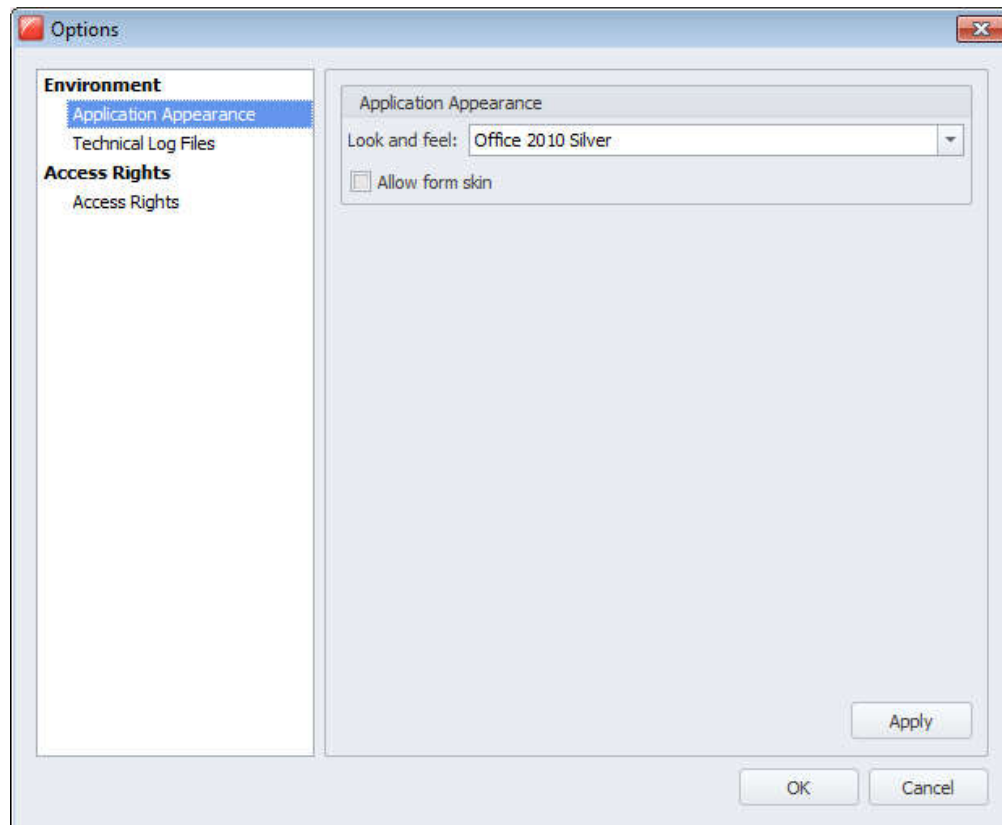
[Starting VibroSight Scope](#)

VibroSight Scope Options window

The VibroSight Scope Options window allows the general options that are user configurable to be displayed and modified.

For VibroSight Scope, these general options include technical log file and access rights settings.

As the figure below shows, the VibroSight Scope Options window consists of two panes: the left pane organises the options by function and allows a particular option to be selected, while the right pane displays the settings for the option selected in the left pane.



VibroSight Scope Options window

Environment

Application appearance

Use these controls to change the default appearance of the VibroSight Scope software.

Technical log files

Use the Log file name control to navigate the folders on the computer and select in which folder and under what file name to save the VibroSight Scope log file (*.xlog). However, the it is recommended that the default folder and file are used.

Use the Log level option buttons to select the level of detail that is written to the VibroSight Scope log file:

- Off (no information is written, the least processing overhead)
- Fatal
- Error
- Warning
- Information
- Debug
- Trace (lots of information is written, the most processing overhead).

Access rights

Access rights

Under Revert, use the Revert to Read privileges after control to enter the time period after which the VibroSight Scope user level will automatically return to the default Read user level.

Parent topic: [VibroSight Scope windows](#)

An introduction to VibroSight Server

The VibroSight software uses a client-server architecture to distribute the functional requirements of the system across several software modules and  VibroSight Server is the server software module that exists at the centre of every VibroSight system.

VibroSight Server is the core software module that interacts with all other parts of a VibroSight system.

VibroSight Server is the only part of the system to access the VibroSight data repositories (historical data folders (*.vshdf)) used for the logging of measurement and event data. It also communicates with the VibroSight-compatible hardware (VM600 cards and VibroSmart devices). So all interaction with a VibroSight data repository and most interaction with the hardware must pass through a VibroSight Server.

VibroSight Server handles requests for data from all of the other VibroSight software clients: VibroSight Configurator, VibroSight Event Viewer, VibroSight Mimic, VibroSight Scope, VibroSight System Manager and VibroSight Vision.

Related concepts

[VibroSight Server user interface](#)

VibroSight Server and VM600 cards

VibroSight was originally limited to one VibroSight Server per VM600 (XMx16) card. That is, if a VibroSight Server had established a connection and was communicating with a XMx16 card, then no other VibroSight Server could communicate with that card (until the first connection was closed).

Note:

Starting with VibroSight 2.9.5, the one VibroSight Server per XMx16 card restriction has been removed so that two VibroSight Servers can be used with a single “shared” XMx16 card.

The VibroSight Servers used with a shared XMx16 card can be either two VibroSight Server software modules running on a host computer or computers, or a VibroSight server process running on a CPUM card and a VibroSight Server software module running on a host computer.

To understand this change, consider an application that required a XMx16 card to support communication with more than one VibroSight Server at the same time, for example, in order to support a control system and a condition monitoring system running in parallel.

Previously, the solution for this application was to use two XMx16 cards with duplicate configurations and common input signal wiring in the same VM600 rack, configured so that:

- One XMx16 card communicated via a CPUM card with the control system
- The other XMx16 card communicated with the VibroSight Server of the condition monitoring system.

However, this solution produced slight variations in the measurements and their timestamps, as a result of using two separate XMx16 cards.

Starting with VibroSight 2.9.5, the solution for this application is to use two VibroSight Servers with independent configurations communicating with a single XMx16 card – although the parts of the configuration for the shared XMx16 card must be identical.

This solution allows the shared XMx16 card to:

- Communicate using a VibroSight server process running on a CPUM card with the control system
- And communicate with the VibroSight Server of the condition monitoring system.

This solution for this application requires that the VibroSight server of the CPUM card sharing the XMx16 card has access to the XMx16 card’s configuration. Accordingly, the Export card configuration button at the card node level in VibroSight Configurator is used to generate the individual device configuration file (*.xml) for an XMx16 card.

Note:

CPUM Configurator software is used to configure the VibroSight server of the CPUM card to use a shared XMx16 card configuration: either by uploading an individual device configuration file (*.xml) for the XMx16 to the CPUM or by telling the CPUM to access the configuration directly from the XMx16 in the same VM600 rack as the CPUM.

To avoid conflicts, only one of the two VibroSight Servers can have read and write access to a shared XMx16 card (the other VibroSight Server will have read only access). The VibroSight Server with read and write access is the “master” and in a typical application, would be the more important system, for example, a control system.

The Standalone Mode check box at the card node level in VibroSight Configurator is used to configure access to the shared XMx16 card for the VibroSight Servers as follows:

- The master VibroSight Server should have Standalone Mode cleared in order to have read and write access
- The other VibroSight Server should have Standalone Mode selected in order to have read only access.

Note:

The VibroSight Server with read only access can only successfully connect to the shared XMx16 card after the master VibroSight Server (read and write access) has established a connection.

Related reference

[VM600 XMC16 card parameters](#)

[VM600 XMV16 card parameters](#)

VibroSight Server and time reference requirements

A VibroSight Server requires a time reference in order to request and collate data from VM600 XMx16 cards and to timestamp the data received over external interfaces (such as Modbus and OPC).

Starting with VibroSight 2.11.1, a VibroSight monitoring system can be deployed either without or with a network time protocol (NTP) server as a time reference.

Note:

If no NTP server is specified (NTP-free operation), the VibroSight Server will use the local clock of the host computer running the VibroSight software as the time reference.

In a VibroSight-based system, the VM600 cards timestamp their measurement data and VibroSight servers timestamp the data received over their external interfaces. If the same NTP server is used as a time reference for the VM600 cards and VibroSight servers, all of the system data is synchronised for easy correlation.

If a system is not using the external interface (Modbus or OPC) capabilities of a VibroSight Server then a Network Time Protocol (NTP) server is not required for the VibroSight Server, as VM600 cards timestamp their own measurement data.

Related concepts

[VibroSight Server and time zones](#)

[VibroSight Vision timestamps](#)

Related tasks

[Setting the reference clock for a VibroSight server](#)

[Setting up the Meinberg NTP package on a Windows computer](#)

Related information

[VibroSight monitoring system time reference requirements](#)

VibroSight Server and time zones

Every measurement in a VibroSight machinery monitoring system has a timestamp (date and time) associated with it, so the time zone settings of a VibroSight Server are configured in coordinated universal time (UTC) in order to help avoid any confusion about the timestamp of the measurements stored in a VibroSight Server database.

Note:

A VibroSight Server internally stores all timestamps in UTC. These timestamps are read and converted to other time formats when they are displayed, for example, in VibroSight Vision.

The use of UTC for a VibroSight Server's time zone helps avoid any confusion for a timestamp because:

- Time zones around the world are expressed as positive or negative offsets from UTC.
- UTC does not change with the seasons (daylight saving time adjustments). For example, a local time of UTC+1 might become UTC+2 if the region observes daylight saving time but the timestamp stored in the VibroSight Server (UTC) remains the same.

For example, in a VibroSight-based system, VM600 XMx16 cards and VibroSmart DMS devices timestamp their measurements and the timestamp is stored with each measurement that is logged in a VibroSight Server database. In addition, VibroSight Servers timestamp the data received over their external interfaces. (If the same NTP server is used as a time reference for the hardware and VibroSight servers, all of the system data is synchronised for easy correlation.)

VibroSight Servers internally store all timestamps using the configured time zone, defined in terms of a UTC (independently of daylight saving time adjustments). And VibroSight Vision can easily switch between displaying the measurements in either Site time, UTC or Local computer time (including daylight saving time adjustments).

Related concepts

[VibroSight Server and time reference requirements](#)

[VibroSight Vision timestamps](#)

Related tasks

[Configuring the site time for a VibroSight Server](#)

Related information

[VibroSight monitoring system time reference requirements](#)

VibroSight Server and duration counters

The calculation of duration counters by a VibroSight Server allows information about how long a machine spends operating above a predefined threshold to be monitored.

Basically, a duration counter provides a cumulative measure of the time that a measurement spends above a predefined threshold during the operation of the machine.

Duration counter data can be an important indicator of the degradation that a machine is suffering during operation and can be particularly useful in combustion applications for monitoring wear or hydro applications for monitoring cavitation.

To use duration counters with a VibroSight machinery monitoring system:

- Duration counters must be configured in VibroSight Configurator.
- Duration counters must be enabled in VibroSight Server.

Note:

Once a duration counter has been added to the Hardware view of a configuration, it is effectively treated like any other static data entity by VibroSight. So a duration counter can be:

- Added as a (measurement) point in the Machinery view of VibroSight Configurator.
- Added as a data entity to a data logging rule in the Data Storage view of VibroSight Configurator.
- Displayed in a plot using VibroSight Vision.

By default, when a VibroSight Server first starts, duration counters are not enabled (that is, the Duration counters control is disabled), so duration counters must be purposely enabled by setting the Duration counters control to enabled.

More specifically, the VibroSight Server Duration counters control can be used to start or stop the calculation of duration counters.

For a VibroSight Server with a user interface, the Duration counters control can be easily enabled or disabled from the VibroSight Server's user interface.

For a VibroSight Server running as a Windows service (that is, without a user interface), VibroSight System Manager must be used to enable or disable the Duration

counters control.

Related tasks

[Enabling or disabling server features for a VibroSight Server](#)

VibroSight Server and data logging

Data logging by a VibroSight Server allows the measurement data and events generated by a VibroSight machinery monitoring system to be stored in a VibroSight data repository (VibroSight historical data folder (*.vshdf)) for later retrieval.

To use data logging with a VibroSight machinery monitoring system:

- Principal mode and/or auxiliary mode data acquisition and associated data logging rules must be configured in VibroSight Configurator.
- Data logging must be enabled in VibroSight Server.

Note:

Logging rules dictate how much information is stored in the VibroSight data repository (VibroSight historical data folder (*.vshdf)) for later retrieval. It is the logging rules that most directly affect how quickly the database used by the system grows and therefore, the ultimate storage requirements of a VibroSight machinery monitoring system.

By default, when a VibroSight Server first starts, data logging is not enabled (that is, the Data logging manager is disabled), so data logging must be purposely enabled by setting the Data logging manager to enabled.

More specifically, the VibroSight Server Data logging manager can be used to start or stop the logging of measurement data acquired in the principal or auxiliary measurement modes to a VibroSight data repository (VibroSight historical data folder (*.vshdf)).

For a VibroSight Server with a user interface, the Data logging manager can be easily enabled or disabled from the VibroSight Server's user interface.

For a VibroSight Server without a user interface (that is, running as a Windows service), VibroSight System Manager must be used to enable or disable the Data logging manager.

Related tasks

[Enabling or disabling server features for a VibroSight Server](#)

[Starting or stopping data logging by a VibroSight Server](#)

VibroSight Server and TCP port binding

By default, a VibroSight Server running on a host computer will use a TCP port number starting at 55000 for communication with VibroSight clients, such as VibroSight Vision. However, since VibroSight 2.9.3, VibroSight Server also supports TCP port binding in order to allow a VibroSight Server to always use a specific TCP port.

Note:

In computer networking, the purpose of ports is to uniquely identify different software running on a single computer and thereby enable them to share a single physical connection, like a network adapter.

By default, when a VibroSight Server starts, it will take the next available TCP port number starting at 55000. That is, the first VibroSight Server to start on a host computer will take the TCP Port 55000, the next VibroSight Server to start on the same computer will take TCP Port 55001, and so on.

However, in certain circumstances, it can be useful to have a VibroSight Server always use a specific TCP port number. For example:

- To know which TCP port numbers are going to be used on the host computer in an application in order to configure the Windows Firewall correctly.
- To use a TCP port number other than 55000 in order to avoid a port conflict with other software on the host computer that already uses TCP port 55000.

When TCP port binding is required, the VibroSight Server configuration file (EditableServerConfiguration.xml) must be manually edited to include the fixed TCP port number to use.

Related tasks

[Using VibroSight Server TCP port binding](#)

VibroSight Server and the align offset time

The align offset time is a fixed time period used by VibroSight Server and VibroSight System Manager when calculating the actual time range to be used by the VibroSight System Manager Data repositories Copy command, when the Last and the Align to full periods controls are used.

Basically, the align offset time is a time buffer that allows for the data handling and data logging performed by the VibroSight Server, in order to ensure that the data is available in the VibroSight data repository when the VibroSight System Manager Copy command runs.

The align offset time is defined in the VibroSight Server configuration file (EditableServerConfiguration.xml) which must be manually edited to change the default align offset time value of 20 minutes, if required.

Related concepts

[Working with VibroSight data repositories - VibroSight System Manager commands and time ranges](#)

Related tasks

[Changing the align offset time for a VibroSight Server](#)

Starting a VibroSight Server

There are several ways in which a VibroSight Server can be started.

For example:

- From a Windows Explorer, by double-clicking a VibroSight data repository (VibroSight historical data folder (*.vshdf)).

- From the Windows Start menu, by clicking the Start button, then clicking All Programs > Meggitt > VibroSight > Server.
- From a shortcut to the VibroSight Server executable program file ( Xms.Server.Client.exe) on the Windows desktop.
- As a Windows service.

Note:

A VibroSight Server is also started automatically by VibroSight Configurator when a configuration is saved as a server / database (File > Save As > Server / Database).

Starting a VibroSight Server by double-clicking a VibroSight data repository (VibroSight historical data folder (*.vshdf)) in a Windows Explorer will start VibroSight Server and automatically open the database. This effectively restores the VibroSight Server to the state it was in when it was last used.

Starting a VibroSight Server using a shortcut or the Start menu will prompt the user to select and open an existing VibroSight data repository (VibroSight historical data folder (*.vshdf)) for use by the VibroSight Server.

Note:

When a VibroSight Server is started, data acquisition from the VibroSight-compatible hardware and external interfaces does not necessarily start automatically: it depends on the state of the VibroSight Server when it was last used (for example, the appropriate device driver must be enabled for the VibroSight-compatible hardware).

- **[Starting a VibroSight Server from the Windows Start menu](#)**
One of the ways that a VibroSight Server can be started is from the Windows Start menu.
- **[Starting a VibroSight Server using a shortcut on the Windows desktop](#)**
One of the ways that a VibroSight Server can be started is using a shortcut on the Windows desktop.
- **[Starting a VibroSight Server as a Windows service](#)**
One of the ways that a VibroSight Server can be started is as a Windows service.

Related tasks

[Stopping a VibroSight Server](#)

Related reference

[Default VibroSight files](#)

Starting a VibroSight Server from the Windows Start menu

One of the ways that a VibroSight Server can be started is from the Windows Start menu.

To start a VibroSight Server from the Windows Start menu:

1. Click the Windows Start button, then click All Programs > Meggitt > VibroSight > Server.

The Open dialog box is displayed.

2. Use the dialog box to navigate the folders on your computer and select the required VibroSight data repository (VibroSight historical data folder (*.vshdf)). Then click Open.

The VibroSight Server starts, automatically loads the configuration from the VibroSight historical data folder (*.vshdf) and starts communicating with the associated VibroSight hardware (VM600 XMx16 cards and/or VibroSmart modules).

In the VibroSight Server window, information about the status of the VibroSight Server is displayed in a general information area (upper left), a Server features area (lower left), a Device drivers area (lower centre) and a Server status area (right).

When a VibroSight Server starts, the operating status of the VibroSight Server depends on its state when it was last used, notably the settings for the Server features (lower left) and Device drivers (lower centre). For example, data acquisition from VibroSight hardware (VM600 XMx16 cards and/or VibroSmart modules) does not start until the appropriate device driver is enabled.

Parent topic: [Starting a VibroSight Server](#)

Starting a VibroSight Server using a shortcut on the Windows desktop

One of the ways that a VibroSight Server can be started is using a shortcut on the Windows desktop.

Using a desktop shortcut has the advantage that a VibroSight data repository (VibroSight historical data folder (*.vshdf)) is specified, so that the server automatically opens the required data repository when it starts.

To create a desktop shortcut to a VibroSight Server:

1. Right-click anywhere on the Windows desktop and click New > Shortcut on the shortcut menu that appears.

The Create Shortcut dialog box is displayed.

2. Use the dialog box to navigate the folders on the computer and select the required VibroSight data repository (VibroSight historical data folder (*.vshdf)). Then click OK / Next.

Note:

The default location for VibroSight data repositories is a subfolder under VibroSight's default data folder (data path directory), typically, C:\VibroSight Data

A VibroSight historical data folder is identified by a *.vshdf file and an associated Storage subfolder.

3. When prompted, enter a name for the shortcut if you do not want to use default name. Then click Finish.

Windows creates a new  VibroSight Server shortcut on the desktop.

The shortcut is actually a shortcut to the specified VibroSight historical data folder (*.vshdf) but since the VibroSight Server software is associated with the *.vshdf file type, it is effectively a shortcut to a VibroSight Server.

- On the Windows desktop, double-click the  VibroSight Server shortcut, which will automatically start the VibroSight server and open the specified VibroSight data repository.

The VibroSight Server starts, automatically loads the configuration from the VibroSight historical data folder (*.vshdf) and starts communicating with the associated VibroSight hardware (VM600 XMx16 cards and/or VibroSmart modules).

In the VibroSight Server window, information about the status of the VibroSight Server is displayed in a general information area (upper left), a Server features area (lower left), a Device drivers area (lower centre) and a Server status area (right).

When a VibroSight Server starts, the operating status of the VibroSight Server depends on its state when it was last used, notably the settings for the Server features (lower left) and Device drivers (lower centre). For example, data acquisition from VibroSight hardware (VM600 XMx16 cards and/or VibroSmart modules) does not start until the appropriate device driver is enabled.

Note:

If the shortcut to a VibroSight Server is copied or moved to a Windows Startup folder, then this VibroSight Server will automatically start whenever the computer is restarted.

The Startup folders on a  Windows 7 computer are:

- C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Startup
- C:\Users\username\AppData\Roaming\Microsoft\Windows\Start Menu\Programs\Startup, where *username* is the Windows account name.

Parent topic: [Starting a VibroSight Server](#)

Starting a VibroSight Server as a Windows service

One of the ways that a VibroSight Server can be started is as a Windows service.

Using a VibroSight Server as a Windows service has the advantage that it can run without operator (user) intervention. That is, a VibroSight Server registered as a Windows service can be configured to start automatically when the operating system is started and run in the background with local system account file privileges, as long as Windows is running, yet can still be controlled manually as required.

A VibroSight Server registered as a Windows service has the added advantage that the VibroSight Server automatically restarts whenever the computer reboots (for example, recovering from a power outage or a computer fault), automatically reloading the configuration from the VibroSight historical data folder (*.vshdf) and starting communications with the associated VibroSight hardware (VM600 XMx16 cards and/or VibroSmart modules).

To use a VibroSight Server as a Windows service, the VibroSight Server must be registered as a Windows service.

To register a VibroSight Server as a Windows service, either:

- The VibroSight System Manager VibroSight Server Register command can be used to register an existing VibroSight Server as a Windows service.

Note:

This is typically done for a VibroSight Server created using the VibroSight Configurator File > Save As > Server / Database command.

- The VibroSight System Manager VibroSight Server Create command can be used to create a new VibroSight Server as a Windows service.

Note:

When a VibroSight Server is running as a Windows service, the usual VibroSight Server user interface is not displayed, so VibroSight System Manager must be used to work with the VibroSight Server.

Parent topic: [Starting a VibroSight Server](#)

Related tasks

[Registering a VibroSight Server as a Windows service](#)

Stopping a VibroSight Server

There are several ways in which a VibroSight Server can be stopped.

For example:

- For a VibroSight Server with a user interface, the File > Quit menu command or the Close button in the VibroSight Server title bar will quit (close) the VibroSight Server.
- For a VibroSight Server running as a Windows service (that is, without a user interface), the Windows Control Panel (Windows > Control Panel > System and Security/Administrative Tools > Services) must be used to stop the VibroSight Server.

Note:

When a VibroSight Server is stopped, data acquisition from the VibroSight-compatible hardware and external interfaces stops automatically.

Related tasks

[Starting a VibroSight Server](#)

Setting VibroSight Server options

VibroSight Server has a number of settings that can be configured using the VibroSight Server Options window.

To set VibroSight Server options:

- In VibroSight Server (Xms.Server.Client.exe), click Tools > Options.

The VibroSight Server Options window is displayed.

2. Select a category of options from the tree structure view (left) in order to display the current settings for the options (right).
3. Modify the settings for the options (right), as required.
4. Click OK to store and use the updated settings for the VibroSight Server, or Cancel.

For example, to change how the VibroSight Server status indicators (performance counter monitors) are displayed by a VibroSight Server:

1. In the left pane of the window, select the User Interface option.
2. In the right pane of the window, use the Display mode drop down list box to change the setting to Text mode or Graphic mode.
3. Click OK (or Cancel).

The updated Display mode setting is stored, and the VibroSight Server updates to display its status indicators accordingly: numerically or graphically.

- [Changing the name of a VibroSight Server](#)
The name of a VibroSight Server can be changed using the VibroSight Server Options.
- [Setting the reference clock for a VibroSight server](#)
The reference clock settings for a VibroSight Server are configured using the VibroSight Server options.
- [Configuring the site time for a VibroSight Server](#)
The site time (time zone) settings for a VibroSight Server are configured using the VibroSight Server options.
- [Setting the display options for a VibroSight server](#)
The display options for a VibroSight Server are configured using the VibroSight Server options.

Related reference

[VibroSight Server Options window](#)

Changing the name of a VibroSight Server

The name of a VibroSight Server can be changed using the VibroSight Server Options.

When a VibroSight Server is initially created, it is given a name (Server instance name) that is subsequently used to uniquely identify that VibroSight Server.

The name of a VibroSight Server is displayed on the Status tab of its user interface, under Instance name. This name (Server instance name) is typically used to identify a Server when selecting a data source.

If required, the name of a VibroSight Server can be changed after it has been created. For example, changing the name of a VibroSight Server makes it easier to use one VibroSight Server as the basis for the creation of other VibroSight Servers, which can be useful for larger projects using multiple VibroSight Servers with similar configurations.

To change the name of a VibroSight Server:

1. Start the VibroSight Server whose name is required to be changed.
2. In the VibroSight Server, click Tools > Options.

The VibroSight Server Options window is displayed.

3. In the VibroSight Server Options window, under Environment, select General.

The Server instance name control is displayed.

4. To change the name (Server instance name) of the VibroSight Server, enter a new name in the Server instance name text box, then click OK to apply the new name to the VibroSight Server.

Note:

VibroSight Server instance names are limited to 18 characters, so the Server instance name text box is limited to 18 characters.

VibroSight allows only alphanumeric characters (A to Z, a to z, 0 to 9), the hyphen-minus character (-) and the underscore character (_) to be used for VibroSight Server names.

It is recommended to choose appropriate VibroSight Server names in order to avoid name conflicts arising due to truncation and/or additional databases being created during automatic data management.

5. The VibroSight Server will automatically stop (which temporarily interrupts the operation of the server), change its name, then restart using the new name.

If a VibroSight software client such as VibroSight Vision or VibroSight System Manager is connected to a VibroSight Server when its name (Server instance name) is changed, communications between the client and the server will temporarily be interrupted when the VibroSight Server changes its name. However, the VibroSight software clients will automatically reconnect to the restarted VibroSight Server using the new name, allowing operation to continue as before. For example, live data will resume display in VibroSight Vision and VibroSight Mimic.

Parent topic: [Setting VibroSight Server options](#)

Related reference

[VibroSight Server Options window](#)

Setting the reference clock for a VibroSight server

The reference clock settings for a VibroSight Server are configured using the VibroSight Server options.

A VibroSight Server can use either the local clock on the host computer that is running the VibroSight Server or an NTP server as its reference clock.

Note:

By default, a VibroSight Server uses the local clock on the host computer that is running the VibroSight Server as its reference clock.

Configuring the reference clock settings for a VibroSight Server simply requires that the IP address of the NTP server (that is available on the network) is entered for the VibroSight Server.

Alternatively, after connecting to a VibroSight Server in VibroSight System Manager, the Reference Clock command (under Configuration) in VibroSight System Manager's Actions window is an equivalent command that can be used to configure the NTP Settings of VibroSight Servers registered as a Windows service or VibroSight Servers that were started using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

To configure the reference clock settings of a VibroSight Server:

1. In VibroSight Server (Xms.Server.Client.exe), click Tools > Options.

The Options dialog box is displayed.

2. Select Reference clock configuration from the tree structure view.
3. To configure VibroSight Server to use the local clock on the host computer that is running the VibroSight Server as its reference clock, under NTP configuration, clear the Enabled check box.

Note:

If the Enabled check box is not selected, use of an NTP server is not enabled and the VibroSight Server uses the local clock on the host computer that is running the VibroSight Server.

4. To configure VibroSight Server to use an NTP server as its reference clock, under NTP configuration, select the Enabled check box, then type the IP address (in dot-decimal notation) of the NTP server to be used in the NTP server text box. Use the Polling interval to specify how frequently the NTP server should be checked by the VibroSight Server. (2 seconds is the default polling interval value.)

Note:

The Enabled check box must be selected before the IP address of an NTP server can be entered in the NTP server text box.

If the Enabled check box is selected, use of an NTP server is enabled and the VibroSight Server uses the specified NTP server.

5. Under Clock monitoring, either accept the system default or set the Acceptable drift before notification to the values required by your system. (10 seconds is the default acceptable drift value.)
6. Click OK.

The Message list box of the VibroSight Server main window displays an information message reporting the result of the operation. For example, Server reference clock has changed. Current reference clock: Previous reference clock:

Parent topic: [Setting VibroSight Server options](#)

Related concepts

[VibroSight Server and time reference requirements](#)

Related tasks

[Configuring the NTP settings of a VibroSight Server using VibroSight System Manager](#)

Related reference

[Network time protocol \(NTP\)](#)

Related information

[VibroSight monitoring system time reference requirements](#)

Configuring the site time for a VibroSight Server

The site time (time zone) settings for a VibroSight Server are configured using the VibroSight Server options.

Configuring the site time (time zone) for a VibroSight Server simply requires that the required time zone to be used by the VibroSight Server and any daylight saving time adjustment is set.

Note:

The actual time used by a VibroSight Server is obtained from the reference clock that the VibroSight Server has been configured to use (local clock on the host computer that is running the VibroSight Server or an NTP server).

To configure the site time (time zone) for a VibroSight Server:

1. In VibroSight Server (Xms.Server.Client.exe), click Tools > Options.

The Options dialog box is displayed.

2. Select Site time from the tree structure view.
3. Under Site time, use the Time zone drop-down list box to select one of the available time zones in terms of coordinated universal time (UTC).

Alternatively, click Use Current to use the time zone configured on the computer running VibroSight Server including the daylight saving time settings (Windows > Control Panel > Date and Time).

In addition, Select Adjust for daylight saving time to automatically observe daylight saving time.

4. Click OK.

Parent topic: [Setting VibroSight Server options](#)

Related concepts

[VibroSight Server and time zones](#)

Setting the display options for a VibroSight server

The display options for a VibroSight Server are configured using the VibroSight Server options.

The VibroSight Server status indicators (performance counter monitors) can be displayed either graphically or numerically.

When displayed graphically, the recent history of values of the indicator are displayed as a plot against time and the latest value of the indicator is displayed as a numerical value.

When displayed numerically, the latest value of the indicator is displayed as a numerical value. By default, the status indicators are displayed graphically (User interface, display mode: graphic mode).

Note:

By default, a VibroSight Server displays its status indicators graphically.

To configure the display mode of a VibroSight Server:

1. In VibroSight Server (Xms.Server.Client.exe), click Tools > Options.

The Options dialog box is displayed.

2. Select User interface from the tree structure view.
3. To configure VibroSight Server to display its status indicators graphically, under Performance counter monitors, select Display mode: raphic mode.
4. To configure VibroSight Server to display its status indicators numerically, under Performance counter monitors, select Display mode: Text mode.
5. Click OK.

Parent topic: [Setting VibroSight Server options](#)

Enabling or disabling server features for a VibroSight Server

For a VibroSight Server, the server features for base and different application specific packages of the VibroSight software can be easily enabled or disabled from the VibroSight Server's user interface.

On the Status tab of a VibroSight Server's user interface, the Server features area provides controls that are used to enable or disable the individual features (post-processing) of the VibroSight Server: Basic math, Air-gap, Combustion Monitoring, Duration counters, VSHDA import and Data logging manager.

Note:

For a VibroSight Server running as a Windows service (that is, without a user interface), VibroSight System Manager must be used to enable or disable specific features of the VibroSight Server.

To enable or disable the individual features of a VibroSight Server:

In the VibroSight Server (Xms.Server.Client.exe), under Server Features (lower left), click on a disabled control to enable it and click on an enabled control to disable it.

Note:

Clicking a server feature control will toggle the command. That is, if it was enabled, it will be disabled, and if it was disabled, it will be enabled.

The Basic math control is used to enable or disable the post-processing performed by the VibroSight Server for the optional Mathematical outputs application specific package.

The Air-gap control is used to enable or disable the post-processing performed by the VibroSight Server for the optional Hydro air-gap monitoring application specific package.

The Combustion monitoring control is used to enable or disable the post-processing performed by the VibroSight Server for the optional Combustion monitoring application specific package.

The Duration counters control is used to enable or disable the post-processing performed by the VibroSight Server for duration counters, which is supported by the standard VibroSight software (base application package).

The VSHDA import control is used to enable or disable the post-processing performed by the VibroSight Server for the creation of a near real-time replica/mirror of a remote data repository in a central diagnostics centre for remote monitoring and diagnostics applications, which is supported by the standard VibroSight software (base application package).

The Data logging manager control is used to enable or disable the post-processing performed by the VibroSight Server for data logging, which is supported by the standard VibroSight software (base application package).

- [Starting or stopping data logging by a VibroSight Server](#)

For a VibroSight Server, data logging can be easily started or stopped from the VibroSight Server's user interface.

Related concepts

[VibroSight Server and duration counters](#)

[VibroSight Server and data logging](#)

Starting or stopping data logging by a VibroSight Server

For a VibroSight Server, data logging can be easily started or stopped from the VibroSight Server's user interface.

On the Status tab of a VibroSight Server's user interface, the Server features area provides controls that are used to enable or disable the individual features (post-processing) of the VibroSight Server: Basic math, Air-gap, Combustion Monitoring, Duration counters, VSHDA import and Data logging manager.

Enabling the Data logging manager feature starts data logging by the VibroSight Server.

Disabling the Data logging manager feature stops data logging by the VibroSight Server.

Note:

For a VibroSight Server running as a Windows service (that is, without a user interface), VibroSight System Manager must be used to enable or disable specific features of the VibroSight Server.

For example:

- To start data logging by the VibroSight Server:

In the VibroSight Server (Xms.Server.Client.exe), under Server features (lower left), click on the Data logging manager control to enable it.

- To stop data logging by the VibroSight Server:

In the VibroSight Server (Xms.Server.Client.exe), under Server features (lower left), click on the Data logging manager control to disable it.

Note:

Clicking a server feature control will toggle the command. That is, if it was enabled, it will be disabled, and if it was disabled, it will be enabled.

Parent topic: [Enabling or disabling server features for a VibroSight Server](#)

Related concepts

[VibroSight Server and data logging](#)

Enabling or disabling device drivers for a VibroSight Server

For a VibroSight Server, the device drivers for the VibroSight-compatible hardware and external interfaces can be easily enabled or disabled from the VibroSight Server's user interface.

On the Status tab of a VibroSight Server's user interface, the Device drivers area provides controls that are used to enable or disable the individual drivers of the VibroSight Server: VM600, VibroSmart, OPC and Modbus.

Note:

For a VibroSight Server running as a Windows service (that is, without a user interface), VibroSight System Manager must be used to enable or disable specific drivers of the VibroSight Server.

To enable or disable the individual drivers of a VibroSight Server:

In the VibroSight Server (Xms.Server.Client.exe), under Device drivers (lower centre), click on a disabled control to enable it and click on an enabled control to disable it.

Note:

Clicking a device driver control will toggle the command. That is, if it was enabled, it will be disabled, and if it was disabled, it will be enabled.

The VM600 control is used to enable or disable the VM600 driver used by the VibroSight Server, allowing/disallowing communications with VM600 XMx16 cards.

The VibroSmart control is used to enable or disable the VibroSmart driver used by the VibroSight Server, allowing/disallowing communications with VibroSmart devices.

The OPC control is used to enable or disable the OPC driver used by the VibroSight Server, allowing/disallowing communications with external OPC clients and servers.

The Modbus control is used to enable or disable the Modbus driver used by the VibroSight Server, allowing/disallowing communications with external Modbus clients and servers.

- [Starting or stopping data acquisition by a VibroSight Server](#)

For a VibroSight Server, data acquisition from the VibroSight-compatible hardware and external interfaces can be easily started or stopped from the VibroSight Server's user interface.

Starting or stopping data acquisition by a VibroSight Server

For a VibroSight Server, data acquisition from the VibroSight-compatible hardware and external interfaces can be easily started or stopped from the VibroSight Server's user interface.

On the Status tab of a VibroSight Server's user interface, the Device drivers area provides controls that are used to enable or disable the individual drivers of the VibroSight Server: VM600, VibroSmart, OPC and Modbus.

Enabling a specific driver starts data acquisition from devices of that type.

Disabling an specific driver stops data acquisition from devices of that type.

Note:

For a VibroSight Server running as a Windows service (that is, without a user interface), VibroSight System Manager must be used to enable or disable specific drivers of the VibroSight Server.

For example:

- To start data acquisition from VM600 XMx16 cards:

In the VibroSight Server (Xms.Server.Client.exe), under Device drivers (lower centre), click on the VM600 control to enable it.

- To stop data acquisition from VM600 XMx16 cards:

In the VibroSight Server (Xms.Server.Client.exe), under Device drivers (lower centre), click on the VM600 control to disable it.

- To start data acquisition from VibroSmart modules:

In the VibroSight Server (Xms.Server.Client.exe), under Device drivers (lower centre), click on the VibroSmart control to enable it.

- To stop data acquisition from VibroSmart modules:

In the VibroSight Server (Xms.Server.Client.exe), under Device drivers (lower centre), click on the VibroSmart control to disable it.

Note:

Clicking a device driver control will toggle the command. That is, if it was enabled, it will be disabled, and if it was disabled, it will be enabled.

Parent topic: [Enabling or disabling device drivers for a VibroSight Server](#)

Using VibroSight Server TCP port binding

When a VibroSight Server is started, its default behaviour is use a TCP port number starting at 55000 for communication with VibroSight clients. However, in certain applications this default behaviour can be changed using TCP port binding so that the VibroSight Server always uses a specific fixed TCP port number.

When TCP port binding is required, the VibroSight Server configuration file (EditableServerConfiguration.xml) must be manually edited to include the fixed TCP port number to use.

Note:

It is highly recommended to make a backup copy of the VibroSight Server configuration file (EditableServerConfiguration.xml) before manually editing it.

Such manual edits must be done carefully in order to ensure that the tags and delimiters used in the VibroSight Server configuration file are used correctly.

To use TCP port binding with a VibroSight Server:

1. Exit (close) the VibroSight Server that requires TCP port binding, so that its configuration file can be edited.
2. On the host computer, use an XML-compatible text editor program to open the VibroSight Server configuration file (EditableServerConfiguration.xml).

Note:

The default location for the VibroSight Server configuration file is in VibroSight's default data folder (data path directory), typically, C:\VibroSight Data\Data repository\Storage\ServerConfiguration\EditableServerConfiguration.xml, where Data repository is replaced with the name of the required VibroSight Server/VibroSight data repository.

3. Find and edit the two lines containing the text string TcpIpPort as follows.

By default, TCP port binding is not used and the lines in the configuration file should be:

```
Property Name "TcpIpPort" Value "55000" Type "System.Int32" />
```

```
Property Name "IsTcpIpPortFixed" Value "false" Type "System.Boolean" />
```

To use TCP port binding, change the lines in the configuration to be:

```
Property Name "TcpIpPort" Value "55xxx" Type "System.Int32" />
```

```
Property Name "IsTcpIpPortFixed" Value "true" Type "System.Boolean" />
```

The first change (Value "55xxx") tells the VibroSight Server the specific TCP port to use, where 55xxx is replaced with the required TCP port number.

The second change (Value "true") tells the VibroSight Server to TCP port binding, that is, use a fixed TCP port number.

Note:

When Name "IsTcpIpPortFixed" Value "false", if the TCP port selected by the VibroSight Server (using Name "TcpIpPort" Value "55000" as the starting point) is not available, the VibroSight Server will use the next available TCP port (starting with Value + 1, and so on).

When Name "IsTcpIpPortFixed" Value "true", if the TCP port specified for the VibroSight Server (using Name "TcpIpPort" Value "55xxx") is not available, the VibroSight Server will report an error and will not start.

4. Save the VibroSight Server configuration file, ensuring that the file name extension (*.xml) is not inadvertently changed.
5. Restart the VibroSight Server.

The VibroSight Server starts, using TCP port binding, and communicates with the associated hardware (VM600 cards and/or VibroSmart DMS modules) as before.

In the VibroSight Server window, the TCP port number used by the VibroSight Server is displayed under Connection. For example, xxx.xxx.xxx.xxx:55xxx, where 55xxx is the TCP port number used.

Related concepts

[VibroSight Server and TCP port binding](#)

Changing the align offset time for a VibroSight Server

A default align offset time is used by VibroSight Server and VibroSight System Manager when calculating the actual time range to be used by the VibroSight System Manager Data repositories Copy command (when the Last and the Align to full periods controls are used). However, the default align offset time can be changed if required.

When a different align offset time is required, the VibroSight Server configuration file (EditableServerConfiguration.xml) must be manually edited to change the time to use.

Note:

It is highly recommended to make a backup copy of the VibroSight Server configuration file (EditableServerConfiguration.xml) before manually editing it.

Such manual edits must be done carefully in order to ensure that the tags and delimiters used in the VibroSight Server configuration file are used correctly.

To change the align offset time used by VibroSight Server and VibroSight System Manager:

1. Exit (close) the VibroSight Server that requires a different align offset time, so that its configuration file can be edited.
2. On the host computer, use an XML-compatible text editor program to open the VibroSight Server configuration file (EditableServerConfiguration.xml).

Note:

The default location for the VibroSight Server configuration file is in VibroSight's default data folder (data path directory), typically, C:\VibroSight Data\Data repository\Storage\ServerConfiguration\EditableServerConfiguration.xml, where Data repository is replaced with the name of the required VibroSight Server/VibroSight data repository.

3. Find and edit the line containing the text string AlignedCopyOffset as follows.

By default, the align offset time is 20 minutes and the line in the configuration file should be:

Property Name "AlignedCopyOffset" Value "PT20M" Type "System.TimeSpan" />

The value can be changed to have any value between 0 seconds and 1 hour:

Property Name "AlignedCopyOffset" Value "PTxxx" Type "System.TimeSpan" />

The change (Value "PTxxx") tells the VibroSight Server the specific align offset time to use, where xxx is replaced with the align offset time. For example:

Value "PT20M" specifies an align offset time of 20 minutes (M designates minutes). This is the default value.

Value "PT0H" specifies an align offset time of 0 hours (H designates hours).

Value "PT0M" specifies an align offset time of 0 minutes (M designates minutes).

Value "PT0S" specifies an align offset time of 0 seconds (S designates seconds).

Value "PT1H" specifies an align offset time of 1 hour (H designates hours).

Value "PT60M" specifies an align offset time of 60 minutes (M designates minutes).

Value "PT3600S" specifies an align offset time of 3600 seconds (S designates seconds).

4. Save the VibroSight Server configuration file, ensuring that the file name extension (*.xml) is not inadvertently changed.
5. Restart the VibroSight Server.

The VibroSight Server starts, using the new align offset time, so the next time that a VibroSight System Manager Data repositories Copy command using the Align to full periods control is run, the new align offset time will be used.

Related concepts

[VibroSight Server and the align offset time](#)

VibroSight Server menus

- [VibroSight Server File menu](#)
The VibroSight Server File menu contains an option allowing you to quit a VibroSight Server.
- [VibroSight Server Tools menu](#)
The VibroSight Server Tools menu provides access to the VibroSight Server settings.
- [VibroSight Server Help menu](#)
The VibroSight Server Help menu provides access to the VibroSight help, allows diagnostic information from a VibroSight system to be saved to a file, and displays information about the version of VibroSight software.

VibroSight Server File menu

The VibroSight Server File menu contains an option allowing you to quit a VibroSight Server.

The following commands are available:

- Quit
Quits (closes) the VibroSight Server.

Parent topic: [VibroSight Server menus](#)

VibroSight Server Tools menu

The VibroSight Server Tools menu provides access to the VibroSight Server settings.

The following commands are available:

- Options
Displays the Options window containing VibroSight Server program options, which can be changed by the user.

Parent topic: [VibroSight Server menus](#)

VibroSight Server Help menu

The VibroSight Server Help menu provides access to the VibroSight help, allows diagnostic information from a VibroSight system to be saved to a file, and displays information about the version of VibroSight software.

The following commands are available:

- Help
Displays the  VibroSight help that comes with the VibroSight software.
- Generate debug file
Allows diagnostic information for the VibroSight system, including log files (*.xlog) for all of the VibroSight software modules, system information and event information to be saved to a file. This information about a VibroSight system can be useful to Meggitt Sensing Systems customer support when investigating certain issues.
- About
Displays information about the version of VibroSight software being used.

Parent topic: [VibroSight Server menus](#)

VibroSight Server toolbars

VibroSight Server does not include any global or local toolbars.

VibroSight Server windows

- [VibroSight Server user interface](#)
The VibroSight Server user interface consists of a single main window that provides the controls for monitoring and controlling a VibroSight Server.
- [VibroSight Server Options window](#)
The VibroSight Server Options window allows you to configure a number of VibroSight Server settings.

VibroSight Server user interface

The VibroSight Server user interface consists of a single main window that provides the controls for monitoring and controlling a VibroSight Server.

Note:

It is also possible to connect to a VibroSight Server via VibroSight System Manager in order to monitor and control it.

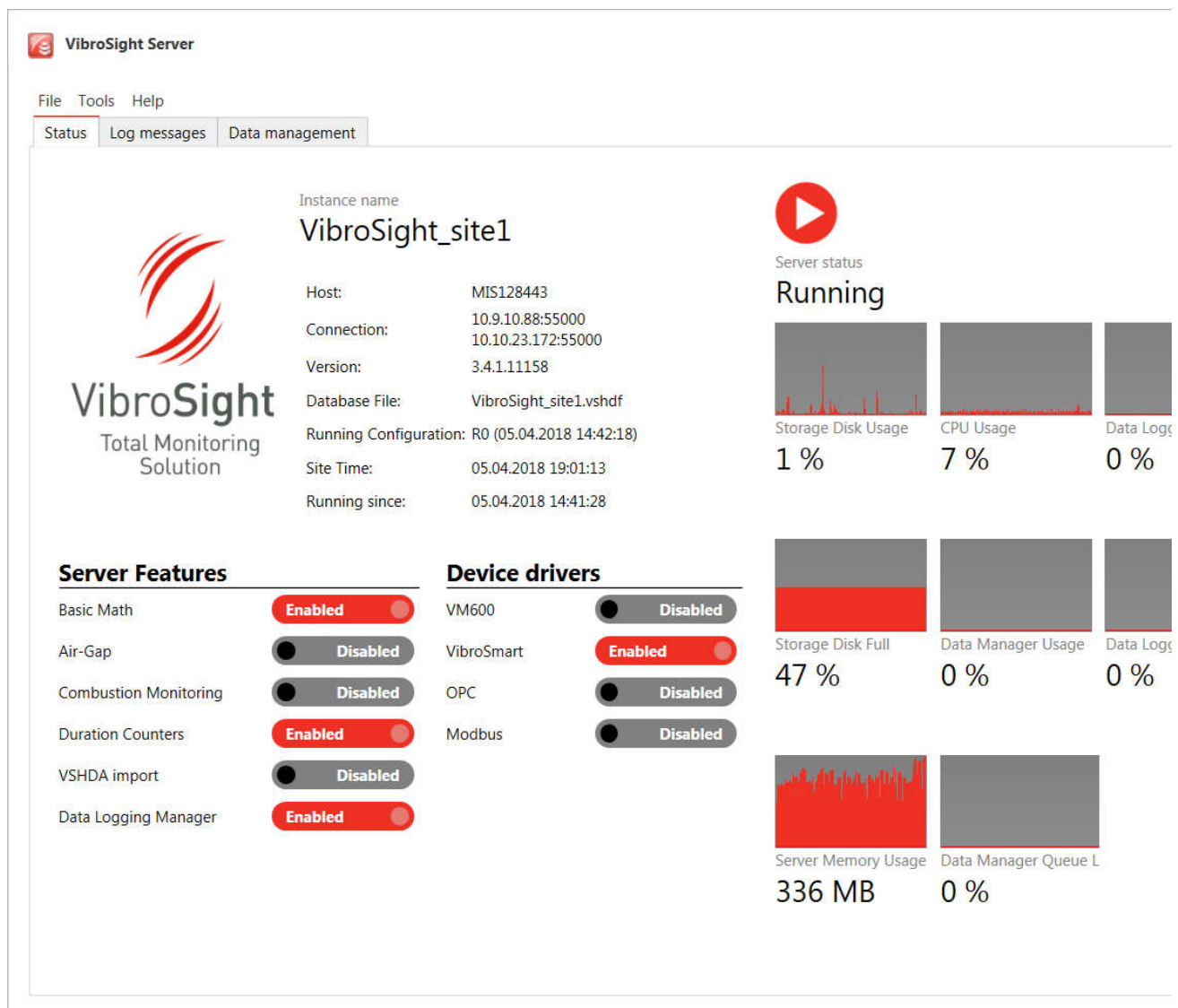
When a VibroSight Server is running as a Windows service, the usual VibroSight Server user interface is not displayed, so VibroSight System Manager must be used to work with the VibroSight Server.

The VibroSight Server user interface implements a multiple window tabbed document interface that provides all of the tools necessary for monitoring and controlling a VibroSight Server. When a new VibroSight Server is created, the windows and panes are displayed in their default arrangement.

The figures below show the default VibroSight Server user interface, with the default arrangement of the windows, as displayed when a new VibroSight Server has been created and activated. Looking from top to bottom and left to right, the default VibroSight Server user interface consists of a title bar, a menu bar, a Status tab, a Log messages tab and a Data management tab.

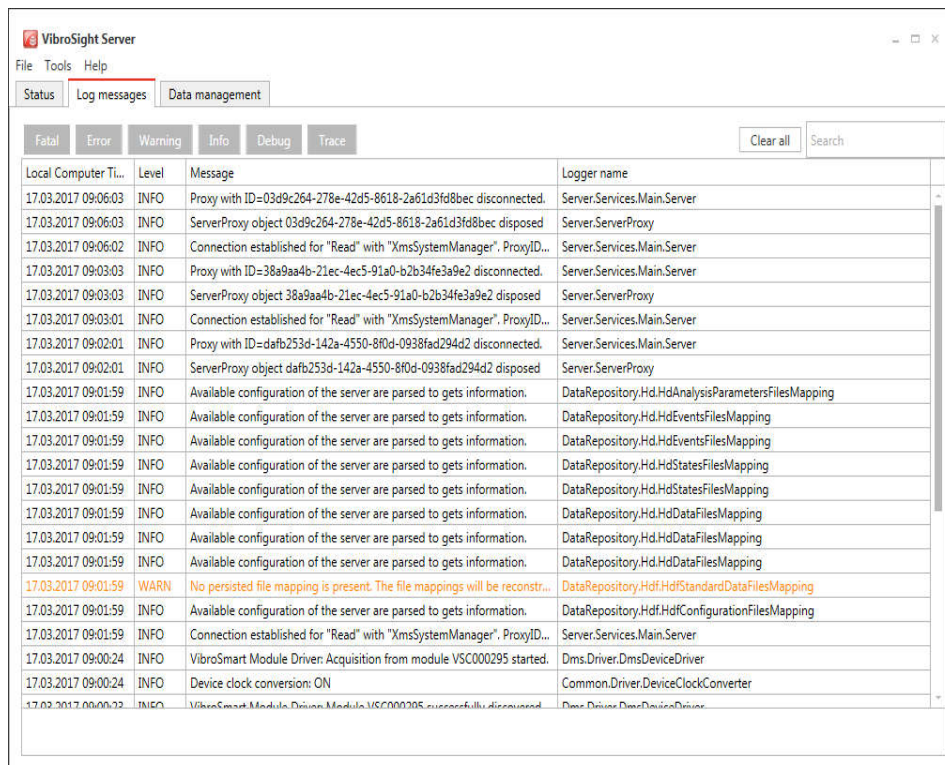
As shown in the figure below, the Status tab consists of four main areas:

- A general information area (upper left) – providing general information on the VibroSight Server.
- A Server features area (lower left) – providing controls to enable or disable specific features of the VibroSight Server.
- A Device drivers area (lower centre) – providing controls to enable or disable specific drivers of the VibroSight Server.
- A Server status area (right) – providing detailed information on the status and performance of the VibroSight Server and the underlying computer.



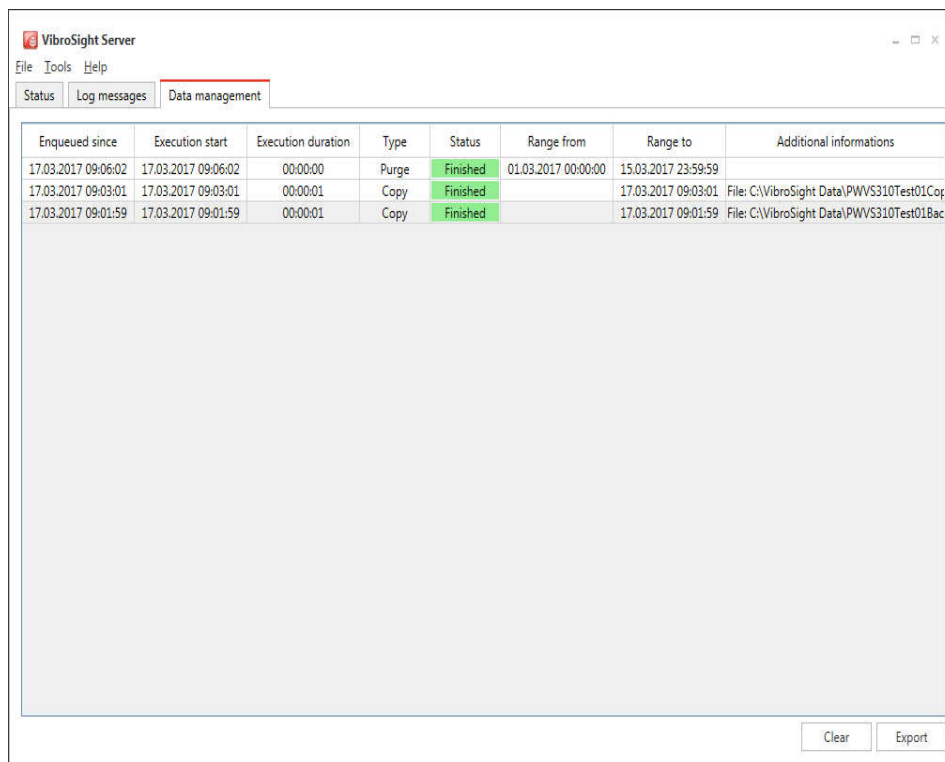
VibroSight Server user interface – Status tab

As shown in the figure below, the Log messages tab consists of a list of messages indicating the status of the VibroSight Server and other system components that it communicates with.



VibroSight Server user interface – Log messages tab

As shown in the figure below, the Data management tab consists of a list of information about the VibroSight System Manager Data Repositories Copy and Purge commands that have accessed the data repository being used by the VibroSight Server.



VibroSight Server user interface – Data management tab

Title bar

The title bar at the top of the VibroSight Server user interface displays the name of the software.

Menu bar

The menu bar provides access to VibroSight Server commands, arranged by function.

Status tab – general information

On the Status tab, the general information area (upper left) provides general information on the VibroSight Server:

- Instance name displays the name (instance) of the VibroSight Server.
- Running Configuration displays information about the active configuration on the VibroSight Server, where Rn is the revision (version) of the configuration (starting from 0) that is active on the VibroSight Server, and dd.mm.yyyy and hh.mm.ss give the date and time of when this configuration was activated on the VibroSight Server.
- Host displays the name (host name) of the computer running the VibroSight Server.
- Connection displays the IP address of the computer running the VibroSight Server and the TCP port used for communications.
- Version displays the software version identifier for the VibroSight Server software.
- Database file displays the name of the VibroSight database repository (VibroSight historical data folder (*.vshdf)) used by the VibroSight Server.
- Site time displays the date and time according to the VibroSight Server in terms of coordinated universal time (UTC).

Note:

A VibroSight Server internally stores all timestamps in UTC. These timestamps are read and converted to other time formats when they are displayed.

In the VibroSight Vision status bar (under Timestamps), (DST) is included at the end of the time text string displayed if daylight saving time is being used for the date and time settings.

- Running since displays the date and time when the VibroSight Server started.

Status tab – Server features

On the Status tab, the Server features area (lower left) provides controls that are used to enable or disable specific features of the VibroSight Server:

- The Basic math control is used to enable or disable the post-processing performed by the VibroSight Server for the optional Mathematical outputs application specific package.
- The Air-gap control is used to enable or disable the post-processing performed by the VibroSight Server for the optional Hydro air-gap monitoring application specific package.
- The Combustion monitoring control is used to enable or disable the post-processing performed by the VibroSight Server for the optional Combustion monitoring application specific package.
- The Duration counters control is used to enable or disable the post-processing performed by the VibroSight Server for duration counters, which is supported by the standard VibroSight software (base application package).
- The VSHDA import control is used to enable or disable the post-processing performed by the VibroSight Server for the creation of a near real-time replica/mirror of a remote data repository in a central diagnostics centre for remote monitoring and diagnostics applications, which is supported by the standard VibroSight software (base application package).
- The Data logging manager control is used to enable or disable the post-processing performed by the VibroSight Server for data logging, which is supported by the standard VibroSight software (base application package).

Note:

Clicking a server feature control will toggle the command. That is, if it was enabled, it will be disabled, and if it was disabled, it will be enabled.

Status tab – Device drivers

On the Status tab, the Device drivers area (lower centre) provides controls that are used to enable or disable specific drivers of the VibroSight Server:

- The VM600 control is used to enable or disable the VM600 driver used by the VibroSight Server, allowing/disallowing communications with VM600 XMx16 cards.
- The VibroSmart control is used to enable or disable the VibroSmart driver used by the VibroSight Server, allowing/disallowing communications with VibroSmart devices.
- The OPC control is used to enable or disable the OPC driver used by the VibroSight Server, allowing/disallowing communications with external OPC clients and servers.
- The Modbus control is used to enable or disable the Modbus driver used by the VibroSight Server, allowing/disallowing communications with external Modbus clients and servers.

Note:

Clicking a device driver control will toggle the command. That is, if it was enabled, it will be disabled, and if it was disabled, it will be enabled.

Status tab – Server status

On the Status tab, the Server status area (right) provides detailed information on the status and performance of the VibroSight Server and the underlying computer:

- Storage disk usage is a percentage (%) that indicates how hard the computer operating system and hard disk drive are working to handle all of the read/write accesses required by the VibroSight system.

This is not a VibroSight Server specific measure (that is, the data comes from the underlying operating system / computer).

For the Storage disk usage indicator, a lower number is better. For example, 25 % indicates that the computer operating system and hard disk drive are not working too hard and have lots of spare capacity (to handle more accesses), while 75 % indicates that the computer operating system and hard disk drive are working quite hard and do not have too much spare capacity. See also the Storage disk full indicator.

- Storage disk full is a percentage (%) that indicates the amount of hard disk space used on the computer running the VibroSight Server.

This is not a VibroSight Server specific measure (that is, the data comes from the underlying operating system / computer).

For the Storage disk full indicator, a lower number is better. For example, 25 % indicates that only one-quarter of the hard disk space has been used and that three-quarters remains available for VibroSight (and the other software running on the computer), while 75 % indicates that three-quarters of the hard disk space has been used and that only one-quarter remains available. See also the Storage disk usage indicator.

- Data manager usage is a percentage (%) that indicates how hard the VibroSight Server software is working to perform all of the data handling required by the VibroSight system.

This is a VibroSight Server specific measure (that is, the data comes from the VibroSight software).

For the Data manager usage indicator, a lower number is better. For example, 25 % indicates that the VibroSight Server data manager is not working too hard and has lots of spare capacity (to handle more data), while 75 % indicates that the VibroSight Server data manager is working quite hard and does not have too much spare capacity. See also the Data manager queue length indicator.

- Data manager queue length is a percentage (%) that indicates how much data is in a queue waiting to be handled by the VibroSight Server data manager.

This is a VibroSight Server specific measure (that is, the data comes from the VibroSight software).

For the Data manager queue length indicator, a lower number is better (like the Data manager usage indicator that it is closely related to). During normal operation, the VibroSight Server data manager performs all of the data handling required and the Data manager queue length indicator is typically very low (typically 1 to 2 %). During periods of peak activity, the data manager may not be able to keep up with the data load (Data manager usage at 100 %), so the data manager queue temporarily buffers the incoming data (Data manager queue length typically 25 %) until the data manager has more capacity.

Note:

If during periods of sustained peak activity, when the VibroSight Server data manager is struggling to keep up with the data load (Data manager usage at 100 %) and the data manager queue cannot buffer all of the incoming data (Data manager queue length at 100 %), the VibroSight Server cannot perform all of its tasks and some data will probably be lost.

If the Data manager queue length indicator consistently indicates >25 %, then the VibroSight machinery monitoring system should be reviewed in order to reduce the overall data load and prevent the possible loss of data.

- Server memory usage is a measure (MB) that indicates how much of the computer system's memory (RAM) the VibroSight Server is using.

This is not a VibroSight Server specific measure (that is, the data comes from the underlying operating system / computer).

For the Server memory usage indicator, the number should be considered as a proportion of the system memory (RAM) on the computer running the VibroSight Server. For example, if the VibroSight Server is using a significant proportion of the system memory, then installing more memory on the computer could improve overall performance of VibroSight (and the other software running on the computer). See also the CPU usage indicator.

- CPU usage is a percentage (%) that indicates how much of the computer system's processor (CPU) the VibroSight Server is using.

This is not a VibroSight Server specific measure (that is, the data comes from the underlying operating system / computer).

For the CPU usage indicator, a lower number is better. For example, 25 % indicates that the VibroSight Server is not taking too much of the processors time and there should be lots of spare capacity (depending on what other software is running on the computer), while 75 % indicates that the VibroSight Server is taking quite a lot of the processors time and there might not be too much spare capacity (depending on what other software is running on the computer). See also the Server memory usage indicator.

- Data logging manager usage is a percentage (%) that indicates how hard the VibroSight Server software is working to perform all of the data logging required by the VibroSight system.

This is a VibroSight Server specific measure (that is, the data comes from the VibroSight software).

For the Data logging manager usage indicator, a lower number is better. For example, 25 % indicates that the VibroSight Server data logging manager is not working too hard and has lots of spare capacity (to log more data), while 75 % indicates that the VibroSight Server data logging manager is working quite hard and does not have too much spare capacity. See also the Data logging manager queue length indicator.

- Data logging manager queue length is a percentage (%) that indicates how much data is in a queue waiting to be processed by the VibroSight Server data logging manager.

This is a VibroSight Server specific measure (that is, the data comes from the VibroSight software).

For the Data logging manager queue length indicator, a lower number is better (like the Data logging manager usage indicator that it is closely related to). During normal operation, the VibroSight Server data logging manager performs all of the data logging required and the Data logging manager queue length indicator is typically very low (typically 1 to 2 %). During periods of peak activity, the data logging manager may not be able to keep up with the data logging load (Data logging manager usage at 100 %), so the data logging manager queue temporarily buffers the incoming data (Data logging manager queue length typically 25 %) until the data logging manager has more capacity.

Note:

If during periods of sustained peak activity, when the VibroSight Server data logging manager is struggling to keep up with the data logging load (Data logging manager usage at 100 %) and the data logging manager queue cannot buffer all of the incoming data (Data logging manager queue length at 100 %), the VibroSight Server cannot perform all of its tasks and some data will probably be lost (not logged).

If the Data logging manager queue length indicator consistently indicates >25 %, then the VibroSight machinery monitoring system should be reviewed in order to reduce the overall data logging load and prevent the possible loss of data.

The actual VibroSight Server status indicators (performance counter monitors) displayed depends on the Server features enabled and running. For example:

- The Data logging manager usage and Data logging manager queue length indicators are only displayed when the Data logging manager is enabled.
- The Combustion monitoring post processing usage and Duration counters post processing usage indicators are only displayed when enabled (using the appropriate control in the Server features area) and the configuration contains these features.

VibroSight Server status indicators can be displayed either graphically or numerically.

When displayed graphically, the recent history of values of the indicator are displayed as a plot against time and the latest value of the indicator is displayed as a numerical value. When displayed numerically, the latest value of the indicator is displayed as a numerical value.

By default, the status indicators are displayed graphically (User interface, Display mode: raphic mode).

Log messages tab – list of messages

On the Log messages tab, a list of messages is displayed that provides detailed information on the status of the VibroSight Server and other system components that it communicates with, such as VibroSight-compatible hardware (VM600 XMx16 cards and VibroSmart modules), VibroSight data repositories, VibroSight software clients, external interfaces and the underlying computer.

The individual type of message tabs (top left), can be used to selectively filter the messages in order to display only the messages of the types selected: Fatal, Error, Warning, Info, Debug and/or Trace.

Note:

Clicking an individual type of message tab will toggle the display of the messages. That is, if the type of message was displayed (white text on grey background), it will be hidden, and if the type of message was hidden (black text on white background), it will be displayed.

Any combination of individual types of message tab can be selectively displayed or hidden at any one time.

The Clear all button (top right), can be used to clear (delete) all of the currently displayed messages.

The search box (top right), can be used to selectively filter the messages in order to display only the measurements containing the search term.

Data management tab – list of information

On the Data management tab, detailed information is displayed for each Data Repositories Copy command or Purge command (or command-line equivalent) that was run on the data repository being used by the VibroSight Server (that is, the VibroSight historical data folder (*.vshdf)).

Each row on the tab corresponds to a particular Data Repositories Copy or Purge command:

- The Enqueued since column displays the time when the command was received by the VibroSight Server.
- The Execution start column displays the time when the command was run (started) by the VibroSight Server.
- The Execution duration column displays how long the command took to run on the VibroSight Server.
- The Type column displays the type of the command: Copy or Purge.
- The Status column displays the status of the command (job):
 - Not queued – The command has been created on the VibroSight Server and will be added to the list (queue). This status has a very brief duration and probably won't be seen.
 - Queued – The command is in the list (queue) and will run when earlier commands are finished.
 - Running – The command is running.
 - Finished – The command is finished running and was successfully completed.
 - Error – The command is finished running but was not successfully completed.

Note:

If an error is displayed, the Log messages tab of the VibroSight Server user interface can be referred to for additional information.

Cancelled – The command was cancelled by the user.

Thrashed – The command was dropped from the list (queue).

Note:

The maximum number of commands (jobs) that can be queued is 30. If more than 30 commands are added to the list (queue), the earlier commands are automatically dropped (thrashed) to make space for the later commands.

- The Range from and Range to columns display the time range of the data affected by the command:
 - For a Copy command, the Range from and Range to columns display the time range of the data copied to the new data repository.

Note:

If a Copy command is configured to copy All data, the data is always copied starting from 01.01.0001 00:00:00 so the Range from column is simply left blank.

For a Purge command, the Range from and Range to columns display the time range of the data purged from the existing data repository.

- The Additional information column displays any additional information about the operation of the command.
 - For example, the location and file name of the data repository affected by the command are typically displayed. In addition, incremental copy number information is also displayed for a Copy command using incremental copies.

Under the list of information displayed, the Clear all button can be used to clear (delete) all of the currently displayed information.

Under the list of information displayed, the Export button can be used to export all of the currently displayed information to a CSV file.

Note:

The information displayed on the Status, Log messages and Data management tabs does not persist. That is, when a VibroSight Server is closed/exited (File > Quit), the information is lost.

Parent topic: [VibroSight Server windows](#)

Related concepts

[An introduction to VibroSight Server](#)

Related tasks

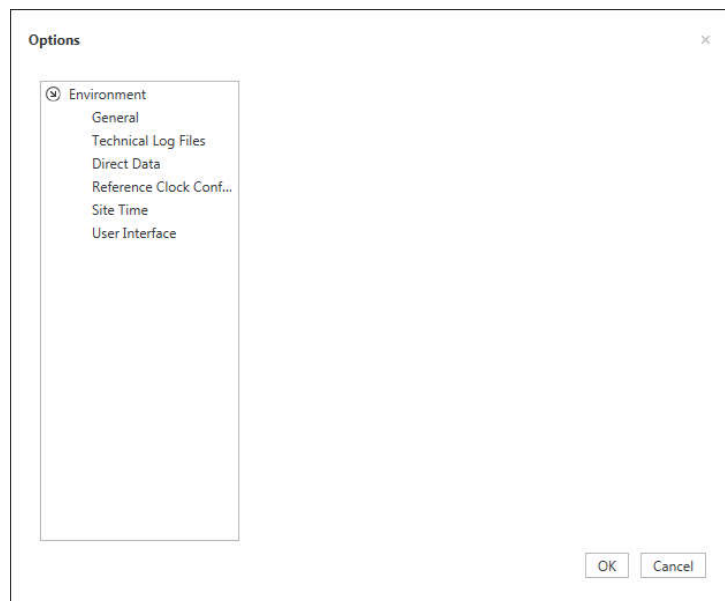
[Apply changes to \(activate\) a running configuration](#)

Related reference

[VibroSight Server Options window](#)

VibroSight Server Options window

The VibroSight Server Options window allows you to configure a number of VibroSight Server settings.



VibroSight Server Options window

The Options window is divided into two parts:

1. On the left, a tree structure view of the various categories and settings that are available.
2. On the right, options available for the currently selected setting.

Environment - General

Server instance name

The server instance name used by the VibroSight Server.

To change the server instance name, enter a new name in the Server instance name text box, then click OK to apply the new name to the VibroSight Server.

The VibroSight Server will automatically stop (which temporarily interrupts the operation of the server), change its name, then restart using the new name.

Note:

VibroSight Server instance names are limited to 18 characters, so the Server instance name text box is limited to 18 characters.

VibroSight allows only alphanumeric characters (A to , a to z, 0 to 9), the hyphen-minus character (-) and the underscore character (_) to be used for VibroSight Server names.

It is recommended to choose appropriate VibroSight Server names in order to avoid name conflicts arising due to truncation and/or additional databases being created during automatic data management.

Environment - Technical log files

Log file name

The folder in which log files are stored. To change the default location or file name, enter a new location and file name, or click the browse button.

Log level

Specify the level of detail to be written into the log files:

- Off
- Trace
- Debug
- Information
- Warning
- Error
- Fatal

Advanced

Displays a window that allows you to configure different log files and logging levels for various components of a VibroSight Server.

Environment - Reference clock configuration

NTP configuration

Select Enabled in order for the VibroSight Server to use an NTP server as its reference clock (that is, connect to use the NTP server specified in the NTP server text box).

In the NTP server text box, type the IP address (in dot-decimal notation) of the NTP server available on the network for use by the VibroSight monitoring system.

Polling interval specifies how frequently the NTP server should be checked by the VibroSight Server. (2 seconds is the default polling interval value.)

Note:

If an NTP server is not used (that is, Enabled is not selected), then VibroSight Server will default to using the local clock on the host computer as the reference.

Clock monitoring

Acceptable drift before notification specifies by how much the reference clock (either NTP server or local clock on the host computer) can drift between polls. If the VibroSight Server detects a drift greater than the acceptable drift, a message will be generated to inform the user.

Environment - Site time

Site time

The time zone used by the VibroSight Server in terms of coordinated universal time (UTC).

To select the Time zone, either use the drop-down list box to select one of the available time zones or click Use current to use the time zone configured on the computer running the VibroSight Server including the daylight saving time settings (Windows > Control Panel > Date and Time).

Select Adjust for daylight saving time to automatically observe daylight saving time.

Environment - User interface

Performance counter monitors

The performance counter monitors (VibroSight Server status indicators) can be displayed either graphically or numerically.

Select Display mode: Graphic mode to display the performance counter monitors graphically, that is, the recent history of values of the indicator are displayed as a plot against time and the latest value of the indicator is displayed as a numerical value. This is the default mode.

Select Display mode: Text mode to display the performance counter monitors numerically, that is, the latest value of the indicator is displayed as a numerical value.

Parent topic: [VibroSight Server windows](#)

Related concepts

[VibroSight Server user interface](#)

Related tasks

[Setting VibroSight Server options](#)

[Changing the name of a VibroSight Server](#)

An introduction to VibroSight System Manager

The VibroSight software uses a client-server architecture to distribute the functional requirements of the system across several software modules and  VibroSight System Manager provides the tools to manage the hardware and software for both VM600 and VibroSmart DMS systems.

Note:

Starting with VibroSight version 2.9.1, the VibroSight System Manager software does not require a user licence in order to run.

For VM600 cards (XMx16/XIO16T) and VibroSmart DMS modules, VibroSight System Manager is used to:

- Manage VibroSight servers, access rights, licensing and databases for VibroSight host computers, activate licensing, upgrade firmware and databases for a host computer running VibroSight
- Configure IP addresses and NTP settings, upgrade firmware and save diagnostic information for the devices (cards and modules).

In addition, for the VM600 CPUR/IOCR card pair, VibroSight System Manager is used to:

- Configure IP addresses, upgrade firmware and save diagnostic information for the cards.

Note:

VibroSight Configurator and VibroSight System Manager are the only VibroSight software modules used with the CPUR/IOCR card pair.

Some VibroSight System Manager commands can be performed in parallel in order to ensure consistency and save time when managing VibroSight systems. These commands can act on more than one device of the same type (VM600 card or VibroSmart DMS module) at the same time. For example:

- The Change Firmware command can be used to update multiple VibroSmart DMS devices of the same type to the same version of firmware.
- The NTP Settings command can be used to configure multiple VM600 cards or VibroSmart DMS modules of the same type to use the same NTP server.

To identify which VibroSight System Manager commands can be performed in parallel, use CTRL+click or SHIFT-click to select multiple devices of the same type (VM600 card or VibroSmart DMS module) in the System Explorer window, as only commands that can be performed in parallel remain available in the Actions window when more than one device is selected.

Working with VibroSight data repositories

VibroSight uses data repositories for the storage of measurement data, events (alarms) and other machinery monitoring system information in order to allow the subsequent analysis of “historical”

data.

The types of data repository supported by VibroSight includes the following:

- VibroSight historical data folders (*.vshdf) and VibroSight historical data archives (*.vshda)
- VibroSight databases (*.vssrvdb).

Note:

VibroSight 3.0.0 or later exclusively uses data repositories based on the VibroSight historical data system (that is, VibroSight historical data folders (*.vshdf) and VibroSight historical data archives (*.vshda)).

Existing data repositories created with earlier versions of VibroSight must be manually migrated from VibroSight databases (*.vssrvdb) to the VibroSight historical data system before they can be used with VibroSight 3.0.0 or later. This is done using the VibroSight System Manager Database Update and Copy commands.

VibroSight System Manager is used to manage and work with VibroSight data repositories as required by the data management needs of a VibroSight application. VibroSight System Manager commands (operations) are available to perform copying, summarising, updating and purging of VibroSight data repositories.

For most of the VibroSight System Manager data repository commands, there are equivalent command-line tools that allow a task scheduler, such as Windows Task Scheduler, to automate data management for a VibroSight application.

Note:

It is always recommended to back up your VibroSight machinery monitoring system data before performing any data repository operation.

Related concepts

[Working with VibroSight data repositories - VibroSight Configurator and VibroSight Server operations versus VibroSight System Manager commands](#)

Dynamic host configuration protocol (DHCP)

The dynamic host configuration protocol (DHCP) is a network configuration protocol for IP-based networks that simplifies the allocation of IP addresses to network devices.

Using DHCP on a network means that a network administrator does not have to manually assign and the user does not have to manually enter an IP address for each device on the network. Instead, the network uses a DHCP server that has been assigned a range (pool) of available IP addresses by a network administrator.

When a new network device running a DHCP client (such as a VM600 XMx16 card or a VibroSmart DMS device) joins the network, the DHCP server will assign (loan) an IP address to the device from its pool. When the device leaves the network, the device will release the IP address, for reuse by the DHCP server. In order to do this, the DHCP server maintains a record of its IP address pool – which addresses are in use and which are still free to be used (and reused).

Note:

It is possible, and quite typical, for a network to use a combination of DHCP assigned, auto IP assigned and/or manually assigned addresses for its attached devices. However, good network administration is necessary to ensure that an IP address that has already been allocated in one way is not reused elsewhere in the network.

For example, an IP address that has already been allocated to a DHCP server must not manually reused (assigned) elsewhere in the network. Therefore, it is always recommended to contact your IT department or network administrator before manually assigning an IP address.

Related concepts

[Auto IP](#)

Related tasks

[Configuring IP settings](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a DHCP server](#)

[Configuring IP settings for a VM600 CPUR/IOCR card pair using a DHCP server](#)

[Configuring IP settings for a VibroSmart DMS module using a DHCP server](#)

Related reference

[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)

[VibroSmart VSV30x module / VSB300 terminal base factory assigned defaults](#)

[VibroSmart VSI010 module / VSB010 terminal base factory assigned defaults](#)

[Network time protocol \(NTP\)](#)

Auto IP

Auto IP addressing (also known as automatic private IP addressing or APIA) is a way of automatically assigning IP addresses to network devices.

Using auto IP on a network means that a network administrator does not have to manually assign and the user does not have to manually enter an IP address for each device on the network. Instead, the network device automatically assigns itself an available IP address in the reserved range 169.254.1.0 to 169.254.254.255.

Note:

An IP address assigned using auto IP is a link-local address and is only suitable for use on a limited portion of a network (network segment).

When a new network device that supports auto IP (such as a VM600 XMx16 card or a VibroSmart DMS device) joins the network, the device will request an IP address from the DHCP server. If the network device does not receive an IP address (for example, when no DHCP server is available on the network), the network device will then use auto IP to assign itself an IP address. In order to do this, the network device selects a random candidate address within the reserved range and uses the address resolution protocol (ARP) to ensure that the address is not in use on the network. (If a reply is received to an ARP probe, it indicates the candidate IP address is already in use, so a new random candidate IP address is created and the process repeated until an available IP address is found.)

Note:

It is possible, and quite typical, for a network to use a combination of DHCP assigned, auto IP assigned and/or manually assigned addresses for its attached devices. However, good network administration is necessary to ensure that an IP address that has already been allocated in one way is

not reused elsewhere in the network.

For example, an IP address that has already been allocated to a DHCP server must not manually reused (assigned) elsewhere in the network. Therefore, it is always recommended to contact your IT department or network administrator before manually assigning an IP address.

Unlike DHCP, auto IP does not require a DHCP server (or a router acting as a DHCP server) in order to assign an IP address. However, if a network is configured with IP addresses other than 169.254.x.y, network devices with auto IP addresses will not be able to communicate properly.

As DHCP is more commonly used than auto IP for networks employing automatic IP addresses, a network device with an auto IP address can be a sign that there is a problem with the network (unless the network is intentionally configured using auto IP addresses). For example, devices with auto IP addresses that should not have them can be a sign that there is an issue with the DHCP server (or a router acting as a DHCP server), or with cabling.

Related concepts

[Dynamic host configuration protocol \(DHCP\)](#)

Related tasks

[Configuring IP settings](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a DHCP server](#)

[Configuring IP settings for a VM600 CPUR/IOCR card pair using a DHCP server](#)

[Configuring IP settings for a VibroSmart DMS module using a DHCP server](#)

Related reference

[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)

[VibroSmart VSV30x module / VSB300 terminal base factory assigned defaults](#)

[VibroSmart VSI010 module / VSB010 terminal base factory assigned defaults](#)

[Network time protocol \(NTP\)](#)

Access rights

To control the functionality of the software available to different levels of user, the VibroSight software uses a system of access rights.

Levels

The VibroSight software supports three different levels of user rights to control access to features and security aspects of the application:

- Read - Users with Read access rights can use the features of the software only to view.
- Master - Users with Master access rights can enable and disable elements of the software, such as features of the software.
- Admin - Users with Admin access rights have full read and write access to all features of the software.

VibroSight		
User level	Password protected	Security level
Read	No	Lowest

Master	Yes	Middle
Admin	Yes	Highest

Read is the default user level given when a VibroSight software module is started.

Note:

The features (menus, options and tools) that a user can see will depend on their access rights. If you cannot see a feature that you expect to see, check that you are working at the correct user level (with the necessary access rights).

Effects on VibroSight software modules

Access rights are used to limit the changes that users can make when using the VibroSight software. The different software modules that are affected and the restrictions that user levels place on the user are defined in the following tables.

 VibroSight Configurator			
Functionality	User level		
	Read	Master	Admin
View the current configuration	√	√	√
Enable or disable parts of the configuration		√	√
Save the configuration		√	√
Activate the configuration		√	√
Modify the configuration			√
 VibroSight Event Viewer			
Functionality	User level		
	Read	Master	Admin
View events	√	√	√
Acknowledge events		√	√
User events			
Enable or disable the display of events		√	√
 VibroSight Mimic			
No access rights are implemented, so users can access all software functions in accordance with the purchased options authorised by the licence key file			
 VibroSight Scope			
No access rights are implemented, so users can access all software functions			
 VibroSight System Manager			
Functionality	User level		

	Read	Master	Admin
Apply updates to databases			√
 VibroSight Vision			
No access rights are implemented, so users can access all software functions in accordance with the purchased options authorised by the licence key file			

Related tasks[Access rights](#)[Viewing User Levels](#)

Windows services

A Windows service is a special type of program for Windows operating systems that is installed as a Windows service and runs in the background without a graphical user interface. They are intended to provide core operating system features.

Windows services can be configured to start automatically when the operating system is started and run in the background with local system account file privileges (that is, no user log on is required) as long as Windows is running. They can also be started or stopped manually or by an event.

In general, installed Windows services can be managed by the Services (found under Administrative Tools in Windows Control Panel). Other Windows components such as Windows Task Manager have limited Service management features, for example, to show a list of installed services and start or stop them.

Note:

The VibroSight software allows a VibroSight Server to be run as a Windows service in order to take advantage of these features.

VibroSight and Windows services

When VibroSight is installed on a computer, the VibroSight Host Service program is installed and registered as a Windows service (as part of the VibroSight software installation process) in order to allow the configuration and management of VibroSight Servers as Windows services. VibroSight Host Service runs by default and can be stopped or started from VibroSight System Manager using the Host Service Stop/Start command available from the Actions window (or from Windows Services or Windows Control Panel).

Any VibroSight Server can be configured to run as a Windows service from VibroSight System Manager using the VibroSight Server Register command available from the Actions window. A VibroSight Server Create command is also available to create a new VibroSight Server and automatically register the VibroSight Server as a Windows service.

Related concepts[VibroSight Computer](#)[VibroSight Server management](#)**Related tasks**[Creating a VibroSight Modbus Server](#)[Viewing VibroSight Host Service information](#)

VM600 card and VibroSmart DMS device diagnostic logs

During normal operation, VM600 cards and VibroSmart DMS devices record operating information about themselves in diagnostic logs.

Although not of any utility to the end user, these diagnostic log files contain information about the device that can be useful to Meggitt Sensing Systems customer support when investigating certain issues.

As VM600 cards and VibroSmart DMS devices store their diagnostic log files in local volatile memory (that is, in the device), the device's diagnostic logs are effectively lost whenever:

- The power supply to the device is removed, for example, by turning the power supply to the device off and on, or removing and re-inserting the device.
- The device is rebooted (restarted).

Note: Before restarting a device or replacing the device with a spare (hot-swapping), it is recommended to use the  Save Diagnostic Logs command in VibroSight System Manager and save a copy of the device's diagnostic information to the host computer. Otherwise this information will be lost.

Related tasks

[Saving diagnostic logs from a VM600 card or VibroSmart DMS device](#)

VibroSight software diagnostic information

During normal operation, VibroSight records operating information about the VibroSight software modules in diagnostic log files.

Although not of any utility to the end user, these diagnostic log files contain information about the software that can be useful to Meggitt Sensing Systems customer support when investigating certain issues.

Related tasks

[Saving diagnostic information from the VibroSight software](#)

Starting VibroSight System Manager

There are several ways in which VibroSight System Manager can be started.

For example:

- From a shortcut to the VibroSight System Manager executable program file ( XmsSystemManager.exe) on the Windows desktop.
- From the Windows Start menu, by clicking the Start button, then clicking All Programs Meggitt VibroSight System Manager.
- From the VibroSight Welcome Center, by clicking System Manager.

Viewing VibroSight Host Service information

You can view VibroSight Host Service information at any time using VibroSight System Manager.

VibroSight Host Service information includes detailed information about the VibroSight Host Service program (itself a Windows service) running on the host computer, such as the software version and status, and information about the VibroSight Servers running as Windows services on the host computer.

1. Start VibroSight System Manager.
2. Select the host computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The main window (central area) of VibroSight System Manager updates to show the VibroSight Host Service tab (and Licensing Information tab) for the host computer.

3. Click the VibroSight Host Service tab to view detailed information about the VibroSight Host Service program under VibroSight Host Service and any VibroSight Servers running on the host computer under Server Instances.

Note:

The VibroSight Servers listed under a host computer in the VibroSight Hosts view are either:
VibroSight Servers registered on the host computer as a Windows service, which are listed even if they are not currently running.

VibroSight Servers currently running on the host computer that were started using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

Parent topic: [VibroSight Computer](#)

Related concepts

[Windows services](#)

Related tasks

[Viewing VibroSight Server information using VibroSight System Manager](#)

Viewing licensing information

You can view licensing information at any time using VibroSight System Manager.

The licensing information provides detailed information about the VibroSight software running on a computer, including software edition, version, order number, system information (used to generate the licence registration file) and other software options.

1. Start VibroSight System Manager.
2. Select your computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows > Control Panel > System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The main window (central area) of VibroSight System Manager updates to show the VibroSight Host Service and Licensing Information tabs.

3. Click the Licensing Information tab to view detailed information about the version of VibroSight software running on the computer.

Parent topic: [Licensing](#)

Viewing all network-enabled devices

VibroSight System Manager can be used to view all of the network-enabled devices from Meggitt Sensing Systems currently available on the network. This includes VM600 cards and VibroSmart DMS modules that are compatible with the VibroSight software.

Ensure that the power supply to the VM600 rack and/or VibroSmart DMS is on and that the rack and/or DMS is connected to the same network as the computer running the VibroSight software.

To view all of the network-enabled devices currently available on the network:

1. Start VibroSight System Manager.
2. In the VibroSight System Manager window that appears, the Devices tree structure view of the System Explorer (left) lists of all of the devices that the computer can see.
3. Expand the  node for each type of device (for example, VSV30x modules *or* XMV16 cards) to view a list of individual devices of this type that can be seen on the network.

The devices that are available on the network are listed in a serial number and (IP address) format, for example, xxxxxxxx (xxx.xxx.xxx.xxx).

Note:

As an IP address can be easily changed, a VM600 card such as a CPUR or an XMx16 should be identified by its serial number (xxxxxxx).

Similarly, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

Viewing VibroSmart DMS device information

You can view information about a VibroSmart DMS device at any time using VibroSight System Manager.

VibroSmart DMS device information provides detailed information about the status and operation of individual devices in a VibroSmart DMS network.

The information available is arranged under the headings: Global Information, Time Synchronisation, Network, Diagnostic, Module PNR and Base PNR.

Note:

The information available (headings and subheadings) depends on the VibroSmart DMS device. Not all devices support all items of information.

To view the information available for a VibroSmart DMS device:

1. In VibroSight System Manager, select a VibroSmart DMS device from the Devices tree-view of the System Explorer.

Note:

As an IP address can be easily changed, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

2. The main VibroSight System Manager window (centre) updates to display detailed information about the device, using the appropriate headings.

Related tasks

[Working with a VibroSmart VSV30x module](#)

Related reference

[VibroSmart DMS device operating modes](#)

Related information

[VibroSmart DMS module indicating a failure on safety function](#)

Setting up an Ethernet connection

Setting up an Ethernet connection for a network-enabled device from Meggitt Sensing Systems, such as a VM600 card or a VibroSmart DMS module, is easy thanks to the zero-configuration networking (zeroconf) protocols.

Before use, ensure that:

- **VM600 Card** For VM600 cards, that the cards are installed in a VM600 rack.
 - **VibroSmart DMS** For VibroSmart DMS modules, that the Ethernet connector being used (on either side of the terminal base) is selected by the DIP switch located in the terminal base.
1. For VM600 cards, connect the network cable from the host computer (running VibroSight) to an Ethernet (RJ45) connector on either the XMC16 card, XMV16 card or the associated XIO16T card.

Note:

The factory assigned defaults for a VM600 card pair is as follows:

The front Ethernet port (XMC16 and XMV16) is enabled

The rear Ethernet port (XIO16T) is disabled.

Therefore, when a card pair is connected to a network for the first time, the front Ethernet port (XMC16 and XMV16) should be used.

Note:

VM600 cards support gigabit Ethernet (1 Gbps), so cables and other network components (such as switches) should support gigabit Ethernet for maximum system performance.

2. For VibroSmart DMS modules, connect the network cable from the host computer (running VibroSight) to an Ethernet (RJ45) connector on the terminal base for the module.

Note:

Ensure that the DIP switch (located in the terminal base) is down to select the Ethernet connectors (Eth1 and Eth2).

Note:

VibroSmart DMS modules support Fast Ethernet (100 Mbps), so any cables and other network components (such as switches) should also support Fast Ethernet for maximum system performance.

3. Typically, an IP address is assigned to each device in the Meggitt factory as part of the manufacturing and test process. This IP address should be changed in order to comply with any required network settings.
4. To verify that the device is connected to your network, start VibroSight System Manager.
5. In VibroSight System Manager, the Devices tree structure of the System Explorer (left) lists of all of the devices that the computer can see.

Click on the  node for each device type in order to view a list of devices that can be seen on the network. Each device that is available on the network is listed in a serial number and IP address format, for example, xxxxxxxx (xxx.xxx.xxx.xxx).

Note:

As an IP address can be easily changed, a VM600 card such as a CPUR or an XMx16 should be identified by its serial number (xxxxxxx).

Similarly, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

6. To check that the device is connected to your subnet, at the Windows command prompt, type `ping xxx.xxx.xxx.xxx`, where xxx.xxx.xxx.xxx is replaced with the IP address listed in VibroSight System Manager).

If the device replies, this means it is in the same subnet as your computer and that it is ready to be used.

Note:

The fact that the device (card or module) appears in the Devices tree structure of the System Explorer does not mean that the card is in your subnet, as `eroconf` (the network discovery

protocols implemented in VibroSight) can find cards all over a network. To be able to communicate with the device, configure an IP address belonging to the same subnet as the computer used for this communication.

- **Using the Windows command prompt**

When using the VibroSight software, it may be necessary to use the Windows command prompt to perform certain tasks.

Related concepts

[System bus \(SBUS\)](#)

Related tasks

[Enabling and disabling Ethernet ports for a VM600 card pair](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a DHCP server](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a static IP address](#)

[Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

[Checking the firmware](#)

[Changing firmware](#)

[Configuring IP settings for a VibroSmart DMS module using a DHCP server](#)

[Configuring IP settings for a VibroSmart DMS module using a static IP address](#)

Related reference

[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)

[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)

[VibroSmart VSV30x module / VSB300 terminal base factory assigned defaults](#)

[VibroSmart VSI010 module / VSB010 terminal base factory assigned defaults](#)

Related information

[VibroSight networking](#)

Using the Windows command prompt

When using the VibroSight software, it may be necessary to use the Windows command prompt to perform certain tasks.

The command prompt (for example, C:) appears in the command prompt window, which is a text-based interface that allows users to interact with the operating system of their computer. Commands are entered by directly typing them at the command prompt.

The command prompt is also known as the C prompt, command-line prompt, system prompt or MS-DOS prompt.

Note: The following procedure is for a  Windows 7 computer.

1. A command prompt window can be started in one of the following ways:
 - a. Click the Windows Start button, then click All Programs Accessories Command Prompt.
 - b. Click the Windows Start button, then type `co` and in the search box at the bottom of the Start Menu and then click Command Prompt when it appears in the results.
 - c. Press the Windows logo key+R to display the Run dialog box, then type `c d` in the Open text box and press ENTER.

A command prompt window appears.

2. At the command prompt (for example, C:), type the required command and then press ENTER. For example, type `r` and then press ENTER, to see the name and version of the

operating system on your computer.

Note: Further information on the commands available at the command prompt can be found in your operating system help or manuals.

3. The command prompt window can be closed in one of the following ways:
 - a. At the command prompt, type `i` and then press ENTER.
 - a. Or click the  Close button.

Parent topic: [Setting up an Ethernet connection](#)

Configuration

The VibroSight System Manager provides standard operations for the configuration and management of network devices, such as VM600 cards or VibroSmart DMS modules.

- [Configuring IP settings](#)
You can configure the IP settings of a VM600 card or VibroSmart DMS module using the VibroSight System Manager Configuration tools.
- [Identifying a VM600 XMx16 card in a rack using VibroSight System Manager](#)
You can identify a VM600 XMx16 card in a rack using either VibroSight System Manager or VibroSight Configurator.
- [Identifying a VibroSmart module in a DMS](#)
You can identify a VibroSmart module in a DMS using a feature of the VibroSight System Manager software.
- [Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)
The NTP settings of a VM600 card such as an XMV16 or a VibroSmart DMS device such as a VSV30x are configured using the VibroSight System Manager Configuration tools.

Configuring IP settings

You can configure the IP settings of a VM600 card or VibroSmart DMS module using the VibroSight System Manager Configuration tools.

In order to communicate with a network device, it has to be in the correct subnet. If the predefined IP address of the network device does not belong to the same subnet as the computer running VibroSight, it must be changed.

The IP address of a device can be changed using either:

- A DHCP server (automatically)
- Static IP addresses (manually).

A DHCP server will usually assign IP addresses that are automatically in the correct subnet for a network. However, static IP addressees should be assigned carefully, with consideration for the subnet.

Note:

It is possible, and quite typical, for a network to use a combination of DHCP assigned, auto IP assigned and/or manually assigned addresses for its attached devices. However, good network administration is necessary to ensure that an IP address that has already been allocated in one way is not reused elsewhere in the network.

For example, an IP address that has already been allocated to a DHCP server must not manually reused (assigned) elsewhere in the network. Therefore, it is always recommended to contact your IT department or network administrator before manually assigning an IP address.

- [Configuring IP settings for a VM600 XMx16/XIO16T card pair using a DHCP server](#)
The IP settings of a VM600 XMx16/XIO16T card pair are configured using the VibroSight System Manager Configuration tools.
- [Configuring IP settings for a VM600 XMx16/XIO16T card pair using a static IP address](#)
The IP settings of a VM600 XMx16/XIO16T card pair are configured using the VibroSight System Manager Configuration tools.
- [Configuring IP settings for a VM600 CPUR/IOCR card pair using a DHCP server](#)
The IP settings of a VM600 CPUR/IOCR card pair are configured using the VibroSight System Manager Configuration tools.
- [Configuring IP settings for a VM600 CPUR/IOCR card pair using a static IP address](#)
The IP settings of a VM600 CPUR/IOCR card pair are configured using the VibroSight System Manager Configuration tools.
- [Enabling and disabling Ethernet ports for a VM600 card pair](#)
The Ethernet ports of a VM600 card pair should be enabled or disabled depending on which of these system Ethernet ports are used for communications in a particular application.
- [Configuring IP settings for a VibroSmart DMS module using a DHCP server](#)
The IP settings of a VibroSmart DMS module are configured using the VibroSight System Manager Configuration tools.
- [Configuring IP settings for a VibroSmart DMS module using a static IP address](#)
The IP settings of a VibroSmart DMS module are configured using the VibroSight System Manager Configuration tools.
- [Using the Windows ipconfig command](#)
The ipconfig command is a Windows operating system utility that displays the network settings currently assigned on a network.

Parent topic: [Configuration](#)

Related concepts

[Dynamic host configuration protocol \(DHCP\)](#)

[Auto IP](#)

Configuring IP settings for a VM600 XMx16/XIO16T card pair using a DHCP server

The IP settings of a VM600 XMx16/XIO16T card pair are configured using the VibroSight System Manager Configuration tools.

Note:

For most applications, such as condition monitoring, only one Ethernet port of a VM600 XMx16/XIO16T card pair is typically used: either the XMx16 Ethernet port (ETHERNET) *or* the XIO16T Ethernet port (ETHERNET). Any unused Ethernet port of a VM600 XMx16/XIO16T card pair should be disabled.

If both Ethernet ports of an XMx16/XIO16T card pair are required by an application, then a different subnet mask must be used for each Ethernet port in order to partition the networks used and ensure that the communications on each Ethernet port are kept separate from one another.

To change the IP address of a VM600 XMx16/XIO16T card pair using DHCP requires that a DHCP server exists on the same network as the VibroSight system.

A DHCP server assigns IP addresses to all of the computers on a network, recording the IP addresses used to ensure that there are no conflicts. This helps to reduce the administrative effort required and eliminates the possibility of human error.

Note:

Contact your IT department or network administrator for information on whether a DHCP server is available on your network.

To configure the IP address and settings of a VM600 XMx16/XIO16T card pair using DHCP:

1. Start VibroSight System Manager.
2. Select the VM600 XMx16 card  from the Devices structure view of the System Explorer.
Note:

As an IP address can be easily changed, a VM600 card such as an XMx16 should be identified by its serial number (xxxxxxx).

The Actions window (right) of the System Manager will show the operations that are available for the card you have selected. If you cannot see the Actions window, click View Actions.

3. Click  IP Settings under Configuration in the Actions window.

The IP Settings window appears.

4. Select the appropriate tab depending on whether you are configuring the network connection on the front of the rack (XMx16) or the network connection on the rear of the VM600 rack (XIO16T).

The **XMx16 card** tab corresponds to the Ethernet port on the XMx16 card (front of the VM600 rack) and the **XIO16T card** tab corresponds to the Ethernet port on the XIO16T card (rear of the VM600 rack). Either Ethernet port can be used for communication with a host computer running VibroSight.

On each tab, the Disabled option button shows if the Ethernet port is disabled (or enabled).

Note:

Any unused Ethernet port of a VM600 XMx16/XIO16T card pair should be disabled.

5. Select the Use DHCP server option. Click Finish.

The card will communicate with the DHCP server in the background and a unique IP address for the Ethernet port will automatically be assigned.

6. The System Explorer window (left) will update to show the new IP configuration information in the Devices structure view. The card should now be accessible in your subnet.
7. To test if the card is accessible, at a Windows command prompt, type `ping xxx.xxx.xxx.xxx` where xxx.xxx.xxx.xxx should be replaced with the IP address, in dot-decimal notation that was just assigned).

If the card replies, this means it is in the same subnet as your computer and that it is ready to be used.

Parent topic: [Configuring IP settings](#)

Related concepts

[Dynamic host configuration protocol \(DHCP\)](#)

[Auto IP](#)

Related tasks

[Enabling and disabling Ethernet ports for a VM600 card pair](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a static IP address](#)

[Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

[Checking the firmware](#)

[Changing firmware](#)

[Setting up an Ethernet connection](#)

Related reference

[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)

Configuring IP settings for a VM600 XMx16/XIO16T card pair using a static IP address

The IP settings of a VM600 XMx16/XIO16T card pair are configured using the VibroSight System Manager Configuration tools.

Note:

For most applications, such as condition monitoring, only one Ethernet port of a VM600 XMx16/XIO16T card pair is typically used: either the XMx16 Ethernet port (ETHERNET) *or* the XIO16T Ethernet port (ETHERNET). Any unused Ethernet port of a VM600 XMx16/XIO16T card pair should be disabled.

If both Ethernet ports of an XMx16/XIO16T card pair are required by an application, then a different subnet mask must be used for each Ethernet port in order to partition the networks used and ensure that the communications on each Ethernet port are kept separate from one another.

To change the IP address of a VM600 XMx16/XIO16T card pair using a static IP address requires that you manually assign a unique IP address (on this VibroSight system network) to the card.

In order to communicate with your card, it has to be in the correct subnet. If the predefined IP address of your card does not belong to your subnet, you will need to change it according to your network settings.

Note:

Contact your IT department or network administrator to ensure that the static IP address to be used is not already used elsewhere on the network, for example, included in the range (pool) of IP addresses assigned to a DHCP server.

To configure the IP address and settings of a VM600 XMx16/XIO16T card pair using a static IP address:

1. Start VibroSight System Manager.
2. Select the VM600 XMx16 card  from the Devices structure view of the System Explorer.
Note:

As an IP address can be easily changed, a VM600 card such as an XMx16 should be identified by its serial number (xxxxxxx).

The Actions window (right) of the System Manager will show the operations that are available for the card you have selected. If you cannot see the Actions window, click View Actions.

3. Click  IP Settings under Configuration in the Actions window.

The IP Settings window appears.

4. Select the appropriate tab depending on whether you are configuring the network connection on the front of the rack (XMx16) or the network connection on the rear of the VM600 rack (XIO16T).

The **XMx16 card** tab corresponds to the Ethernet port on the XMx16 card (front of the VM600 rack) and the **XIO16T card** tab corresponds to the Ethernet port on the XIO16T card (rear of the VM600 rack). Either Ethernet port can be used for communication with a host computer running VibroSight.

On each tab, the Disabled option button shows if the Ethernet port is disabled (or enabled).

Note:

Any unused Ethernet port of a VM600 XMx16/XIO16T card pair should be disabled.

5. Ensure the Use static IP option is selected, then enter the new IP address and Subnet mask (and Default gateway, if used), in dot-decimal notation, for the card in the appropriate fields. Click Finish.
6. The System Explorer window (left) will automatically update to show the new IP configuration information in the Devices structure view. However, this does not necessarily mean that the card is accessible in your subnet.
7. To test if the card is accessible, at a Windows command prompt, type `ping` where xxx.xxx.xxx.xxx should be replaced with the IP address you have just configured).

If the card replies, this means it is in the same subnet as your computer and that it is ready to be used.

Note:

The fact that a device (card or module) appears in the Devices tree structure of the System Explorer does not mean that it is in your subnet, as zeroconf (the network discovery protocols implemented in VibroSight) can find cards all over a network. To be able to communicate with the device, configure an IP address belonging to the same subnet as the computer used for this communication.

Parent topic: [Configuring IP settings](#)

Related tasks

[Enabling and disabling Ethernet ports for a VM600 card pair](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a DHCP server](#)

[Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

[Checking the firmware](#)

[Changing firmware](#)

[Setting up an Ethernet connection](#)

Related reference

[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)

Configuring IP settings for a VM600 CPUR/IOCR card pair using a DHCP server

The IP settings of a VM600 CPUR/IOCR card pair are configured using the VibroSight System Manager Configuration tools.

Note:

In applications such as control systems that use a VM600 CPUx/IOCx card pair as a VM600 rack controller and communications interface between the rack and a third-party control system, and where the CPUx “manages” the configuration of the XMx16/XIO16T card pair, both system Ethernet ports of the VM600 CPUR/IOCR card pair are typically used: the IOCR system Ethernet ports (ETHERNET1 and ETHERNET2). And both Ethernet ports of any associated VM600 XMx16/XIO16T card pair are also typically used: the XMx16 Ethernet port (ETHERNET) *and* the XIO16T Ethernet port (ETHERNET). Any unused Ethernet port should be disabled.

If both Ethernet ports of a CPUx/IOCx card pair are required by an application, then a different subnet mask must be used for each Ethernet port in order to partition the networks used and ensure that the communications on each Ethernet port are kept separate from one another.

To change the IP address of a VM600 CPUR/IOCR card pair using DHCP requires that a DHCP server exists on the same network as the VibroSight system.

A DHCP server assigns IP addresses to all of the computers on a network, recording the IP addresses used to ensure that there are no conflicts. This helps to reduce the administrative effort required and eliminates the possibility of human error.

Note:

Contact your IT department or network administrator for information on whether a DHCP server is available on your network.

To configure the IP address and settings of a VM600 CPUR/IOCR card pair using DHCP:

1. Start VibroSight System Manager.
2. Select the VM600 CPUR card  from the Devices structure view of the System Explorer.

Note:

As an IP address can be easily changed, a VM600 card such as a CPUR should be identified by its serial number (xxxxxxx).

The Actions window (right) of the System Manager will show the operations that are available for the card you have selected. If you cannot see the Actions window, click View Actions.

3. Click  IP Settings under Configuration in the Actions window.

The IP Settings window appears.

4. Select the appropriate tab depending on whether you are configuring the system Ethernet port used for communication with a VM600 XMx16 card pair (ETHERNET1) or the system Ethernet port used for communication with a host computer running software such as VibroSight (ETHERNET2).

The **ETH1 (IOCR J6)** tab corresponds to the system Ethernet port used for communication with a VM600 XMx16 card pair that it is managing and the **ETH2 (IOCR J7)** tab corresponds to the system Ethernet port used for communication with a host computer running software such as VM600 MPS, VM600 CMS and/or VibroSight. Both system Ethernet connectors are on the rear of the VM600 rack (IOCR card).

On each tab, the Disabled option button shows if the Ethernet port is disabled (or enabled).

Note:

Any unused Ethernet port of a VM600 CPUR/IOCR card pair should be disabled.

5. Select the Use DHCP server option. Click Finish.

The card will communicate with the DHCP server in the background and a unique IP address for the Ethernet port will automatically be assigned.

6. The System Explorer window (left) will update to show the new IP configuration information in the Devices structure view. The card (port) should now be accessible in your subnet.
7. To test if the card (port) is accessible, at a Windows command prompt, type `ping` where `xxx.xxx.xxx.xxx` should be replaced with the IP address, in dot-decimal notation that was just assigned).

If the card (port) replies, this means it is in the same subnet as your computer and that it is ready to be used.

Parent topic: [Configuring IP settings](#)

Parent topic: [VM600 CPUR card specific operations](#)

Related concepts

[Dynamic host configuration protocol \(DHCP\)](#)

[Auto IP](#)

Configuring IP settings for a VM600 CPUR/IOCR card pair using a static IP address

The IP settings of a VM600 CPUR/IOCR card pair are configured using the VibroSight System Manager Configuration tools.

Note:

In applications such as control systems that use a VM600 CPUx/IOCx card pair as a VM600 rack controller and communications interface between the rack and a third-party control system, and where the CPUx “manages” the configuration of the XMx16/XIO16T card pair, both system

Ethernet ports of the VM600 CPUR/IOCR card pair are typically used: the IOCR system Ethernet ports (ETHERNET1 and ETHERNET2). And both Ethernet ports of any associated VM600 XMx16/XIO16T card pair are also typically used: the XMx16 Ethernet port (ETHERNET) *and* the XIO16T Ethernet port (ETHERNET). Any unused Ethernet port should be disabled.

If both Ethernet ports of a CPUx/IOCx card pair are required by an application, then a different subnet mask must be used for each Ethernet port in order to partition the networks used and ensure that the communications on each Ethernet port are kept separate from one another.

To change the IP address of a VM600 CPUR/IOCR card pair using a static IP address requires that you manually assign a unique IP address (on this VibroSight system network) to the card.

In order to communicate with your card, it has to be in the correct subnet. If the predefined IP address of your card does not belong to your subnet, you will need to change it according to your network settings.

Note:

Contact your IT department or network administrator to ensure that the static IP address to be used is not already used elsewhere on the network, for example, included in the range (pool) of IP addresses assigned to a DHCP server.

To configure the IP address and settings of a VM600 CPUR/IOCR card pair using a static IP address:

1. Start VibroSight System Manager.
 2. Select the VM600 CPUR card  from the Devices structure view of the System Explorer.
- Note:

As an IP address can be easily changed, a VM600 card such as a CPUR should be identified by its serial number (xxxxxxx).

The Actions window (right) of the System Manager will show the operations that are available for the card you have selected. If you cannot see the Actions window, click View Actions.

3. Click  IP Settings under Configuration in the Actions window.

The IP Settings window appears.

4. Select the appropriate tab depending on whether you are configuring the system Ethernet port used for communication with a VM600 XMx16 card pair (ETHERNET1) or the system Ethernet port used for communication with a host computer running software such as VibroSight (ETHERNET2).

The **ETH1 (IOCR J6)** tab corresponds to the system Ethernet port used for communication with a VM600 XMx16 card pair that it is managing and the **ETH2 (IOCR J7)** tab corresponds to the system Ethernet port used for communication with a host computer running software such as VM600 MPS, VM600 CMS and/or VibroSight. Both system Ethernet connectors are on the rear of the VM600 rack (IOCR card).

On each tab, the Disabled option button shows if the Ethernet port is disabled (or enabled).

Note:

Any unused Ethernet port of a VM600 CPUR/IOCR card pair should be disabled.

5. Ensure the Use static IP option is selected, then enter the new IP address and Subnet mask (and Default gateway, if used), in dot-decimal notation, for the card in the appropriate fields. Click Finish.
6. The System Explorer window (left) will automatically update to show the new IP configuration information in the Devices structure view. However, this does not necessarily mean that the card (port) is accessible in your subnet.
7. To test if the card (port) is accessible, at a Windows command prompt, type `ping` where `xxx.xxx.xxx.xxx` should be replaced with the IP address you have just configured).

If the card (port) replies, this means it is in the same subnet as your computer and that it is ready to be used.

Note:

The fact that a device (card or module) appears in the Devices tree structure of the System Explorer does not mean that it is in your subnet, as `eroconf` (the network discovery protocols implemented in VibroSight) can find cards all over a network. To be able to communicate with the device, configure an IP address belonging to the same subnet as the computer used for this communication.

Parent topic: [Configuring IP settings](#)

Parent topic: [VM600 CPUR card specific operations](#)

Enabling and disabling Ethernet ports for a VM600 card pair

The Ethernet ports of a VM600 card pair should be enabled or disabled depending on which of these system Ethernet ports are used for communications in a particular application.

Note:

For most applications, such as condition monitoring, only one Ethernet port of a VM600 XMx16/XIO16T card pair is typically used: either the XMx16 Ethernet port (ETHERNET) *or* the XIO16T Ethernet port (ETHERNET). Any unused Ethernet port of an XMx16/XIO16T card pair should be disabled.

If both Ethernet ports of an XMx16/XIO16T card pair are required by an application, then a different subnet mask must be used for each Ethernet port in order to partition the networks used and ensure that the communications on each Ethernet port are kept separate from one another.

In control system applications that use a VM600 CPUx/IOCx card pair as a VM600 rack controller and communications interface between the rack and a third-party control system, and where the CPUx “manages” the configuration of the XMx16/XIO16T card pair, both system Ethernet ports of the VM600 CPUR/IOCR card pair are typically used: the IOCR system Ethernet ports (ETHERNET1 and ETHERNET2). And both Ethernet ports of any associated VM600 XMx16/XIO16T card pair are also typically used: the XMx16 Ethernet port (ETHERNET) *and* the XIO16T Ethernet port (ETHERNET). Any unused Ethernet port should be disabled.

If both Ethernet ports of a CPUx/IOCx card pair are required by an application, then a different

subnet mask must be used for each Ethernet port in order to partition the networks used and ensure that the communications on each Ethernet port are kept separate from one another.

To enable or disable an Ethernet port for a VM600 card pair:

1. Start VibroSight System Manager.
2. Select the VM600 card  from the Devices structure view of the System Explorer.
Note:

As an IP address can be easily changed, a VM600 card such as a CPUR or an XMx16 should be identified by its serial number (xxxxxxx).

The Actions window of the System Manager will show the operations that are available for the card you have selected. If you cannot see the Actions window, click View Actions.

3. Click  IP Settings under Configuration in the Actions window.

The IP Settings window appears.

4. Select the tab corresponding to an Ethernet port in order to view its settings.

For an XMx16/XIO16T card pair, the **XMx16 card** tab corresponds to the Ethernet port on the XMx16 card (front of the VM600 rack) and the **XIO16T card** tab corresponds to the Ethernet port on the XIO16T card (rear of the VM600 rack). Either Ethernet port can be used for communication with a host computer running VibroSight.

For a CPUR/IOCR card pair, the **ETH1 (IOCR J6)** tab corresponds to the system Ethernet port used for communication with a VM600 XMx16 card pair that it is managing and the **ETH2 (IOCR J7)** tab corresponds to the system Ethernet port used for communication with a host computer running software such as VM600 MPS, VM600 CMS and/or VibroSight. Both system Ethernet connectors are on the rear of the VM600 rack (IOCR card).

On each tab, the Disabled option button shows if the Ethernet port is disabled (or enabled).

5. To enable and use an Ethernet port, click either Use DHCP server or Use static IP.

Only select Use DHCP server if a DHCP is available and has been configured for your network.

If you select Use static IP, then the Static IP settings (IP address, Subnet mask and Default gateway, if required) must also be configured.

6. To disable an Ethernet port, click Disabled.
Note:

Only used Ethernet ports should be enabled and all unused Ethernet ports should be disabled.

Parent topic: [Configuring IP settings](#)

Parent topic: [VM600 CPUR card specific operations](#)

Related tasks

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a DHCP server](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a static IP address](#)

[Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

[Checking the firmware](#)

[Changing firmware](#)[Setting up an Ethernet connection](#)**Related reference**[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)**Related information**[Network connections](#)

Configuring IP settings for a VibroSmart DMS module using a DHCP server

The IP settings of a VibroSmart DMS module are configured using the VibroSight System Manager Configuration tools.

To change the IP address of a module using DHCP requires that a DHCP server exists on the same network as the VibroSight system.

A DHCP server assigns IP addresses to all of the computers on a network, recording the IP addresses used to ensure that there are no conflicts. This helps to reduce the administrative effort required and eliminates the possibility of human error.

Note:

Contact your IT department or network administrator for information on whether a DHCP server is available on your network.

To configure the IP address of your VibroSmart DMS module using DHCP:

1. Start VibroSight System Manager.
2. Select your module from the Devices structure view of the System Explorer.

Note:

As an IP address can be easily changed, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

The Actions window (right) of the System Manager window will show the operations that are available for the module you have selected. If you cannot see the Actions window, click View Actions.

3. Click  IP Settings under Configuration in the Actions window.

The IP Settings window appears.

4. Select the Use DHCP server option. Click Finish.

The module will communicate with the DHCP server in the background and a unique IP address for the module will automatically be assigned.

5. The System Explorer view will update to show the new IP configuration information in the Devices structure view. The module should now be accessible in your subnet.

6. To test if the module is accessible, at a Windows command prompt, type `ping` where `xxx.xxx.xxx.xxx` should be replaced with the IP address, in dot-decimal notation that was just assigned).

If the module replies, this means it is in the same subnet as your computer and that it is ready to be used.

Parent topic: [Configuring IP settings](#)

Related concepts

[Dynamic host configuration protocol \(DHCP\)](#)

[Auto IP](#)

[System bus \(SBUS\)](#)

Related tasks

[Configuring IP settings for a VibroSmart DMS module using a static IP address](#)

[Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

[Checking the firmware](#)

[Changing firmware](#)

[Setting up an Ethernet connection](#)

Related reference

[VibroSmart VSV30x module / VSB300 terminal base factory assigned defaults](#)

[VibroSmart VSI010 module / VSB010 terminal base factory assigned defaults](#)

Configuring IP settings for a VibroSmart DMS module using a static IP address

The IP settings of a VibroSmart DMS module are configured using the VibroSight System Manager Configuration tools.

To change the IP address of a module using a static IP address requires that you manually assign a unique IP address (on this VibroSight system network) to the module.

In order to communicate with your module, it has to be in the correct subnet. If the predefined IP address of your module does not belong to your subnet, you will need to change it according to your network settings.

Note:

Contact your IT department or network administrator to ensure that the static IP address to be used is not already used elsewhere on the network, for example, included in the range (pool) of IP addresses assigned to a DHCP server.

To configure the IP address of your VibroSmart DMS module:

1. Start VibroSight System Manager.
2. Select your module from the Devices structure view of the System Explorer.

Note:

As an IP address can be easily changed, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

The Actions window of the System Manager will show the operations that are available for the module you have selected. If you cannot see the Actions window, click View Actions.

3. Click  IP Settings under Configuration in the Actions window.

The IP Settings window appears.

4. Ensure the Use static IP option is selected, then enter the new IP address and Subnet mask (and Default gateway, if used), in dot-decimal notation, for the module in the appropriate fields. Click Finish.
5. The System Explorer will automatically update to show the new IP configuration information in the Devices structure view. However, this does not necessarily mean that the module is accessible in your subnet.
6. To test if the module is accessible, at a Windows command prompt, type `ping` where `xxx.xxx.xxx.xxx` should be replaced with the IP address you have just configured).

If the module replies, this means it is in the same subnet as your computer and that it is ready to be used.

Note:

The fact that the device (card or module) appears in the Devices tree structure of the System Explorer does not mean that the card is in your subnet, as `eroconf` (the network discovery protocols implemented in VibroSight) can find cards all over a network. To be able to communicate with the device, configure an IP address belonging to the same subnet as the computer used for this communication.

Parent topic: [Configuring IP settings](#)

Related concepts

[System bus \(SBUS\)](#)

Related tasks

[Configuring IP settings for a VibroSmart DMS module using a DHCP server](#)

[Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

[Checking the firmware](#)

[Changing firmware](#)

[Setting up an Ethernet connection](#)

Related reference

[VibroSmart VSV30x module / VSB300 terminal base factory assigned defaults](#)

[VibroSmart VSI010 module / VSB010 terminal base factory assigned defaults](#)

Using the Windows `ipconfig` command

The `ipconfig` command is a Windows operating system utility that displays the network settings currently assigned on a network.

The `ipconfig` command is a command line utility (that is, text-based) and is used at the Windows command prompt (for example, `C: >`)

Note: The following procedure is for a  Windows 7 computer.

1. Start a Windows command prompt window in one of the following ways:
 - a. Click the Windows Start button, then click All Programs Accessories Command

Prompt.

- b. Click the Windows Start button, then type `cmd` in the search box at the bottom of the Start Menu and then click Command Prompt when it appears in the results.
- c. Press the Windows logo key+R to display the Run dialog box, then type `cmd` in the Open text box and press ENTER.

A command prompt window appears.

2. At the command prompt (for example, `C:\`), type `ipconfig` and then press ENTER.

The current basic TCP/IP configuration for all network adapters installed on the computer are displayed. This includes the IP addresses, subnet masks and default gateways.

3. At the command prompt, type `ipconfig /all` and then press ENTER.

A more complete report of the TCP / IP configuration for the network adapters installed on the computer are displayed.

4. The command prompt window can be closed in one of the following ways:
 - a. At the command prompt, type `exit` and then press ENTER.
 - a. Or click the  Close button.

Parent topic: [Configuring IP settings](#)

Identifying a VM600 XMx16 card in a rack using VibroSight System Manager

You can identify a VM600 XMx16 card in a rack using either VibroSight System Manager or VibroSight Configurator.

Controls in VibroSight System Manager and VibroSight Configurator can make the LEDs on the front panel of a VM600 XMx16 card blink (flash). This can be used to help to physically identify a card in a rack.

This can be useful, for example, to identify a card before removing it from the rack or adding connections to the corresponding input / output card in the rear of the rack.

1. Start VibroSight System Manager.
2. Select the VM600 XMx16 card  in the tree structure of the Devices view of the System Explorer.

Note:

As an IP address can be easily changed, a VM600 card such as an XMx16 should be identified by its serial number (xxxxxxx).

The Actions window of the System Manager will show the available tools. If you cannot see the Actions window, click View Actions.

3. Click  Locate (front panel LEDs) under Maintenance in the Actions window.

A VibroSight software window appears when the LED test is activated and the STATUS and DATA LEDs on the front panel of the card will blink orange to indicate that VibroSight

System Manager is identifying the card. After approximately 15 seconds, the blinking will stop and the LEDs will return to indicating the operational status of the card.

4. Click  to close the window.

Parent topic: [Configuration](#)

Related tasks

[Identifying a VM600 XMx16 card in a rack using VibroSight Configurator](#)

[Identifying a VibroSmart module in a DMS](#)

Related reference

[VM600 XMV16 card parameters](#)

[VM600 XMC16 card parameters](#)

Identifying a VibroSmart module in a DMS

You can identify a VibroSmart module in a DMS using a feature of the VibroSight System Manager software.

Using a control in VibroSight System Manager, you can make the LEDs on the front panel of the VibroSmart DMS module blink (flash). This can be used to help to physically identify a module in a network.

This can be useful, for example, to identify a module before removing it from the network or adding connections to the corresponding terminal base.

1. Start VibroSight System Manager.
2. Select your module from the Devices tree-view of the System Explorer.
Note:

As an IP address can be easily changed, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

The Actions window of the System Manager will show the available tools. If you cannot see the Actions window, click View  Actions.

3. Click  Test LED under Maintenance in the Actions window.

A VibroSight software information message appears when the LED test is activated and all of the LEDs on the front panel of the module will blink in a red, green and orange sequence to indicate that the VibroSight System Manager is identifying a module. After approximately 20 seconds, the blinking will stop and the module's LEDs will return to indicating the operational status of the module.

4. Click  to close the message.

Parent topic: [Configuration](#)

Related tasks

[Identifying a VM600 XMx16 card in a rack using VibroSight System Manager](#)

[Identifying a VM600 XMx16 card in a rack using VibroSight Configurator](#)

Related reference

[VibroSmart VSI010 parameters](#)

[VibroSmart VSV30x parameters](#)

Configuring the NTP settings of a VM600 card or VibroSmart DMS module

The NTP settings of a VM600 card such as an XMV16 or a VibroSmart DMS device such as a VSV30x are configured using the VibroSight System Manager Configuration tools.

Configuring the NTP settings for a VM600 card or VibroSmart DMS device simply requires that you set the IP address of the NTP server (that is available on the network) for the card or device.

Systems containing multiple VM600 cards or multiple VibroSmart DMS devices are typically configured to use the NTP server that is available on the network that is, they all use the same NTP server.

Note:

When configuring multiple VM600 cards or multiple VibroSmart DMS devices to use the same NTP server, CTRL+click or SHIFT+click can be used to select multiple cards or devices in the Devices structure view of the System Explorer. Then when the NTP Settings command is run, all of the cards or devices that were selected will be configured to use the same NTP server.

Otherwise, each card or device must be selected and configured individually.

1. Start VibroSight System Manager.
2. Select your card  or module from the Devices structure view of the System Explorer.

Note:

As an IP address can be easily changed, a VM600 card such as an XMx16 should be identified by its serial number (xxxxxxx).

Similarly, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

The Actions window of the System Manager will show the operations that are available for the card or module you have selected. If you cannot see the Actions window, click View Actions.

3. Click  NTP Settings under Configuration in the Actions window.

The NTP Settings window appears.

4. Enter the IP address of your NTP server in the NTP server field and click Finish.
- Note:

The IP address should be entered in dot-decimal notation, for example, 10.10.2.100.

- [Setting up an NTP server on a Windows 7 computer](#)

If your system is being used in an environment where an NTP server is not available, the Windows Time Service (built into the Windows operating system) can be configured to act as

a NTP server on the computer running VibroSight (or on another local computer), using the Windows Registry.

- **[Setting up the Meinberg NTP package on a Windows computer](#)**

If your system is being used in an environment where an NTP server is not available, the computer on which VibroSight has been installed can be configured to act as an NTP server. Meggitt Sensing Systems recommends NTP for Windows (IPv4 only) from Meinberg, available for free from their website.

Parent topic: [Configuration](#)

Related concepts

[System bus \(SBUS\)](#)

Related tasks

[Enabling and disabling Ethernet ports for a VM600 card pair](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a DHCP server](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a static IP address](#)

[Checking the firmware](#)

[Changing firmware](#)

[Setting up an Ethernet connection](#)

[Configuring IP settings for a VibroSmart DMS module using a DHCP server](#)

[Configuring IP settings for a VibroSmart DMS module using a static IP address](#)

Related reference

[Network time protocol \(NTP\)](#)

[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)

[VibroSmart VSV30x module / VSB300 terminal base factory assigned defaults](#)

[VibroSmart VSI010 module / VSB010 terminal base factory assigned defaults](#)

Related information

[VibroSight monitoring system time reference requirements](#)

Setting up an NTP server on a Windows 7 computer

If your system is being used in an environment where an NTP server is not available, the Windows Time Service (built into the Windows operating system) can be configured to act as a NTP server on the computer running VibroSight (or on another local computer), using the Windows Registry.

When a computer has the Windows Time Service enabled as an NTP server, other devices (such as computers and VM600 cards) can synchronise their clocks with this computer.

Note: The following procedure is for a  Windows 7 computer.

1. Start the Windows Registry Editor in one of the following ways:
 - a. Click the Windows Start button, then type `regedit` in the search box at the bottom of the Start menu and then click `regedit.exe` when it appears in the results.
 - b. Press the Windows logo key+R to display the Run dialog box, then type `regedit` in the Open text box and press ENTER.

The Registry Editor window appears.

2. Navigate to the following folder in the Windows registry: `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\TimeProviders\NtpServer`.
3. Double-click the  Enabled icon in the right pane (or right-click and then click Modify).

The Edit DWORD Value window appears.

4. Type `1` in the Value data text box and click **OK**.
Note:

A value of `1` is a `true` value, which enables the NTP server and ensures that the computer acts as a time server.

5. Close the Registry Editor in one of the following ways:
 - a. Click **File** > **Exit** on the Registry Editor menu bar.
 - a. Or click the  **Close** button.
6. To verify the operation of the NTP server, at the Windows command prompt, type `net time /s` and then press ENTER.

The time server will stop (if it was previously running).

7. Then, at the command prompt, type `net time /s` and then press ENTER.

The time server will start.

The IP address of your computer can now be used as the IP address of the NTP server required by your VibroSight system. To discover the IP address of your computer, at the Windows command prompt, type `ipconfig` and then press ENTER.

Parent topic: [Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

Related reference

[Network time protocol \(NTP\)](#)

Related information

[VibroSight monitoring system time reference requirements](#)

Setting up the Meinberg NTP package on a Windows computer

If your system is being used in an environment where an NTP server is not available, the computer on which VibroSight has been installed can be configured to act as an NTP server. Meggitt Sensing Systems recommends NTP for Windows (IPv4 only) from Meinberg, available for free from their website.

The Meinberg NTP for Windows package can be used to act as a NTP server on the computer running VibroSight (or on another local computer). When a computer has the Meinberg NTP for Windows package installed and enabled, other devices (such as computers and VM600 cards) can synchronise their clocks with this computer.

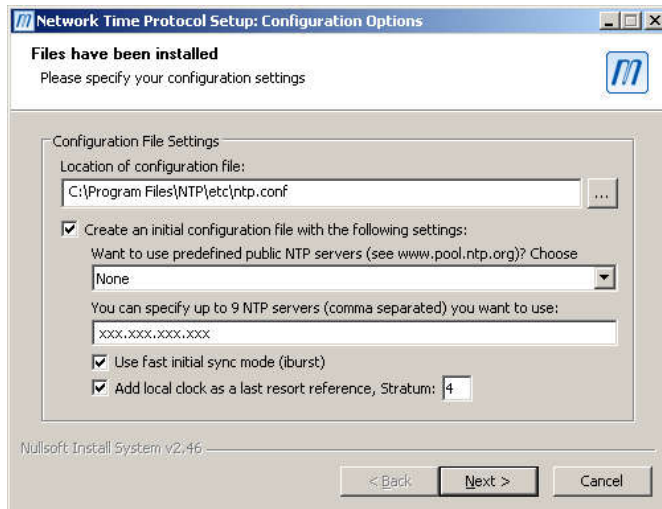
The Meinberg NTP for Windows package is free to use and is available from the Meinberg website (see the link at the bottom of this page).

Note: The Meinberg NTP package can be installed on a  Windows 7 computer.

1. Download the latest version of the NTP for Windows software (IPv4 only) from Meinberg (<http://www.meinbergglobal.com/english/sw/ntp.htm>).
2. Double-click the setup file (for example,  ntp-4.2.4p8-lennon-o-lpv-win32-setup.exe).

Click **I Agree** to accept the terms of the licence agreement.

3. Accept the default installation options, including Choose Install Location (destination folder) and Choose Components (ensure all components are selected).
4. When the *Configuration Options* window appears, ensure the settings are as shown below:



Select Create an initial configuration file with the following settings.

In the predefined public NTP servers list, ensure None is selected.

In the up to 9 NTP servers list, type the IP address (in dot-decimal notation) of the NTP server available on your local network. The internal (local) clock of the computer will be synchronised to this NTP server by the Meinberg software.

Note:

In practice, reliable operation of the cards is ensured at stratum 5 (or better), so any NTP server used by the cards must be stratum 4 (or better). It is recommended that the NTP server used by the cards is actually connected to another NTP server (of stratum 3 or better) because a simulated stratum 4 NTP server (for example, generated using only the computer's internal clock as the clock source) may not have the accuracy needed and could result in the VM600 cards not being able to reconnect.

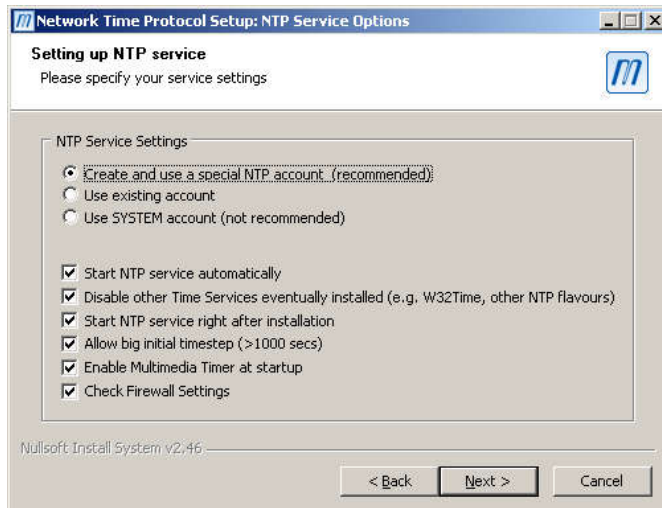
Ensure Use fast initial sync mode (iburst) is selected.

Select Add local clock as a last resort reference, Stratum. Then, type 4 as the Stratum to be used by this local clock and click Next.

Note:

In practice, reliable operation of the system hardware is ensured at stratum 5 (or better), so any NTP server used by the devices must be stratum 4 (or better). It is recommended that the NTP server used by the devices is actually connected to another NTP server (of stratum 3 or better) because a simulated stratum 4 NTP server (for example, generated using only the computer's internal clock as the clock source) could not have the accuracy needed and could result in the system hardware not being able to reconnect.

5. If prompted to review the generated config file, click No.
6. When the *NTP Service Options* window appears, ensure the settings are as shown below:



Ensure Create and use a special NTP account (recommended) is selected.

Ensure all of the options (check boxes) are selected and click Next.

Note:

Meinberg's NTP for Windows software is a Windows service that can be run automatically when your system starts and since the service logs on in the background, it requires a user account.

Meinberg recommends that a new, dedicated user account is used in order to restrict access to your computer, that is, to grant the right only to logon as a service (no interactive or network logon allowed) and maintain the system time. This limits the possibility to cause any harm on your computer, in the unlikely event of an attack on the NTP service.

Select Use existing account only if you are reinstalling and want to reuse the account created in a previous install.

7. When the *NTP Service Account* window appears, type an appropriate name and password for your NTPD Service Account.

Keep a record of the account name (for example, ntpd) and password (for example, ntpd) for future reference.

8. NTP for Windows will now start in the background.
9. On the next (final) window, click Finish to complete the NTP server installation.

You can verify that the NTP server is running by using the Windows Task Manager: ntpd.exe should be listed under the Processes tab of the task manager.

The IP address of the local computer can now be used as the IP address of the NTP server required by your VibroSight system. To discover the IP address of your computer, at the Windows command prompt, type `ipconfig` and then press ENTER.

Parent topic: [Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

Related concepts

[VibroSight Server and time reference requirements](#)

Related reference

[Network time protocol \(NTP\)](#)

Related information

[VibroSight monitoring system time reference requirements](#)

[Meinberg NTP for Windows \(external website\)](#)

Maintenance

The VibroSight System Manager provides standard operations for the maintenance and management of the cards from Meggitt Sensing Systems VM600 product line.

- [Rebooting a VM600 XMx16 card](#)

The firmware of a VM600 XMx16 card can be rebooted in a number of different ways, including remotely from VibroSight System Manager.

- [Rebooting a VibroSmart DMS module](#)

The firmware of a VibroSmart DMS module can be rebooted in a number of different ways.

- [Changing firmware](#)

The firmware of a VM600 card or a VibroSmart DMS module can be changed using the VibroSight System Manager Maintenance tools.

- [Checking the firmware](#)

The firmware versions running on a VM600 card or a VibroSmart DMS module can be checked using the VibroSight System Manager Maintenance tools.

- [Obtaining a GSD file for a VibroSmart VSI010 module](#)

You can obtain a VSI010 module's SD file directly from the VSI010 module using the VibroSight System Manager Maintenance tools.

- [Obtaining a GSD file for a VM600 CPUR card](#)

You can obtain a VM600 CPUR card's SD file from a default folder on the computer where VibroSight is installed.

Rebooting a VM600 XMx16 card

The firmware of a VM600 XMx16 card can be rebooted in a number of different ways, including remotely from VibroSight System Manager.

A VM600 XMx16 card can be forced to reboot (restart) in the following ways:

- By issuing the Reboot command from VibroSight System Manager.
- By removing the card from the VM600 rack and then inserting the card back in the rack.
- By turning the power to the VM600 rack off and then turning the power to the rack back on.

Note: Before restarting a device or replacing the device with a spare (hot-swapping), it is recommended to use the  Save Diagnostic Logs command in VibroSight System Manager and save a copy of the device's diagnostic information to the host computer. Otherwise this information will be lost.

Note:

Rebooting a VM600 XMx16 card will stop any data acquisition that is currently running on the card.

Using the VibroSight System Manager Reboot command forces a card to reboot remotely, so it is not necessary to have access to the VM600 rack.

1. Start VibroSight System Manager.
2. Select your card  from the Devices tree structure of the System Explorer.
Note:

As an IP address can be easily changed, a VM600 card such as an XMx16 should be identified by its serial number (xxxxxxx).

The Actions window of the System Manager will show the available tools. If you cannot see the Actions window, click View Actions.

3. Click  Reboot under Maintenance in the Actions window.

The Reboot warning message dialog box is displayed.

4. Click Yes if you want to save the diagnostic information before rebooting the card and use the resultant Save As dialog box to indicate in which folder and under what name the information should be saved. Click No if you do not want to save the diagnostic information before rebooting the card. Click Cancel if you do not want to reboot the card.

The Reboot information message dialog box is displayed.

The VM600 XMx16 card will reboot, which can take up to 1 minute. The front panel LEDs of the card can be checked after the reboot is complete to verify the status of the card.

Parent topic: [Maintenance](#)

Related concepts

[VM600 card and VibroSmart DMS device diagnostic logs](#)

Related tasks

[Saving diagnostic logs from a VM600 card or VibroSmart DMS device](#)

Related reference

[XMV16 front panel](#)

[XMC16 front panel](#)

Rebooting a VibroSmart DMS module

The firmware of a VibroSmart DMS module can be rebooted in a number of different ways.

A VibroSmart DMS module can be forced to reboot (restart) in the following ways:

- By removing the module from the terminal base and then inserting the module back in the terminal base.
- By turning the power to the module off and then turning the power to the module back on.
- As a result of a Change Firmware command from VibroSight System Manager, as a restart (reboot) is triggered automatically after a firmware update for a VibroSmart DMS module.

Note: Before restarting a device or replacing the device with a spare (hot-swapping), it is recommended to use the  Save Diagnostic Logs command in VibroSight System Manager and save a copy of the device's diagnostic information to the host computer. Otherwise this information will be lost.

Note:

Rebooting a VibroSmart DMS module will stop any data acquisition that is currently running on the module.

The VibroSmart DMS module will reboot, which can take up to 5 minutes. The front panel LEDs of the module can be checked or VibroSight System Manager can be used after the reboot to verify the status of the module.

Parent topic: [Maintenance](#)

Related concepts

[VM600 card and VibroSmart DMS device diagnostic logs](#)

Related tasks

[Saving diagnostic logs from a VM600 card or VibroSmart DMS device](#)

Related reference

[VSI010 front panel](#)

[VSN010 front panel](#)

[VSV30x front panel](#)

Changing firmware

The firmware of a VM600 card or a VibroSmart DMS module can be changed using the VibroSight System Manager Maintenance tools.

Note:

Updating the firmware of a device (card or module) is a special task that can, if used unintentionally or incorrectly, lead to malfunctioning of the device and affect proper function of data acquisition. It is therefore strongly recommended to change the firmware of VibroSight-compatible hardware only when it is necessary. For example, when the devices must be updated to be compatible with a VibroSight software upgrade.

During the firmware update of a device, the card or module being updated cannot provide its normal machinery monitoring functions because its outputs (alarms and relays) can go to undetermined states, irrespective of how they have been configured.



It is highly recommended that firmware updates are only performed in accordance with the operating procedures for the machinery being monitored and that appropriate precautions are taken at the control system level (such as DCS or PLC).

For example, alarms and relay outputs should be ignored (bypassed or inhibited) in order to avoid false trips of the machinery being monitored.

The machinery being monitored is not protected for the duration of a firmware update:

- For VM600 XMx16 cards, this can take up to 5 minutes.
- For VibroSmart DMS modules, this can take up to 10 minutes – up to 5 minutes for the firmware update and up to 5 minutes for the duration of the restart (reboot) that is triggered automatically after the firmware update.

In general, it is strongly recommended to use the most recent version of the VM600 card firmware and VibroSmart DMS device firmware that is compatible with the version of VibroSight software being used.

Failure to perform a necessary VibroSight card firmware update may lead to incoherent system behaviour and affect the proper functioning of data acquisition in a system. It is only in systems where the firmware running on the VM600 cards and/or VibroSmart DMS devices already corresponds to the latest available version that no firmware update is required. Therefore, it is strongly recommended to verify the version of firmware running on the hardware before starting a VibroSight system upgrade, in order to establish if a firmware update is also required.

Note:

The default location for the firmware (embedded software) files used by VM600 cards and VibroSmart DMS devices is C: Program Files Meggitt VibroSight Firmware

For VM600 XMx16 cards, the firmware is packaged and distributed as a single file per product with PNRs such as 640-xxx-001-xxx. In these PNRs, the xxx-xxx-001-xxx denotes the firmware is packaged in the tg file format. After the .tg file is unpacked by VibroSight System Manager and the firmware is uploaded to a VM600 XMx16 card, the dialog box displayed by the VibroSight System Manager's Change Firmware command shows the current version of firmware using PNRs such as 640-010-000-xxx for the Firmware and 640-003-000-xxx for the Base System, which correspond to the actual unpacked firmware that is running on the card.

For VibroSmart DMS devices, the firmware is distributed as a single file per product with PNRs such as 642-xxx-000-xxx. In these PNRs, the xxx-xxx-000-xxx denotes that the firmware is not packaged (compressed or archived). VibroSight System Manager always uses and displays information about VibroSmart DMS device firmware using PNRs such as 642-xxx-000-xxx, which correspond to the actual firmware that is running on the device.

Note:

When changing the firmware of a VM600 card or a VibroSmart DMS module, never do any of the following:

- Turn the power supply to the device off.
- Disconnect the device from the network.
- Remove and re-insert (hot-swap) the device.

Always wait until a firmware change has been confirmed as successful (approximately 5 to 10 minutes) before continuing.

- [Changing the firmware for a VM600 XMx16 card](#)
The firmware of a VM600 XMx16 card can be changed using the VibroSight System Manager Maintenance tools.
- [Changing the firmware for a VibroSmart DMS module](#)
The firmware of a VibroSmart DMS module can be changed using the VibroSight System Manager Maintenance tools.

Parent topic: [Maintenance](#)

Related concepts

[System bus \(SBUS\)](#)

Related tasks

[Enabling and disabling Ethernet ports for a VM600 card pair](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a DHCP server](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a static IP address](#)

[Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

[Checking the firmware](#)[Setting up an Ethernet connection](#)[Configuring IP settings for a VibroSmart DMS module using a DHCP server](#)[Configuring IP settings for a VibroSmart DMS module using a static IP address](#)**Related reference**[VibroSight software and VM600 XMx16 card firmware compatibility](#)[VibroSight software and VM600 CPUR card firmware compatibility](#)[VibroSight software and VibroSmart VSI010 module firmware compatibility](#)[VibroSight software and VibroSmart VSN010 device firmware compatibility](#)[VibroSight software and VibroSmart VSV30x module firmware compatibility](#)[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)[VibroSmart VSV30x module / VSB300 terminal base factory assigned defaults](#)[VibroSmart VSI010 module / VSB010 terminal base factory assigned defaults](#)

Changing the firmware for a VM600 XMx16 card

The firmware of a VM600 XMx16 card can be changed using the VibroSight System Manager Maintenance tools.

Note:

Updating the firmware of a device (card or module) is a special task that can, if used unintentionally or incorrectly, lead to malfunctioning of the device and affect proper function of data acquisition.

During the firmware update of a VibroSmart DMS device, the module being updated cannot provide its normal machinery monitoring functions because its outputs (alarms and relays) can go to undetermined states, irrespective of how they have been configured.

For VM600 XMx16 cards, this can take up to 5 minutes.



It is highly recommended that firmware updates are only performed in accordance with the operating procedures for the machinery being monitored and that appropriate precautions are taken at the control system level (such as DCS or PLC).

For example, alarms and relay outputs should be ignored (bypassed or inhibited) in order to avoid false trips of the machinery being monitored.

Note:

When changing the firmware of a VM600 XMx16 card, never do any of the following:

- Turn the power supply to the card off.
- Disconnect the card from the network.
- Remove and re-insert (hot-swap) the card.

Always wait until a firmware change has been confirmed as successful (approximately 5 minutes) before continuing.

Each VM600 XMx16 card contains two types of firmware – Base System and (applications) Firmware – that can be changed either independently or at the same time, as follows:

1. Start VibroSight System Manager.
2. Select the card  from the Devices tree-view of the System Explorer.

Note:

As an IP address can be easily changed, a VM600 card such as an XMx16 should be identified by its serial number (xxxxxxx).

The Actions window of the System Manager will show the available tools. If the Actions window cannot be seen, click View Actions.

3. Click  Change Firmware under Maintenance in the Actions window.

The Change Firmware window appears, listing the current version information for the card in the Firmware Status area. It may be necessary to scroll down to see the Base System and Firmware versions.

4. Click Add and use the dialog box that appears to navigate the folders on the computer and select the firmware file obtained from Meggitt Sensing Systems. Click Open.

The *.tg file is added to the list of firmware updates in the Firmware Files area of the Change Firmware window.

Note:

The default location for the firmware (embedded software) files used by VM600 cards is C: Program Files Meggitt VibroSight Firmware Firmware VM600

Note:

VM600 XMx16 card firmware files provided by Meggitt Sensing Systems can be identified by their *.tg file name extension.

For VM600 XMx16 cards, the firmware is packaged and distributed as a single file per product with PNRs such as 640-xxx-001-xxx. In these PNRs, the xxx-xxx-001-xxx denotes the firmware is packaged in the tg file format. After the *.tg file is unpacked by VibroSight System Manager and the firmware is uploaded to a VM600 XMx16 card, the dialog box displayed by the VibroSight System Manager's Change Firmware command shows the current version of firmware using PNRs such as 640-010-000-xxx for the Firmware and 640-003-000-xxx for the Base System, which correspond to the actual unpacked firmware that is running on the card.

5. If there are multiple firmware upgrades, for example, both Base System and Firmware, repeat step 4 to add the second *.tg file. Click Open.
6. Click Finish to start the firmware upgrade process.

The card will disappear from the Devices tree-view of the System Explorer for the duration of the firmware upgrade process. When the firmware upgrade is complete, the card will appear again.

Note:

VM600 card firmware upgrades take approximately 5 minutes.

7. Select the card  from the Devices tree-view of the System Explorer and click  Change Firmware under Maintenance in the Actions window.

The Change Firmware window appears, listing the current version information for the card in the Firmware Status area. The listed Current Versions can be checked to verify that the firmware upgrade was successful.

Parent topic: [Changing firmware](#)

Related reference

[VibroSight software and VM600 XMx16 card firmware compatibility](#)

Changing the firmware for a VibroSmart DMS module

The firmware of a VibroSmart DMS module can be changed using the VibroSight System Manager Maintenance tools.

Note:

Updating the firmware of a device (card or module) is a special task that can, if used unintentionally or incorrectly, lead to malfunctioning of the device and affect proper function of data acquisition.

During the firmware update of a VibroSmart DMS device, the module being updated cannot provide its normal machinery monitoring functions because its outputs (alarms and relays) can go to undetermined states, irrespective of how they have been configured.

For VibroSmart DMS modules, this can take up to 10 minutes – up to 5 minutes for the firmware update and up to 5 minutes for the duration of the restart (reboot) that is triggered automatically after the firmware update.



It is highly recommended that firmware updates are only performed in accordance with the operating procedures for the machinery being monitored and that appropriate precautions are taken at the control system level (such as DCS or PLC).

For example, alarms and relay outputs should be ignored (bypassed or inhibited) in order to avoid false trips of the machinery being monitored.

For VibroSmart DMS modules, each module can be selected and its firmware updated individually. Alternatively, multiple modules of the same type (for example, VSV30x) can be updated to the same version of firmware at the same time.

Note:

It is strongly recommended to ensure that a copy of the configuration for a VibroSmart DMS is available before updating the firmware of any of the VibroSmart DMS modules used in the DMS.

For example, using the currently installed version of VibroSight (that is, before any updates to the VibroSight software corresponding to updates to VibroSmart DMS modules), VibroSight Configurator should be used to obtain a copy of the configuration as follows:

- For a VibroSmart DMS using a VibroSight Server, the File Open Server / Database command can be used to read the configuration from the VibroSight Server.
- For a VibroSmart DMS not using a VibroSight Server (that is, a “stand-alone” VibroSmart DMS), the File Open Device command can be used to read the configuration directly from the VibroSmart DMS modules.

Then the File Save As File command should be used to store a copy of the configuration for the VibroSmart DMS.

Note:

When changing the firmware of a VibroSmart DMS module, never do any of the following:

- Turn the power supply to the module off.
- Disconnect the module from the network.
- Remove and re-insert (hot-swap) the module.

Always wait until a firmware change has been confirmed as successful (approximately 10 minutes) before continuing.

Each VibroSmart DMS module contains one Firmware file (the applications firmware) that can be changed as follows:

1. Start VibroSight System Manager.
2. Select the VibroSmart DMS module or modules from the Devices tree-view of the System Explorer. To change multiple modules to use the same version of firmware at the same time, use CTRL+click or SHIFT+click to select multiple devices from the Devices tree-view. (Then, when the Change Firmware command is run, all of the devices that were selected will be updated at the same time.)

Note:

As an IP address can be easily changed, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

The Actions window of the System Manager will show the available tools. If the Actions window cannot be seen, click View Actions.

3. Click  Change Firmware under Maintenance in the Actions window.

The VibroSmart Module Firmware Upgrade window appears, listing the current version information for the module in the Firmware Status area.

4. In Firmware File text box, click ... and use the dialog box that appears to navigate the folders on the computer and select the firmware file obtained from Meggitt Sensing Systems. Click Open.

The contents of the file is added to the list of firmware updates in the Firmware Files area of the VibroSmart Module Firmware Upgrade window.

Note:

The default location for the firmware (embedded software) files used by VibroSmart DMS modules is C: Program Files Meggitt VibroSight Firmware VibroSmart DMS

Note:

VibroSmart DMS device firmware files provided by Meggitt Sensing Systems can be identified by their *.fw file name extension.

For VibroSmart DMS devices, the firmware is distributed as a single file per product with PNRs such as 642-xxx-000-xxx. In these PNRs, the xxx-xxx-000-xxx denotes that the firmware is not packaged (compressed or archived). VibroSight System Manager always uses and displays information about VibroSmart DMS device firmware using PNRs such as 642-xxx-000-xxx, which correspond to the actual firmware that is running on the device.

5. Click Upgrade to start the firmware upgrade process.

When the firmware upgrade is complete, the VibroSmart Module Firmware Upgrade window will display a firmware has been upgraded successfully message.

Note:

VibroSmart DMS module firmware upgrades take approximately 5 minutes. After a firmware update, the module automatically restarts (reboots) which also takes approximately 5 minutes (10 minutes combined total).

6. Select the module from the Devices tree-view of the System Explorer and click  Change Firmware under Maintenance in the Actions window.

The Change Firmware window appears, listing the current version information for the module in the Firmware Status area. The listed Current Versions can be checked to verify that the firmware upgrade was successful.

Parent topic: [Changing firmware](#)

Related reference

[VibroSight software and VibroSmart VSI010 module firmware compatibility](#)

[VibroSight software and VibroSmart VSN010 device firmware compatibility](#)

[VibroSight software and VibroSmart VSV30x module firmware compatibility](#)

Checking the firmware

The firmware versions running on a VM600 card or a VibroSmart DMS module can be checked using the VibroSight System Manager Maintenance tools.

Checking the firmware versions running on a device (card or module) allows you to decide if you need to update the firmware.

1. Start VibroSight System Manager.
2. Select the device from the Devices tree-view of the System Explorer.

Note:

As an IP address can be easily changed, a VM600 card such as a CPUR or an XMx16 should be identified by its serial number (xxxxxxx).

Similarly, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

The Actions window of the System Manager will show the available tools. If the Actions window cannot be seen, click View Actions.

3. Click  Change Firmware under Maintenance in the Actions window.

The Change Firmware window appears, listing the current version information for the device in the Firmware Status area.

Note:

For VM600 XMx16 cards, the firmware is packaged and distributed as a single file per product with PNRs such as 640-xxx-001-xxx. In these PNRs, the xxx-xxx-001-xxx denotes the firmware is packaged in the .tg file format. After the .tg file is unpacked by VibroSight System Manager and the firmware is uploaded to a VM600 XMx16 card, the dialog box displayed by the VibroSight System Manager's Change Firmware command shows the current version of firmware using PNRs such as 640-xxx-000-xxx for the Firmware and 640-xxx-000-xxx for the Base System, which correspond to the actual unpacked firmware that is running on the card.

For VibroSmart DMS devices, the firmware is distributed as a single file per product with PNRs such as 642-xxx-000-xxx. In these PNRs, the xxx-xxx-000-xxx denotes that the firmware is not packaged (compressed or archived). VibroSight System Manager always uses and displays information about VibroSmart DMS device firmware using PNRs such as 642-xxx-000-xxx, which correspond to the actual firmware that is running on the device.

4. Click Cancel to close the Change Firmware window.

Parent topic: [Maintenance](#)

Parent topic: [VM600 CPUR card specific operations](#)

Related concepts

[System bus \(SBUS\)](#)

Related tasks

[Enabling and disabling Ethernet ports for a VM600 card pair](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a DHCP server](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a static IP address](#)

[Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

[Changing firmware](#)

[Setting up an Ethernet connection](#)

[Configuring IP settings for a VibroSmart DMS module using a DHCP server](#)

[Configuring IP settings for a VibroSmart DMS module using a static IP address](#)

Related reference

[VibroSight software and VM600 XMx16 card firmware compatibility](#)

[VibroSight software and VM600 CPUR card firmware compatibility](#)

[VibroSight software and VibroSmart VSI010 module firmware compatibility](#)

[VibroSight software and VibroSmart VSN010 device firmware compatibility](#)

[VibroSight software and VibroSmart VSV30x module firmware compatibility](#)

[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)

[VibroSmart VSV30x module / VSB300 terminal base factory assigned defaults](#)

[VibroSmart VSI010 module / VSB010 terminal base factory assigned defaults](#)

Obtaining a GSD file for a VibroSmart VSI010 module

You can obtain a VSI010 module's GSD file directly from the VSI010 module using the VibroSight System Manager Maintenance tools.

Downloading the VSI010's GSD file directly from the VSI010 module after a module firmware upgrade is useful, for example, in order to ensure that the latest correct version of the GSD is being used for the module.

1. Start VibroSight System Manager.
2. Select the VSI010 module from the Devices tree-view of the System Explorer.
Note: The serial number of a module can be found using either VibroSight System Manager, or for a VibroSmart DMS module such as a VSI010 or VSV30x by inspecting the label (sticker) on the terminal base that the module is clipped into, or for a VibroSmart DMS device such as a VSN010 by inspecting the label on the device itself.
Note:

As an IP address can be easily changed, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

The Actions window of the System Manager will show the available tools. If you cannot see the Actions window, click View Actions.

3. Click  Download GSD file under Maintenance in the Actions window and use the resultant Save As dialog box to indicate in which folder and under what name the GSD file (*.txt) should be saved. Then click Save.
4. Click OK to close the message and continue.

The VSI010 module's GSD file is typically imported by third party devices such as a DCS or PLC in order to help configure their communications links with the VSI010's fieldbus interfaces.

Parent topic: [Maintenance](#)

Related tasks

[Obtaining a GSD file for a VM600 CPUR card](#)

Related reference

[VibroSmart VSI010 parameters](#)
[GSD](#)

Obtaining a GSD file for a VM600 CPUR card

You can obtain a VM600 CPUR card's GSD file from a default folder on the computer where VibroSight is installed.

Note:

The correct GSD file to use depends on the CPUx rack controller and communications interface card used by the VM600 rack to support PROFIBUS communications:

- The M CPUR2's GSD file should be used for PROFIBUS communications with a CPUR

card (PNR 600-026-xxx-xxx). This CPUR card (also known as the CPUR2) includes integrated support for PROFIBUS.

- The vm600m.gse file should be used for PROFIBUS communications with a CPUM card (PNR 200-595-xxx-xxx). The CPUM card requires a Molex PROFIBUS interface card (PNR 600-018-000-001) to support PROFIBUS.

Previously, the CPUx SD file distributed with VibroSight was:

- The M T0FBE. SD file for PROFIBUS communications with earlier versions of the CPUR card (PNR 600-026-xxx-xxx). The latest M CPUR2. SD file replaces this earlier M T0FBE. SD file.

1. Start a Windows Explorer.

For example, click the Start button, type explorer in the search box and click the Windows Explorer program that is listed.

2. Use a Windows Explorer to navigate the folders on the computer and select the CPUR SD file (M T0FBE. SD).

Note:

The default location for the CPUR SD file is

C: Program Files Meggitt VibroSight Firmware Firmware VM600 CPUR

Note:

The default location for the Windows program files folder depends on the operating system installed on the computer:

C: Program Files (x86) on 64-bit versions of Windows.

C: Program Files on 32-bit versions of Windows.

As a result, all references to the program files folder should be adapted by removing or adding (x86) as required.

3. Copy the appropriate CPUR SD file (*. SD or *. SE) as required for use by third party devices.

The CPUR card s SD file is typically imported by third party devices such as a DCS or PLC in order to help configure their communications links with the CPUR s fieldbus interfaces.

Parent topic: [Maintenance](#)

Related tasks

[Obtaining a SD file for a VibroSmart VSI010 module](#)

Related reference

[VM600 CPUR card parameters](#)

[SD](#)

Diagnostics

The VibroSight System Manager provides diagnostic information for the management of hardware

from Meggitt Sensing Systems VM600 product line.

- [Saving diagnostic logs from a VM600 card or VibroSmart DMS device](#)
You can save diagnostic logs from a VM600 card or VibroSmart DMS device using the VibroSight System Manager Diagnostics tools.
- [Saving diagnostic information from the VibroSight software](#)
You can save the diagnostic logs for the VibroSight software using a Help menu command in any VibroSight software module.

Saving diagnostic logs from a VM600 card or VibroSmart DMS device

You can save diagnostic logs from a VM600 card or VibroSmart DMS device using the VibroSight System Manager Diagnostics tools.

Note:

As VM600 cards and VibroSmart DMS devices store their diagnostic log files in local volatile memory (that is, in the device), the device's diagnostic logs are effectively lost whenever:

- The power supply to the device is removed, for example, by turning the power supply to the device off and on, or removing and re-inserting the device.
- The device is rebooted (restarted).

VM600 card and VibroSmart DMS device diagnostic log files contain diagnostic information about the device that can be useful to Meggitt Sensing Systems customer support when investigating certain issues.

1. Start VibroSight System Manager.
2. Select your card  or device from the Devices tree structure of the System Explorer.

Note:

As an IP address can be easily changed, a VM600 card such as a CPUR or an XMx16 should be identified by its serial number (xxxxxxx).

Similarly, a VibroSmart DMS module such as a VSI010 or VSV30x should be identified by the serial number (xxxxxxxxx) of the terminal base that the module is clipped into, and a VibroSmart DMS device such as a VSN010 should be identified by its serial number (xxxxxxxx).

The Actions window of the System Manager will show the available tools. If you cannot see the Actions window, click View Actions.

3. Click  Save Diagnostic Logs under Diagnostics in the Actions window and use the resultant Save As dialog box to indicate in which folder and under what name the information should be saved. Then click Save.

Parent topic: [Diagnostics](#)

Parent topic: [VM600 CPUR card specific operations](#)

Related concepts

[VM600 card and VibroSmart DMS device diagnostic logs](#)

Saving diagnostic information from the VibroSight software

You can save the diagnostic logs for the VibroSight software using a Help menu command in any VibroSight software module.

VibroSight software diagnostic log files contain diagnostic information about the software that can be useful to Meggitt Sensing Systems customer support when investigating certain issues.

In any VibroSight software module, click Help → Save Diagnostic Information and use the resultant Save As dialog box to indicate in which folder and under what name the diagnostic information should be saved. Then click Save.

Parent topic: [Diagnostics](#)

Related concepts

[VibroSight software diagnostic information](#)

VibroSight Computer

The VibroSight System Manager VibroSight Computer commands control the VibroSight Host Service program that enables the configuration and management of VibroSight Servers as Windows services and allow VibroSight's default data folder (data path directory) to be changed.

- [Viewing VibroSight Host Service information](#)
You can view VibroSight Host Service information at any time using VibroSight System Manager.
- [Stopping the VibroSight Host Service](#)
You can stop the VibroSight Host Service program running on the host computer using the VibroSight System Manager Host Service tools.
- [Starting the VibroSight Host Service](#)
You can start the VibroSight Host Service using the VibroSight System Manager Host Service tools.
- [Changing the default VibroSight data folder](#)
VibroSight's default data folder (data path directory), which is used as the default folder for important VibroSight files such as VibroSight Server configuration files (*.vscfg) and VibroSight data repositories (VibroSight historical data folders (*.vshdf)), can be changed at any time using VibroSight System Manager.

Related concepts

[Windows services](#)

[VibroSight Server management](#)

Stopping the VibroSight Host Service

You can stop the VibroSight Host Service program running on the host computer using the VibroSight System Manager Host Service tools.

The VibroSight Host Service program is installed and registered as a Windows service (as part of the VibroSight software installation process). Typically, this service is only stopped if VibroSight Servers are not required to be run as Windows services.

1. Start VibroSight System Manager.
2. Select your computer  from the VibroSight Hosts tree structure of the System Explorer window.
Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The Actions window of the System Manager will show the available tools. If you cannot see the Actions window, click View Actions.

3. Click  Stop under Host Service.
Note:

If the stop command is unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Admin user rights are required to stop or start the VibroSight Host Service program.

When the VibroSight Host Service is running, the stop command is available under Host Service. In addition, *VibroSightHostService* (Name) can be seen listed as *Started* (Status) on the Services tab of Windows Task Manager, where any VibroSight Servers registered on the host computer as a Windows service can also be seen, for example, *VibroSight Server - ServerInstanceName* (Name). These services can also be seen in the Windows Services administrative tool.

Parent topic: [VibroSight Computer](#)

Starting the VibroSight Host Service

You can start the VibroSight Host Service using the VibroSight System Manager Host Service tools.

1. Start VibroSight System Manager.
2. Select your computer  from the VibroSight Hosts tree structure of the System Explorer window.
Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The Actions window of the System Manager will show the available tools. If you cannot see the Actions window, click View Actions.

3. Click  Start under Host Service.
Note:

If the start command is unavailable (greyed out), check that you are working at the correct user

level (with the necessary access rights). Admin user rights are required to stop or start the VibroSight Host Service program.

When the VibroSight Host Service is stopped, the start command is available under Host Service. In addition, *VibroSightHostService* (Name) can be seen listed as *Stopped* (Status) on the Services tab of Windows Task Manager, where any VibroSight Servers registered on the host computer as a Windows service can also be seen, for example, *VibroSight Server - ServerInstanceName* (Name). These services can also be seen in the Windows Services administrative tool.

Parent topic: [VibroSight Computer](#)

Changing the default VibroSight data folder

VibroSight's default data folder (data path directory), which is used as the default folder for important VibroSight files such as VibroSight Server configuration files (*.vscfg) and VibroSight data repositories (VibroSight historical data folders (*.vshdf)), can be changed at any time using VibroSight System Manager.

The application folder (application path directory) used for the VibroSight software and the data folder (data path directory) used for the configuration and measurement data required by VibroSight are defined during the installation process. Either the system defaults or user-defined folders can be used. If necessary, the folders can be changed at a later time, for example, if a new hard disk is added to the computer.

Note:

The default location for VibroSight data repositories is a subfolder under VibroSight's default data folder (data path directory), typically, C: VibroSight Data

A VibroSight historical data folder is identified by a *.vshdf file and an associated Storage subfolder.

To change VibroSight's default data folder:

1. Start VibroSight System Manager.
2. Select the host computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The Actions window of the System Manager shows the available commands. If you cannot see the Actions window, click View Actions.

3. Click  Change default data directory under VibroSight Computer in the Actions window.
4. Use the Browse For Folder dialog box that appears to navigate the folders on the computer and either select an existing folder or create a new folder (Make New Folder) to use as VibroSight's data folder (data path directory). Then click OK.

The VibroSight software will register and use the selected folder as the data folder (data path directory).

Parent topic: [VibroSight Computer](#)

Related tasks

[Changing the default folders](#)

Related reference

[Default VibroSight folders](#)

VibroSight Server management

The VibroSight System Manager VibroSight Server commands allow a VibroSight Server to be registered (and subsequently unregistered) as a Windows service. A command also exists to create a new “empty” VibroSight Server.

- **[Creating a VibroSight Server](#)**
You can create a VibroSight server/database using the VibroSight System Manager VibroSight Server commands. VibroSight Servers/databases created in this way are automatically registered as a Windows service.
- **[Viewing VibroSight Server information using VibroSight System Manager](#)**
You can view VibroSight Server information at any time using VibroSight System Manager.
- **[Registering a VibroSight Server as a Windows service](#)**
You can register a VibroSight Server as a Windows service using the VibroSight System Manager VibroSight Server commands.
- **[Unregistering a VibroSight Server as a Windows service](#)**
You can unregister a VibroSight Server previously registered as a Windows service using the VibroSight System Manager VibroSight Server commands.
- **[Manually starting a VibroSight Server registered as a Windows service](#)**
You can manually start a VibroSight Server registered as a Windows service using Server Control commands in VibroSight System Manager.
- **[Manually stopping a VibroSight Server registered as a Windows service](#)**
You can manually stop a VibroSight Server registered as a Windows service using Server Control commands in VibroSight System Manager.
- **[Working with VibroSight Servers from VibroSight System Manager](#)**
VibroSight Servers registered as a Windows service (that is, servers without a user interface (Xms.Server.Client.exe)) are controlled from VibroSight System Manager. VibroSight Servers that were started using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)) can be controlled from either VibroSight System Manager or from the VibroSight Server (Xms.Server.Client.exe) itself.

Related concepts

[Windows services](#)

[VibroSight Computer](#)

Creating a VibroSight Server

You can create a VibroSight server/database using the VibroSight System Manager VibroSight Server commands. VibroSight Servers/databases created in this way are automatically registered as a Windows service.

Note:

Case sensitive alphanumeric characters (0 to 9, a to z and A to Z) can be used for the name of a VibroSight server/database.

1. Start VibroSight System Manager.
2. Select your computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows > Control Panel > System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The Actions window of the System Manager will show the available commands. If you cannot see the Actions window, click View > Actions.

3. Click  Create under VibroSight Server in the Actions window.

The Server Creation window is displayed.

4. In the Server instance name text box, type the name to be used for the VibroSight Server instance name. Select Autostart if the VibroSight Server is required to start automatically whenever the computer is started.

Note:

Since VibroSight 2.9.6, VibroSight Server instance names are limited to 18 characters (previously, it was 27), so the data entry text boxes are limited to 18 characters. VibroSight allows only alphanumeric characters (A to Z, a to z, 0 to 9), the hyphen-minus character (-) and the underscore character (_) to be used for VibroSight Server names.

It is recommended to choose appropriate VibroSight Server names in order to avoid name conflicts arising due to truncation and/or additional databases being created during automatic data management.

5. In the Data repository location text box, modify the name to be used for the VibroSight data repository subfolder, if it is required to be different from the VibroSight Server instance name. (Note: The VibroSight data repository uses the same name as the Server instance name.) Select Overwrite data repository file in order to automatically overwrite an existing VibroSight data repository in the folder if it has the same file name. Then click Next.

Data repository file name automatically updates to display the location and file name for the VibroSight data repository (VibroSight historical data folder (*.vshdf)) that will be created, using the information entered in the Server instance name and Data repository location text boxes.

Note:

The default location for VibroSight data repositories is under VibroSight's default data folder (data path directory), typically, C: \VibroSight Data

A VibroSight historical data folder is identified by a *.vshdf file and an associated Storage subfolder.

6. A progress window is displayed to provide feedback on the progress of the server creation process. The server creation is complete when the progress indicators have stopped and the Server creation completed window is displayed. Click Finish to close the window.

A new VibroSight data repository (VibroSight historical data folder (*.vshdf) and associated Storage subfolder) is created but no VibroSight Server starts at this stage.

The VibroSight Server is also registered as a Windows service:

If Autostart was selected, the VibroSight Server is registered as a Windows service with Startup Type set to Automatic.

If Autostart was not selected, the VibroSight Server is registered as a Windows service with Startup Type set to Manual.

Creating a VibroSight Server in this way is the equivalent of saving an “empty” VibroSight Server configuration as a server/database using VibroSight Configurator and then registering the VibroSight Server as a Windows service.

Parent topic: [VibroSight Server management](#)

Related tasks

[Saving a configuration for a VibroSight Server as a VibroSight Server](#)

Viewing VibroSight Server information using VibroSight System Manager

You can view VibroSight Server information at any time using VibroSight System Manager.

For a VibroSight Server registered on the host computer as a Windows service, VibroSight System Manager is the only way to obtain information about the VibroSight Server.

Note:

For a VibroSight Server running as a Windows service (that is, without a user interface), VibroSight System Manager must be used to enable or disable specific features of the VibroSight Server.

For a VibroSight Server that was started using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)), either VibroSight System Manager or the VibroSight Server (Xms.Server.Client.exe) window can be used to obtain information about the VibroSight Server.

VibroSight Server information includes detailed information about the VibroSight Server running on the host computer, such as server instance name, the data source (VibroSight database or DSN), the software version identifier for VibroSight Server, the IP address of the computer running the VibroSight Server and the TCP port used for communications.

1. Start VibroSight System Manager.
2. Select the host computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The main window (central area) of VibroSight System Manager updates to show the VibroSight Host Service tab (and Licensing Information tab) for the host computer.

3. Click the VibroSight Host Service tab to view detailed information about the VibroSight Host Service program under VibroSight Host Service and any VibroSight Servers running on the host computer under Server Instances.

Note:

The VibroSight Servers listed under a host computer in the VibroSight Hosts view are either:
VibroSight Servers registered on the host computer as a Windows service, which are listed even if they are not currently running.

VibroSight Servers currently running on the host computer that were started using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

4. Select a specific VibroSight Server  from the VibroSight Hosts tree structure of the System Explorer window to see information about the VibroSight Server in the main window, and see the commands available to communicate with and control the VibroSight Server in the Actions window.

If a VibroSight Server registered on the host computer as a Windows service is selected and the VibroSight Server is not running, “VibroSight server is not running” is displayed in the main window, while the Unregister command is available under VibroSight Server and the Start command is available under Server Control in the Actions window.

If a VibroSight Server registered on the host computer as a Windows service is selected and the VibroSight Server is running, Information, Data and Loggers for the VibroSight Server are displayed in the main window, while the Connect command is available under Connection and the Stop command is available under Server Control in the Actions window.

If a VibroSight Server currently running on the host computer that was started using VibroSight Server (that is, a server with a user interface (Xms.Server.Client.exe)) is selected, Information, Data and Loggers for the VibroSight Server are displayed in the main window, while the Connect command is available under Connection in the Actions window.

Parent topic: [VibroSight Server management](#)

Related concepts

[An introduction to VibroSight Server](#)

Related tasks

[Viewing VibroSight Host Service information](#)

Registering a VibroSight Server as a Windows service

You can register a VibroSight Server as a Windows service using the VibroSight System Manager VibroSight Server commands.

VibroSight Servers created using the Create command in the VibroSight Server commands of VibroSight System Manager are automatically registered as a Windows service after they are

created. However, VibroSight Servers created using the File Save As VibroSight Server / Database command in VibroSight Configurator (and previously unregistered VibroSight Servers) must be manually registered as a Windows service.

1. Start VibroSight System Manager.
2. Select your computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The Actions window of the System Manager shows the available commands. If you cannot see the Actions window, click View Actions.

3. Click  Register under VibroSight Server in the Actions window.

The Server Registration window appears.

4. In the Server Configuration File text box, enter the full path (including file name and file name extension) or use the browse button to navigate the folders on the computer and select the VibroSight data repository (VibroSight historical data folder (*.vshdf)) configuration file (*.vshdf) corresponding to the VibroSight Server required to be registered as a Windows service.

Note:

The default location for VibroSight data repositories is under VibroSight's default data folder (data path directory), typically, C: VibroSight Data

A VibroSight historical data folder is identified by a *.vshdf file and an associated Storage subfolder.

5. Select Server Service Options Autostart if the VibroSight Server is required to start automatically whenever the computer is started.

Note: When a VibroSight Server is registered as a Windows service:

If Autostart is selected, the VibroSight Server will be registered as a Windows service with Startup Type set to Automatic.

If Autostart is not selected, the VibroSight Server will be registered as a Windows service with Startup Type set to Manual.

6. Click Finish to register the VibroSight Server as a Windows service.

The VibroSight Server is registered as Windows service and a Server Creation Succeeded message is displayed. For example, "The server Servername is registered as a service on Hostcomputername". The VibroSight Server is also added to the VibroSight Servers listed under the host computer in the VibroSight Hosts view.

Note:

The VibroSight Servers listed under a host computer in the VibroSight Hosts view are either:

VibroSight Servers registered on the host computer as a Windows service, which are listed even if they are not currently running.

VibroSight Servers currently running on the host computer that were started using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

Parent topic: [VibroSight Server management](#)

Related tasks

[Starting a VibroSight Server as a Windows service](#)

Unregistering a VibroSight Server as a Windows service

You can unregister a VibroSight Server previously registered as a Windows service using the VibroSight System Manager VibroSight Server commands.

1. Start VibroSight System Manager.
2. Select your computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The Actions window of the System Manager shows the available commands. If you cannot see the Actions window, click View Actions.

3. Click  Unregister under VibroSight Server in the Actions window.

The Server Unregistration window appears.

4. Under Servers Instances, use the Server drop-down list box to select the VibroSight Server required to be unregistered as a Windows service.
5. Click Finish to unregister the VibroSight Server as a Windows service.

The VibroSight Server is no longer registered as a Windows service and a Server Unregistration Succeeded message is displayed. For example, “The server unregistration succeeded”. The VibroSight Server is also removed from the VibroSight Servers listed under the host computer in the VibroSight Hosts view.

Note:

The VibroSight Servers listed under a host computer in the VibroSight Hosts view are either:
VibroSight Servers registered on the host computer as a Windows service, which are listed even if they are not currently running.

VibroSight Servers currently running on the host computer that were started using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

Parent topic: [VibroSight Server management](#)

Manually starting a VibroSight Server registered as a Windows service

You can manually start a VibroSight Server registered as a Windows service using Server Control commands in VibroSight System Manager.

Note: When the VibroSight Server is registered as a Windows service:

- If the Startup Type is set to Automatic, the VibroSight Server starts at (Windows) system logon.
- If the Startup Type is set to Manual, the VibroSight Server only starts and stops when manually commanded to using the Server Control commands.

1. Start VibroSight System Manager.
2. Select the host computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The main window (central area) of VibroSight System Manager updates to show the VibroSight Host Service tab (and Licensing Information tab) for the host computer.

3. Click the VibroSight Host Service tab to view detailed information about the VibroSight Host Service program under VibroSight Host Service and any VibroSight Servers running on the host computer under Server Instances.

Note:

The VibroSight Servers listed under a host computer in the VibroSight Hosts view are either:
VibroSight Servers registered on the host computer as a Windows service, which are listed even if they are not currently running.

VibroSight Servers currently running on the host computer that were started using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

4. Select the VibroSight Server  registered as a Windows service that is required to be started from the VibroSight Hosts tree structure of the System Explorer window.

If the VibroSight Server registered on the host computer as a Windows service is selected and the VibroSight Server is not running, “VibroSight server is not running” is displayed in the main window, while the Unregister command is available under VibroSight Server and the Start command is available under Server Control in the Actions window.

5. Click  Start under Server Control in the Actions window.

The Service Control dialog box appears until the VibroSight Server registered as a Windows service starts. Then the Connect command becomes available under Connection in the Actions window.

When the VibroSight Server registered as a Windows service starts, *VibroSight Server - ServerInstanceName* (Name) can be seen listed as *Running* (Status) on the Services tab of Windows Task Manager. The service can also be seen in the Windows Services administrative tool.

Parent topic: [VibroSight Server management](#)

Manually stopping a VibroSight Server registered as a Windows service

You can manually stop a VibroSight Server registered as a Windows service using Server Control commands in VibroSight System Manager.

Note: When the VibroSight Server is registered as a Windows service:

- If the Startup Type is set to Automatic, the VibroSight Server starts at (Windows) system logon.
- If the Startup Type is set to Manual, the VibroSight Server only starts and stops when manually commanded to using the Server Control commands.

1. Start VibroSight System Manager.
2. Select the host computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The main window (central area) of VibroSight System Manager updates to show the VibroSight Host Service tab (and Licensing Information tab) for the host computer.

3. Click the VibroSight Host Service tab to view detailed information about the VibroSight Host Service program under VibroSight Host Service and any VibroSight Servers running on the host computer under Server Instances.

Note:

The VibroSight Servers listed under a host computer in the VibroSight Hosts view are either:
VibroSight Servers registered on the host computer as a Windows service, which are listed even if they are not currently running.

VibroSight Servers currently running on the host computer that were started using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

4. Select the VibroSight Server  registered as a Windows service that is required to be started from the VibroSight Hosts tree structure of the System Explorer window.

If the VibroSight Server registered on the host computer as a Windows service is selected and the VibroSight Server is running, Information, Data and Loggers for the VibroSight Server are displayed in the main window, while the Connectcommand is available under Connection and the Stop command is available under Server Control in the Actions window.

5. Click  Stop under Server Control in the Actions window.

The Service Control dialog box appears until the VibroSight Server registered as a Windows service stops. Then the Unregister command becomes available under VibroSight Server in the Actions window.

When the VibroSight Server registered as a Windows service stops, *VibroSight Server - ServerInstanceName* (Name) can be seen listed as *Stopped* (Status) on the Services tab of Windows Task Manager. The service can also be seen in the Windows Services administrative tool.

Parent topic: [VibroSight Server management](#)

Working with VibroSight Servers from VibroSight System Manager

VibroSight Servers registered as a Windows service (that is, servers without a user interface (Xms.Server.Client.exe)) are controlled from VibroSight System Manager. VibroSight Servers that were started using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)) can be controlled from either VibroSight System Manager or from the VibroSight Server (Xms.Server.Client.exe) itself.

- [Connecting to a VibroSight Server using VibroSight System Manager](#)
You can connect to a VibroSight Server using the Connection commands in VibroSight System Manager.
- [Disconnecting from a VibroSight Server using VibroSight System Manager](#)
You can disconnect from a VibroSight Server using the Connection commands in VibroSight System Manager.
- [Configuring the NTP settings of a VibroSight Server using VibroSight System Manager](#)
You can configure the NTP settings of a VibroSight Server using the Configuration commands in VibroSight System Manager's Actions window.
- [Starting data acquisition using VibroSight System Manager](#)
You can enable the required software driver and start data acquisition by a VibroSight Server using the driver start commands in VibroSight System Manager's Data window.
- [Stopping data acquisition using VibroSight System Manager](#)
You can disable the required software driver and stop data acquisition by a VibroSight Server using the Driver stop commands in VibroSight System Manager's Data window.
- [Stopping data logging using VibroSight System Manager](#)
You can stop data logging by a VibroSight Server using the Data Logging Manager stop command in VibroSight System Manager's Data window.
- [Starting data logging using VibroSight System Manager](#)
You can start data logging by a VibroSight Server using the Data Logging Manager start command in VibroSight System Manager's Data window.

Parent topic: [VibroSight Server management](#)

Connecting to a VibroSight Server using

VibroSight System Manager

You can connect to a VibroSight Server using the Connection commands in VibroSight System Manager.

The VibroSight Server can either be a VibroSight Server registered as a Windows service or a VibroSight Server that was started using VibroSight Server (that is, a server with a user interface (Xms.Server.Client.exe)).

For a VibroSight Server registered as a Windows service, connecting to the VibroSight Server using VibroSight System Manager is the only way to communicate with and control the VibroSight Server.

For a VibroSight Server that was started using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)), either connecting to the VibroSight Server using VibroSight System Manager or the VibroSight Server (Xms.Server.Client.exe) window can be used to communicate with and control the VibroSight Server. That is, the commands available from VibroSight System Manager are equivalent to the commands available from VibroSight Server.

1. Start VibroSight System Manager.
2. Select the host computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The main window (central area) of VibroSight System Manager updates to show the VibroSight Host Service tab (and Licensing Information tab) for the host computer.

3. Select a running VibroSight Server  from the VibroSight Hosts tree structure of the System Explorer window. (The VibroSight Server must be running in order to connect to it.)

Note:

The VibroSight Servers listed under a host computer in the VibroSight Hosts view are either:
VibroSight Servers registered on the host computer as a Windows service, which are listed even if they are not currently running.

VibroSight Servers currently running on the host computer that were started manually using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

4. Click  Connect under Connection in the Actions window.

VibroSight System Manager connects to the VibroSight Server.

Note:

The Connection Connect/Disconnect command is a toggle command, that is, only the Connect command is available when the VibroSight Server is not connected to VibroSight System Manager and only the Disconnect command is available when the VibroSight Server is connected to VibroSight System Manager.

Once connected to a VibroSight Server, VibroSight System Manager's Information, Data and Loggers windows update to display the status of the server. And after logging in to the VibroSight Server, VibroSight System Manager's Actions window and Data window update to display the commands available to communicate with and control the VibroSight Server.

Note:

The VibroSight Server commands available from VibroSight System Manager are equivalent to the commands available directly from the VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

Parent topic: [Working with VibroSight Servers from VibroSight System Manager](#)

Disconnecting from a VibroSight Server using VibroSight System Manager

You can disconnect from a VibroSight Server using the Connection commands in VibroSight System Manager.

The VibroSight Server can either be a VibroSight Server registered as a Windows service or a VibroSight Server that was started using VibroSight Server (that is, a server with a user interface (Xms.Server.Client.exe)).

1. Start VibroSight System Manager.
2. Select the host computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The main window (central area) of VibroSight System Manager updates to show the VibroSight Host Service tab (and Licensing Information tab) for the host computer.

3. Select a running VibroSight Server  from the VibroSight Hosts tree structure of the System Explorer window. (The VibroSight Server must be running and connected to in order to disconnect from it.)

Note:

The VibroSight Servers listed under a host computer in the VibroSight Hosts view are either:
VibroSight Servers registered on the host computer as a Windows service, which are listed even if they are not currently running.

VibroSight Servers currently running on the host computer that were started manually using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

4. Click  Disconnect under Connection in the Actions window.

VibroSight System Manager disconnects from the VibroSight Server.

Note:

The Connection Connect/Disconnect command is a toggle command, that is, only the Disconnect command is available when the VibroSight Server is connected to VibroSight System Manager and only the Connect command is available when the VibroSight Server is not connected to VibroSight System Manager.

Once disconnected from a VibroSight Server, only the Connect command (under Connections) and the Stop command (under Server Control) are available in VibroSight System Manager's Actions window.

Parent topic: [Working with VibroSight Servers from VibroSight System Manager](#)

Configuring the NTP settings of a VibroSight Server using VibroSight System Manager

You can configure the NTP settings of a VibroSight Server using the Configuration commands in VibroSight System Manager's Actions window.

Configuring the NTP settings of a VibroSight Server simply requires that the IP address of the NTP server (that is available on the network) is entered for the VibroSight Server.

After connecting to a VibroSight Server in VibroSight System Manager, the Reference Clock command (under Configuration) in VibroSight System Manager's Actions window can be used to configure the NTP settings of VibroSight Servers registered as a Windows service or VibroSight Servers that were started using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

Note:

If the required VibroSight Server commands are not available, check that you are working at the correct user level (with the necessary access rights).

Alternatively, the equivalent VibroSight Server options can be used to configure the NTP settings of a VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

To configure the NTP settings of a VibroSight Server using VibroSight System Manager:

1. In VibroSight System Manager, select the host computer  from the VibroSight Hosts tree structure of the System Explorer window.
2. Select the running VibroSight Server  from the VibroSight Hosts tree structure of the System Explorer window that VibroSight System Manager is connected to.
3. Click  Reference Clock under Configuration in the Actions window.

The Reference Clock dialog box is displayed.

4. Under NTP Configuration, select the Enable check box, then type the IP address (in dot-decimal notation) of the NTP server for the VibroSight server in the NTP Server text box.
5. Under Clock Monitoring, either accept the system defaults or set the Poll Interval and the Acceptable drift between polls to the values required by your system.
6. Click Finish.

VibroSight System Manager's Loggers window displays an information message reporting the result of the operation. For example,  For example,  Server reference clock has changed. Current reference clock: 10.10.2.100 (NTP). Previous reference clock: local clock. (The VibroSight System Manager's Loggers window is equivalent to the Message list box of the VibroSight Server main window (Xms.Server.Client.exe)).

Parent topic: [Working with VibroSight Servers from VibroSight System Manager](#)

Related tasks

[Setting the reference clock for a VibroSight server](#)

Starting data acquisition using VibroSight System Manager

You can enable the required software driver and start data acquisition by a VibroSight Server using the driver start commands in VibroSight System Manager's Data window.

When a VibroSight Server starts, data acquisition is disabled by default. It is therefore necessary to explicitly start (enable) data acquisition before the VibroSight Server can receive measurement data from the associated hardware such as VM600 cards or VibroSmart DMS modules, or external interfaces (Modbus or OPC).

Alternatively, the equivalent menu command available in VibroSight Server can be used to start data acquisition for a VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

To start data acquisition using VibroSight System Manager:

1. In VibroSight System Manager, select the host computer  from the VibroSight Hosts tree structure of the System Explorer window.
2. Select the running VibroSight Server  from the VibroSight Hosts tree structure of the System Explorer window that VibroSight System Manager is connected to.
3. Click the  Start button corresponding to the required software driver in the Data window. For example, corresponding to the XMC16/XMV16 Card Driver.

VibroSight System Manager's Loggers window displays an information message reporting the result of the operation. For example,  The component "XMC16/XMV16 Card Driver" has been successfully started by the user. (The VibroSight System Manager's Loggers window is equivalent to the Message list box of the VibroSight Server main window (Xms.Server.Client.exe)).

The icon beside the required software driver changes from  to  in order to indicate that the individual driver is enabled. The icon beside the overall Data Acquisition Components / Drivers changes from  to  when at least one of the drivers is running.

Parent topic: [Working with VibroSight Servers from VibroSight System Manager](#)

Related tasks

[Starting data acquisition](#)

Stopping data acquisition using VibroSight System Manager

You can disable the required software driver and stop data acquisition by a VibroSight Server using the Driver stop commands in VibroSight System Manager's Data window.

Once started, VibroSight Server data acquisition can be disabled at any time in order to stop receiving measurement data from the associated hardware such as VM600 cards or VibroSmart DMS modules, or external interfaces (Modbus or OPC).

Alternatively, the equivalent menu command available in VibroSight Server can be used to stop data acquisition for a VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

To stop data acquisition using VibroSight System Manager:

1. In VibroSight System Manager, select the host computer  from the VibroSight Hosts tree structure of the System Explorer window.
2. Select the running VibroSight Server  from the VibroSight Hosts tree structure of the System Explorer window that VibroSight System Manager is connected to.
3. Click the  Stop button corresponding to the required software driver in the Data window. For example, corresponding to the XMC16/XMV16 Card Driver.

VibroSight System Manager's Loggers window displays an information message reporting the result of the operation. For example,  The component "XMC16/XMV16 Card Driver" has been stopped by the user. (The VibroSight System Manager's Loggers window is equivalent to the Message list box of the VibroSight Server main window (Xms.Server.Client.exe)).

The icon beside the required software driver changes from  to  in order to indicate that the individual driver is disabled. The icon beside the overall Data Acquisition Components / Drivers also changes from  to  when none of the drivers are running.

Parent topic: [Working with VibroSight Servers from VibroSight System Manager](#)

Related tasks

[Stopping data acquisition](#)

Stopping data logging using VibroSight System Manager

You can stop data logging by a VibroSight Server using the Data Logging Manager stop command in VibroSight System Manager's Data window.

Once started, VibroSight Server data acquisition can be disabled at any time in order to stop receiving measurement data from the associated hardware such as VM600 cards or VibroSmart DMS modules, or external interfaces (Modbus or OPC).

Alternatively, the equivalent menu command available in VibroSight Server can be used to stop data logging for a VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

To stop data logging using VibroSight System Manager:

1. In VibroSight System Manager, select the host computer  from the VibroSight Hosts tree structure of the System Explorer window.
2. Select the running VibroSight Server  from the VibroSight Hosts tree structure of the System Explorer window that VibroSight System Manager is connected to.
3. Click the  Stop button corresponding to the Data Logging Manager in the Data

window.

VibroSight System Manager's Loggers window displays an information message reporting the result of the operation. For example,  The component "Data Logging Manager" has been stopped by the user. (The VibroSight System Manager's Loggers window is equivalent to the Message list box of the VibroSight Server main window (Xms.Server.Client.exe)).

The icon beside the Data Logging Manager changes from  to  in order to indicate that the data logging has stopped. The icon beside the overall VibroSight Server Core Components also changes from  to  when none of the data managers are running.

Parent topic: [Working with VibroSight Servers from VibroSight System Manager](#)

Related tasks

[Stopping database logging](#)

Starting data logging using VibroSight System Manager

You can start data logging by a VibroSight Server using the Data Logging Manager start command in VibroSight System Manager's Data window.

Once stopped, VibroSight Server data logging can be started (enabled) at any time to start logging the measurement data (specified by the data logging rules in VibroSight Configurator).

Alternatively, the equivalent menu command available in VibroSight Server can be used to start data logging for a VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

To start data logging using VibroSight System Manager:

1. In VibroSight System Manager, select the host computer  from the VibroSight Hosts tree structure of the System Explorer window.
2. Select the running VibroSight Server  from the VibroSight Hosts tree structure of the System Explorer window that VibroSight System Manager is connected to.
3. Click the  Start button corresponding to the Data Logging Manager in the Data window.

VibroSight System Manager's Loggers window displays an information message reporting the result of the operation. For example,  The component "Data Logging Manager" has been successfully started by the user. (The VibroSight System Manager's Loggers window is equivalent to the Message list box of the VibroSight Server main window (Xms.Server.Client.exe)).

The icon beside the Data Logging Manager changes from  to  in order to indicate that the data logging has started. The icon beside the overall VibroSight Server Core Components also changes from  to  when at least one of the data managers is running.

Parent topic: [Working with VibroSight Servers from VibroSight System Manager](#)

Related tasks

[Starting database logging](#)

VibroSight Modbus Server management

The VibroSight System Manager Modbus Server commands allow a VibroSight Modbus Server to be created, then started or stopped.

When a VibroSight Modbus Server is started, it is possible to connect to it (for example, in order to monitor the communications) or to stop the server.

When a VibroSight Modbus Server is stopped, it is possible to load a configuration to it (for example, after the Modbus Server configuration has been changed), delete it or start the server.

- **[Creating a VibroSight Modbus Server](#)**
After a VibroSight Modbus Server configuration file (*.mscfg) has been created and saved using VibroSight Configurator, VibroSight System Manager is used to create a VibroSight Modbus Server, using the information in the VibroSight Modbus Server configuration file and referencing the VibroSight Server used as the input.
- **[Manually starting a VibroSight Modbus Server using VibroSight System Manager](#)**
You can manually start a VibroSight Modbus Server using a Modbus Server command in VibroSight System Manager.
- **[Manually stopping a VibroSight Modbus Server using VibroSight System Manager](#)**
You can manually stop a VibroSight Modbus Server using a Modbus Server command in VibroSight System Manager.
- **[Connecting to a VibroSight Modbus Server using VibroSight System Manager](#)**
You can connect to a VibroSight Modbus Server using a Modbus Server command in VibroSight System Manager.
- **[Disconnecting from a VibroSight Modbus Server using VibroSight System Manager](#)**
You can disconnect from a VibroSight Modbus Server using a Modbus Server command in VibroSight System Manager.
- **[Loading a configuration to a VibroSight Modbus Server using VibroSight System Manager](#)**
You can load a configuration to a VibroSight Modbus Server using a Modbus Server command in VibroSight System Manager.
- **[Deleting a VibroSight Modbus Server using VibroSight System Manager](#)**
You can delete a VibroSight Modbus Server using a Modbus Server command in VibroSight System Manager.

Related tasks

[Managing VibroSight Modbus Server configurations](#)

Creating a VibroSight Modbus Server

After a VibroSight Modbus Server configuration file (*.mscfg) has been created and saved using VibroSight Configurator, VibroSight System Manager is used to create a VibroSight Modbus Server, using the information in the VibroSight Modbus Server configuration file and referencing the VibroSight Server used as the input.

A VibroSight Modbus Server must be running in order to allow the export of data from a VibroSight data repository (VibroSight historical data folder (*.vshdf)) via Modbus.

Note:

As a VibroSight Modbus Server is used to allow the export of data from a VibroSight data repository (VibroSight historical data folder (*.vshdf)), the VibroSight Server must also be running in order for the VibroSight Modbus Server to provide data.

1. Start VibroSight System Manager.
2. Select your  computer from the VibroSight Hosts tree structure of the System Explorer window (left).

Any  servers that are running on the computer are listed under the  computer.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The Actions window of the System Manager will show the available commands. If you cannot see the Actions window, click View Actions.

3. Click  Login under Access Rights in the Actions window (right) to display the Select a User Level dialog box and log in at the Admin user level.

Note:

If the  Modbus Server commands are unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Admin user rights are required to create a VibroSight Modbus Server.

4. Click  Create under  Modbus Server in the Actions window.

The Modbus Server creation Wizard appears.

5. Under Modbus Server Configuration:
 - a. Use Name to enter a name for the VibroSight Modbus Server.

In order to help manage the different VibroSight servers that can be used for a machinery monitoring application, it is recommended to use the name of the main VibroSight Server that was configured as the input server for the VibroSight Modbus Server but with a suitable suffix, for example, Unit1 Modbus.

- b. To configure the Configurator Configuration File, click the browse button and use the Open dialog box that appears to navigate the folders on the computer and select the VibroSight Modbus Server configuration file (*.mscfg) that was created using VibroSight Configurator.
- c. To configure the Project Location, click the browse button and use the Browse For Folder dialog box that appears to navigate the folders on the computer and specify in which folder to store the files related to the VibroSight Modbus Server. (The Make New Folder button can be used to create new folders if required.)
- d. Use Service Start Mode to define how the VibroSight Modbus Server will start:
 - If Automatic is selected, the VibroSight Modbus Server will be registered automatically as a Windows service with Startup Type set to Automatic.

If Manual is selected, the VibroSight Modbus Server will be registered automatically as a Windows service with Startup Type set to Manual.

If Disabled is selected, the VibroSight Modbus Server will not be registered as a Windows service, and must be started and stopped manually using VibroSight System Manager.

6. Click Finish to continue.

A new VibroSight Modbus Server configuration file (*.vssrvcfg) and a new VibroSight Modbus Server database file (*.vssrvdb) will be created in the folder specified as the Project Location, then the Modbus Server Creation Succeeded window is displayed. Click  to close the window.

7. Select the  VibroSight Modbus Server under the  computer in the VibroSight Hosts tree structure of the System Explorer window.

Information about the server is displayed under Information in the main working window (centre) and the available  Modbus Server commands for the server are displayed in the Actions Window.

Note:

The VibroSight Modbus Server is not started at this stage, as shown by the Status displayed under Information in the main working window.

8. To start the VibroSight Modbus Server, click  Start under  Modbus Server in the Actions window.

The VibroSight Modbus Server starts, then the Modbus Server Started window is displayed. Click  to close the window.

Note:

The Status of the VibroSight Modbus Server displayed under Information in the main working window will change from stopped to started.

When a VibroSight Modbus Server registered as a Windows service starts, *VibroSight Modbus Server - Name* (Name) can be seen listed as *Started* (Status) on the Services tab of Windows Task Manager. The service can also be seen in the Windows Services administrative tool.

Parent topic: [VibroSight Modbus Server management](#)

Related concepts

[Windows services](#)

[Modbus](#)

Related tasks

[Creating a VibroSight Modbus Server configuration](#)

Related reference

[VibroSight and Modbus byte ordering options](#)

Manually starting a VibroSight Modbus Server using VibroSight System Manager

You can manually start a VibroSight Modbus Server using a Modbus Server command in VibroSight System Manager.

VibroSight Modbus Servers that were created and registered as a Windows service can also be controlled and managed using the Windows Services administrative tool.

Note: When a VibroSight Modbus Server was created:

- If the Startup Type was set to Automatic, the VibroSight Modbus Server was registered automatically as a Windows service and the VibroSight Modbus Server starts at (Windows) system logon.
- If the Startup Type was set to Manual, the VibroSight Modbus Server was registered automatically as a Windows service but the VibroSight Modbus Server starts and stops when manually commanded to using the Modbus Server commands or the Windows Services administrative tool.
- If the Startup Type was set to Disabled, the VibroSight Modbus Server was not registered automatically as a Windows service and the VibroSight Modbus Server only starts and stops when manually commanded to using the Modbus Server commands.

1. Start VibroSight System Manager.
2. Select the  VibroSight Modbus Server under the  host computer in the VibroSight Hosts tree structure of the System Explorer window.

Note:

The VibroSight Modbus Server must be stopped in order to start it.

Information about the server is displayed under Information in the main working window (centre) and the available  Modbus Server commands for the server are displayed in the Actions Window.

If you cannot see the Actions window, click View Actions.

3. Click  Login under Access Rights in the Actions window (right) to display the Select a User Level dialog box and log in at the Admin user level.

Note:

If the  Modbus Server commands are unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Admin user rights are required to work with VibroSight Modbus Servers.

4. Click  Start under  Modbus Server in the Actions window.

The VibroSight Modbus Server starts, then the Modbus Server Start Succeeded window is displayed. Click  to close the window.

Note:

The Status of the VibroSight Modbus Server displayed under Information in the main working window will change from stopped to started.

When a VibroSight Modbus Server registered as a Windows service starts, *VibroSight Modbus Server - Name* (Name) can be seen listed as *Started* (Status) on the Services tab of Windows Task Manager. The service can also be seen in the Windows Services administrative tool.

Parent topic: [VibroSight Modbus Server management](#)

Manually stopping a VibroSight Modbus Server using VibroSight System Manager

You can manually stop a VibroSight Modbus Server using a Modbus Server command in VibroSight System Manager.

VibroSight Modbus Servers that were created and registered as a Windows service can also be controlled and managed using the Windows Services administrative tool.

Note: When a VibroSight Modbus Server was created:

- If the Startup Type was set to Automatic, the VibroSight Modbus Server was registered automatically as a Windows service and the VibroSight Modbus Server starts at (Windows) system logon.
- If the Startup Type was set to Manual, the VibroSight Modbus Server was registered automatically as a Windows service but the VibroSight Modbus Server starts and stops when manually commanded to using the Modbus Server commands or the Windows Services administrative tool.
- If the Startup Type was set to Disabled, the VibroSight Modbus Server was not registered automatically as a Windows service and the VibroSight Modbus Server only starts and stops when manually commanded to using the Modbus Server commands.

1. Start VibroSight System Manager.
2. Select the  VibroSight Modbus Server under the  host computer in the VibroSight Hosts tree structure of the System Explorer window.

Note:

The VibroSight Modbus Server must be stopped in order to start it.

Information about the server is displayed under Information in the main working window (centre) and the available  Modbus Server commands for the server are displayed in the Actions Window.

If you cannot see the Actions window, click View  Actions.

3. Click  Login under Access Rights in the Actions window (right) to display the Select a User Level dialog box and log in at the Admin user level.

Note:

If the  Modbus Server commands are unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Admin user rights are required to work with VibroSight Modbus Servers.

4. Click  Stop under  Modbus Server in the Actions window.

The VibroSight Modbus Server stops, then the Modbus Server Stop Succeeded window is

displayed. Click  to close the window.

Note:

The Status of the VibroSight Modbus Server displayed under Information in the main working window will change from started to stopped.

When a VibroSight Modbus Server registered as a Windows service stops, *VibroSight Modbus Server - Name* (Name) can be seen listed as *Stopped* (Status) on the Services tab of Windows Task Manager. The service can also be seen in the Windows Services administrative tool.

Parent topic: [VibroSight Modbus Server management](#)

Connecting to a VibroSight Modbus Server using VibroSight System Manager

You can connect to a VibroSight Modbus Server using a Modbus Server command in VibroSight System Manager.

Connecting to a running VibroSight Modbus Server allows the status of the Modbus communications to be monitored.

1. Start VibroSight System Manager.
 2. Select a running  VibroSight Modbus Server under the  host computer in the VibroSight Hosts tree structure of the System Explorer window.
- Note:

The VibroSight Modbus Server must be running (started) in order to connect to it.

Information about the server is displayed under Information in the main working window (centre) and the available  Modbus Server commands for the server are displayed in the Actions Window.

If you cannot see the Actions window, click View  Actions.

3. Click  Login under Access Rights in the Actions window (right) to display the Select a User Level dialog box and log in at the Admin user level.

Note:

If the  Modbus Server commands are unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Admin user rights are required to create a VibroSight Modbus Server.

4. Click  Connect under  Modbus Server in the Actions window.

VibroSight System Manager connects to the VibroSight Modbus Server.

Note:

The Connection Connect/Disconnect command is a toggle command, that is, only the Connect

command is available when the VibroSight Modbus Server is not connected to VibroSight System Manager and only the Disconnect command is available when the VibroSight Modbus Server is connected to VibroSight System Manager.

Once connected to a VibroSight Modbus Server, VibroSight System Manager's Overview and Communication Monitoring windows update to display the status of the server and the Modbus communications.

Parent topic: [VibroSight Modbus Server management](#)

Disconnecting from a VibroSight Modbus Server using VibroSight System Manager

You can disconnect from a VibroSight Modbus Server using a Modbus Server command in VibroSight System Manager.

1. Start VibroSight System Manager.
2. Select the running  VibroSight Modbus Server under the  host computer in the VibroSight Hosts tree structure of the System Explorer window.

Note:

The VibroSight Modbus Server must be running (started) and connected to in order to connect from it.

Information about the server is displayed under Overview in the main working window (centre) and the available  Modbus Server commands for the server are displayed in the Actions Window.

If you cannot see the Actions window, click View Actions.

3. Click  Login under Access Rights in the Actions window (right) to display the Select a User Level dialog box and log in at the Admin user level.

Note:

If the  Modbus Server commands are unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Admin user rights are required to create a VibroSight Modbus Server.

4. Click  Disconnect under  Modbus Server in the Actions window.

VibroSight System Manager disconnects from the VibroSight Modbus Server.

Note:

The Connection Connect/Disconnect command is a toggle command, that is, only the Connect command is available when the VibroSight Modbus Server is not connected to VibroSight System Manager and only the Disconnect command is available when the VibroSight Modbus Server is connected to VibroSight System Manager.

Parent topic: [VibroSight Modbus Server management](#)

Loading a configuration to a VibroSight Modbus Server using VibroSight System Manager

You can load a configuration to a VibroSight Modbus Server using a Modbus Server command in VibroSight System Manager.

Typically, a VibroSight Modbus Server configuration is loaded to a VibroSight Modbus Server if the configuration has been changed after the VibroSight Modbus Server has been created and the user wants to continue using the same VibroSight Modbus Server database file.

Note:

It is not necessary to load the VibroSight Modbus Server configuration after a VibroSight Modbus Server has been created using the configuration – unless the configuration has changed.

1. Start VibroSight System Manager.
2. Select the  VibroSight Modbus Server under the  host computer in the VibroSight Hosts tree structure of the System Explorer window.

Information about the server is displayed under Information in the main working window (centre) and the available  Modbus Server commands for the server are displayed in the Actions Window.

If you cannot see the Actions window, click View  Actions.

3. Click  Login under Access Rights in the Actions window (right) to display the Select a User Level dialog box and log in at the Admin user level.

Note:

If the  Modbus Server commands are unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Admin user rights are required to work with VibroSight Modbus Servers.

4. Click  Load Configuration under  Modbus Server in the Actions window.

The Modbus Server Configuration Load Wizard appears.

5. Under Modbus Server Configuration:
 - a. To configure the Configuration File, click the browse button and use the Open dialog box that appears to navigate the folders on the computer and select the VibroSight Modbus Server configuration file (*.mscfg) that was edited using VibroSight Configurator. Then click Open.
6. Click Finish to continue.

The VibroSight Modbus Server configuration is loaded to the VibroSight Modbus Server database, then the Load of Modbus Server Configuration Succeeded window is displayed. Click  to close the window.

The VibroSight Modbus Server starts using the new configuration.

Parent topic: [VibroSight Modbus Server management](#)

Deleting a VibroSight Modbus Server using VibroSight System Manager

You can delete a VibroSight Modbus Server using a Modbus Server command in VibroSight System Manager.

Deleting a VibroSight Modbus Server breaks the link between the VibroSight Modbus Server and the VibroSight Server used as the input, and removes the VibroSight Modbus Server from VibroSight System Manager. The Windows service for the VibroSight Modbus Server is also deleted, if the VibroSight Modbus Server was created as a Windows service.

For VibroSight Modbus Servers that were created and registered as a Windows service, deleting can also be controlled and managed using the Windows Services administrative tool.

1. Start VibroSight System Manager.
2. Select the  VibroSight Modbus Server under the  host computer in the VibroSight Hosts tree structure of the System Explorer window.

Information about the server is displayed under Information in the main working window (centre) and the available  Modbus Server commands for the server are displayed in the Actions Window.

If you cannot see the Actions window, click View  Actions.

3. Click  Login under Access Rights in the Actions window (right) to display the Select a User Level dialog box and log in at the Admin user level.

Note:

If the  Modbus Server commands are unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Admin user rights are required to work with VibroSight Modbus Servers.

4. Click  Delete under  Modbus Server in the Actions window. When prompted, click Yes to delete the VibroSight Modbus Server.

The VibroSight Modbus Server is removed from VibroSight System Manager.

The VibroSight Modbus Server configuration file (*.mscfg) and the VibroSight Modbus Server database files (*.vssrvcfg and *.vssrvdb) are not deleted by this command. If these files are no longer required, they must be manually deleted, for example, using a Windows Explorer.

Parent topic: [VibroSight Modbus Server management](#)

VibroSight OPC Server management

The VibroSight System Manager OPC Server commands allow a VibroSight OPC Server to be created, then published or unpublished.

Note:

Publishing a VibroSight OPC Server is OPC terminology for running the server (equivalent to starting a VibroSight Modbus Server). Unpublishing a VibroSight OPC Server is OPC terminology for stopping the server (equivalent to stopping a VibroSight Modbus Server).

When a VibroSight OPC Server is published, it is possible to load a configuration to it (for example, after the OPC Server configuration has been changed) or to unpublish the server.

When a VibroSight OPC Server is unpublished, it is possible to load a configuration to it, delete it or publish the server.

- **[Creating a VibroSight OPC Server](#)**
After a VibroSight OPC Server configuration file (*.opscfg) has been created and saved using VibroSight Configurator, VibroSight System Manager is used to create a VibroSight OPC Server, using the information in the VibroSight OPC Server configuration file and referencing the VibroSight Server used as the input.
- **[Manually publishing a VibroSight OPC Server using VibroSight System Manager](#)**
You can manually publish (start) a VibroSight OPC Server using an OPC Server command in VibroSight System Manager.
- **[Manually unpublishing a VibroSight OPC Server using VibroSight System Manager](#)**
You can manually unpublish (stop) a VibroSight OPC Server using an OPC Server command in VibroSight System Manager.
- **[Loading a configuration to a VibroSight OPC Server using VibroSight System Manager](#)**
You can load a configuration to a VibroSight OPC Server using an OPC Server command in VibroSight System Manager.
- **[Deleting a VibroSight OPC Server using VibroSight System Manager](#)**
You can delete a VibroSight OPC Server using an OPC Server command in VibroSight System Manager.

Related tasks

[Managing VibroSight OPC Server configurations](#)

Creating a VibroSight OPC Server

After a VibroSight OPC Server configuration file (*.opscfg) has been created and saved using VibroSight Configurator, VibroSight System Manager is used to create a VibroSight OPC Server, using the information in the VibroSight OPC Server configuration file and referencing the VibroSight Server used as the input.

A VibroSight OPC Server must be running in order to allow the export of data from a VibroSight data repository (VibroSight historical data folder (*.vshdf)) via OPC.

Note:

As a VibroSight OPC Server is used to allow the export of data from a VibroSight data repository (VibroSight historical data folder (*.vshdf)), the VibroSight Server must also be running in order for the VibroSight OPC Server to provide data.

1. Start VibroSight System Manager.

2. Select your  computer from the VibroSight Hosts tree structure of the System Explorer window (left).

Any  servers that are running on the computer are listed under the  computer.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The Actions window of the System Manager will show the available commands. If you cannot see the Actions window, click View Actions.

3. Click  Login under Access Rights in the Actions window (right) to display the Select a User Level dialog box and log in at the Admin user level.

Note:

If the  OPC Server commands are unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Admin user rights are required to create a VibroSight OPC Server.

4. Click  Create under  OPC Server in the Actions window.

The OPC Server creation Wizard appears.

5. Under DCOM Configuration:
 - a. The Application ID is used to uniquely identify the underlying DCOM component service to be used by the VibroSight OPC Server.

Note:

This unique Application ID is generated automatically by the VibroSight software and cannot be edited by the user.

The OPC interface implemented by the VibroSight software is OPC DA (data access), which is based on the COM (component object model) and DCOM (distributed component object model) technologies from Microsoft. Hence the requirement for a DCOM component service application ID.

- b. Use Name to enter a name for the underlying DCOM component service to be used by the VibroSight OPC Server.

In order to help manage the different VibroSight servers that can be used for a machinery monitoring application, it is recommended to use the name of the main VibroSight Server that was configured as the input server for the VibroSight OPC Server but with a suitable suffix, for example, Unit1 DCOM.

6. Under OPC Server Configuration:
 - a. To configure the Configuration File, click the browse button and use the Open dialog

box that appears to navigate the folders on the computer and select the VibroSight OPC Server configuration file (*.opcscfg) that was created using VibroSight Configurator.

- b. To configure the Database File to be used by the VibroSight OPC Server, click the browse button and use the Save As dialog box that appears to navigate the folders on the computer and select in which folder and under what file name to save the VibroSight OPC Server database file, for example, Unit1 OPC.vssrvdb. Then click Save.
- c. The CLSID key is used to uniquely identify the underlying COM class object to be used by the VibroSight OPC Server.

Note:

This unique CLSID is generated automatically by the VibroSight software and cannot be edited by the user.

The OPC interface implemented by the VibroSight software is OPC DA (data access), which is based on the COM (component object model) and DCOM (distributed component object model) technologies from Microsoft. Hence the requirement for a COM class object CLSID key.

- d. Use Name to enter a name for the VibroSight OPC Server.

In order to help manage the different VibroSight servers that can be used for a machinery monitoring application, it is recommended to use the name of the main VibroSight Server that was configured as the input server for the VibroSight OPC Server but with a suitable suffix, for example, Unit1 OPC.

7. Click Finish to continue.

A new VibroSight OPC Server database file (*.vssrvdb) will be created in the folder specified as the Database File, then the OPC Server Creation Succeeded window is displayed. Click O to close the window.

8. Select the  VibroSight OPC Server under the  computer in the VibroSight Hosts tree structure of the System Explorer window.

Note:

It may be necessary to update the System Explorer window in order for the VibroSight OPC Server to be displayed: click  Refresh or View Refresh).

Information about the server is displayed under Information in the main working window (centre) and the available  OPC Server commands for the server are displayed in the Actions Window.

Note:

The VibroSight OPC Server is not published at this stage, as shown by the Status displayed under Information in the main working window.

9. To publish the VibroSight OPC Server, click  Publish under  OPC Server in the Actions window.

The VibroSight OPC Server is published, then the OPC Server Publishing Succeeded window is displayed. Click O to close the window.

Note:

The Status of the VibroSight OPC Server displayed under Information in the main working window will change from unpublished to published.

Parent topic: [VibroSight OPC Server management](#)

Related concepts

[OPC](#)

Related tasks

[Creating a VibroSight OPC Server configuration](#)

Related reference

[VibroSight and OPC data](#)

Manually publishing a VibroSight OPC Server using VibroSight System Manager

You can manually publish (start) a VibroSight OPC Server using an OPC Server command in VibroSight System Manager.

Publishing a VibroSight OPC Server is OPC terminology for running the server (equivalent to starting a VibroSight Modbus Server).

1. Start VibroSight System Manager.
2. Select the  VibroSight OPC Server under the  host computer in the VibroSight Hosts tree structure of the System Explorer window.

Note:

A VibroSight OPC Server must be unpublished in order to publish it.

Information about the server is displayed under Information in the main working window (centre) and the available  OPC Server commands for the server are displayed in the Actions Window.

If you cannot see the Actions window, click View  Actions.

3. Click  Login under Access Rights in the Actions window (right) to display the Select a User Level dialog box and log in at the Admin user level.

Note:

If the  OPC Server commands are unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Admin user rights are required to work with VibroSight OPC Servers.

4. Click  Publish under  OPC Server in the Actions window. When prompted, click Yes to publish the VibroSight OPC Server.

The VibroSight OPC Server is published, then the OPC Server Publishing Succeeded window is displayed. Click  to close the window.

Note:

The Status of the VibroSight OPC Server displayed under Information in the main working window will change from unpublished to published.

Parent topic: [VibroSight OPC Server management](#)

Manually unpublishing a VibroSight OPC Server using VibroSight System Manager

You can manually unpublish (stop) a VibroSight OPC Server using an OPC Server command in VibroSight System Manager.

Unpublishing a VibroSight OPC Server is OPC terminology for stopping the server (equivalent to stopping a VibroSight Modbus Server).

1. Start VibroSight System Manager.
2. Select the  VibroSight OPC Server under the  host computer in the VibroSight Hosts tree structure of the System Explorer window.

Note:

A VibroSight OPC Server must be published in order to unpublish it.

Information about the server is displayed under Information in the main working window (centre) and the available  OPC Server commands for the server are displayed in the Actions Window.

If you cannot see the Actions window, click View  Actions.

3. Click  Login under Access Rights in the Actions window (right) to display the Select a User Level dialog box and log in at the Admin user level.

Note:

If the  OPC Server commands are unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Admin user rights are required to work with VibroSight OPC Servers.

4. Click  Unpublish under  OPC Server in the Actions window.

The VibroSight OPC Server is unpublished, then the OPC Server Unpublishing Succeeded window is displayed. Click O  to close the window.

Note:

The Status of the VibroSight OPC Server displayed under Information in the main working window will change from published to unpublished.

Parent topic: [VibroSight OPC Server management](#)

Loading a configuration to a VibroSight OPC

Server using VibroSight System Manager

You can load a configuration to a VibroSight OPC Server using an OPC Server command in VibroSight System Manager.

Typically, a VibroSight OPC Server configuration is loaded to a VibroSight OPC Server if the configuration has been changed after the VibroSight OPC Server has been created and the user wants to continue using the same VibroSight OPC Server database file.

Note:

It is not necessary to load the VibroSight OPC Server configuration after a VibroSight OPC Server has been created using the configuration – unless the configuration has changed.

1. Start VibroSight System Manager.
2. Select the  VibroSight OPC Server under the  host computer in the VibroSight Hosts tree structure of the System Explorer window.

Information about the server is displayed under Information in the main working window (centre) and the available  OPC Server commands for the server are displayed in the Actions Window.

If you cannot see the Actions window, click View Actions.

3. Click  Login under Access Rights in the Actions window (right) to display the Select a User Level dialog box and log in at the Admin user level.

Note:

If the  OPC Server commands are unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Admin user rights are required to work with VibroSight OPC Servers.

4. Click  Load Configuration under  OPC Server in the Actions window.

The OPC Server Configuration Load Window appears.

5. Under OPC Server Configuration:
 - a. To configure the Configuration File, click the browse button and use the Open dialog box that appears to navigate the folders on the computer and select the VibroSight OPC Server configuration file (*.opscfg) that was edited using VibroSight Configurator. Then click Open.
6. Click Finish to continue.

The VibroSight OPC Server configuration is loaded to the VibroSight OPC Server database, then the Load of OPC Server Configuration Succeeded window is displayed. Click OK to close the window.

The VibroSight OPC Server starts using the new configuration.

Parent topic: [VibroSight OPC Server management](#)

Deleting a VibroSight OPC Server using VibroSight System Manager

You can delete a VibroSight OPC Server using an OPC Server command in VibroSight System Manager.

Deleting a VibroSight OPC Server breaks the link between the VibroSight OPC Server and the VibroSight Server used as the input, and removes the VibroSight OPC Server from VibroSight System Manager.

1. Start VibroSight System Manager.
2. Select the  VibroSight OPC Server under the  host computer in the VibroSight Hosts tree structure of the System Explorer window.

Information about the server is displayed under Information in the main working window (centre) and the available  OPC Server commands for the server are displayed in the Actions Window.

If you cannot see the Actions window, click View Actions.

3. Click  Login under Access Rights in the Actions window (right) to display the Select a User Level dialog box and log in at the Admin user level.

Note:

If the  OPC Server commands are unavailable (greyed out), check that you are working at the correct user level (with the necessary access rights). Admin user rights are required to work with VibroSight OPC Servers.

4. Click  Delete under  OPC Server in the Actions window. When prompted, click Yes to delete the VibroSight OPC Server.

The VibroSight OPC Server is removed from VibroSight System Manager.

The VibroSight OPC Server configuration file (*.vssrvcfg) and the VibroSight OPC Server database file (*.vssrvdb) are not deleted by this command. If these files are no longer required, they must be manually deleted, for example, using a Windows Explorer.

Parent topic: [VibroSight OPC Server management](#)

Access rights

VibroSight System Manager provides the tools to manage the system of user levels (access rights) used by the VibroSight software.

- [Viewing user levels](#)
You can view the current user level at any time when using a VibroSight software module.
- [Changing user levels](#)
You can change your current user level at any time when using a VibroSight software module.
- [Changing user level passwords](#)

You can change the passwords used to control access to the different user levels using VibroSight System Manager.

- **[Changing the user level timeout period for the VibroSight software](#)**

The timeout period after which the user level – and associated access rights – will return to the default Read user level can be changed.

Related concepts

[Access rights](#)

Viewing user levels

You can view the current user level at any time when using a VibroSight software module.

The user level defines the access rights and controls the features of the software available.

The current user level is typically displayed on the status bar at the bottom of the VibroSight software module's main window. A typical user level is displayed as follows:



Ready Local Host User Level : Read

Note:

Read level user access is the default level given when a VibroSight software module is started.

Parent topic: [Access rights](#)

Changing user levels

You can change your current user level at any time when using a VibroSight software module.

Changing your current user level simply requires you to select a new user level. Your user level defines your access rights and controls the features of the software available to you.

1. Click the user level (access rights) icon  on the toolbar.

The Select a User Level dialog box appears.

2. Select the required User Level, then type the appropriate Password and click **OK**.
3. The changed user level is displayed on the left-hand side of the status bar across the bottom of the window.

Parent topic: [Access rights](#)

Related tasks

[Logging in as Admin](#)

Changing user level passwords

You can change the passwords used to control access to the different user levels using VibroSight System Manager.

The passwords used to control access to the different user levels should be changed from the default

values if you require additional system security.

Note:

VibroSight passwords are case sensitive, that is `read`, `ad` and `Admin` are different passwords.

The default passwords are:

User level	Default password
Read	None (not password protected)
Master	<code>admin</code>
Admin	<code>admin</code>

1. Start VibroSight System Manager.
2. Select your computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The Actions window of the System Manager will show the available tools. If you cannot see the Actions window, click View Actions.

3. Click  Change Passwords under Access Rights in the Actions window to start the change password wizard.
4. To change the Admin password:
 - a. In the Login area, select Admin as the User Level and then type the current password in the Password field.
 - b. In the Admin Password area, type the new password in the New Password field and then retype the new password in the Confirm Password field. Then click Finish.
5. To change the Master password:
 - a. In the Login area, select Master as the User Level and then type the current password in the Password field.
 - b. In the Master Password area, type the new password in the New Password field and then retype the new password in the Confirm Password field. Then click Finish.
6. VibroSight System Manager will update and store the passwords on the VibroSight host computer where the server is running.

Parent topic: [Access rights](#)

Changing the user level timeout period for the VibroSight software

The timeout period after which the user level – and associated access rights – will return to the

default Read user level can be changed.

To provide additional security, the VibroSight software modules that implement access rights will return to the default Read user level after a configured timeout period. This timeout period is common to all of the software modules and can be configured as follows:

1. Start VibroSight Vision.
2. Click the Tools → Options menu command.

The Options window for VibroSight Vision is displayed.

3. Under Access Rights in the Options window (left pane), select Access Rights.

The currently configured user level timeout period is displayed in the Options window (right pane), under Revert.

4. Use the controls under Revert to define the new timeout period, after which the user level will revert to the default Read user level.
5. Click O → to apply any changes to the timeout period and close the Options window.

Any changes to the user level timeout period take affect immediately, so the VibroSight software will revert to the default Read user level after the timeout period.

Parent topic: [Access rights](#)

Licensing

The VibroSight System Manager provides you with the tools to manage your VibroSight software licences.

- [Activating a licence](#)
You can activate a licence at any time using the VibroSight System Manager Licensing tools.
- [Removing a licence](#)
You can remove a licence at any time using the VibroSight System Manager Licensing tools.
- [Generating system information](#)
You can generate the system information required by Meggitt Sensing Systems to create a licence key at any time using the VibroSight System Manager Licensing tools.
- [Viewing licensing information](#)
You can view licensing information at any time using VibroSight System Manager.

Activating a licence

You can activate a licence at any time using the VibroSight System Manager Licensing tools.

Activating a new licence might become necessary, for example, if additional software options are purchased and need to be enabled.

1. Start VibroSight System Manager.
2. Select your computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The Actions window of the System Manager will show the available tools. If you cannot see the Actions window, click View Actions.

3. Click  Activate License under Licensing in the Actions window to start the licence activation wizard. Then follow the instructions given by the wizard.

Parent topic: [Licensing](#)

Related concepts

[VibroSight software upgrade process](#)

Removing a licence

You can remove a licence at any time using the VibroSight System Manager Licensing tools.

Before you activate a new licence, you should remove the existing licence. This might become necessary if you, for example, purchase additional software options that you need to enable.

1. Start VibroSight System Manager.
2. Select your computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The Actions window of the System Manager will show the available tools. If you cannot see the Actions window, click View Actions.

3. Click  Remove License under Licensing in the Actions window to start the licence removal wizard.

The licence removal wizard appears.

4. Follow the instructions given by the wizard.
- Note:

If you select the Create a backup check box, the Save to file are will be enabled which allows you to specify a folder and a file name to use to save the current licence file (*.lic) information.

Parent topic: [Licensing](#)

Generating system information

You can generate the system information required by Meggitt Sensing Systems to create a licence key at any time using the VibroSight System Manager Licensing tools.

The required registration file is automatically generated by the VibroSight software. The information captured is specific to the computer on which the software is installed. Typically, this includes the MAC address, BIOS serial number and motherboard serial number.

1. Start VibroSight System Manager.
2. Select your computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

The Actions window of the System Manager will show the available tools. If you cannot see the Actions window, click View Actions.

3. Click  System Information under Licensing in the Actions window to start the system information wizard. Then follow the instructions given by the wizard.

The wizard appears giving details of the collected system information.

4. Click Finish to save the collected system information in a system information file (*.xsi) and use the resultant Save As dialog box to indicate in which folder and under what name the information should be saved.

Note: The VibroSight software uses a default file name that consists of the MAC address and the *.xsi file name extension. If you prefer, you can choose another file name, for example, VibroSight_registration.xsi.

5. Email the registration file to: energysupport@ch.meggitt.com. Meggitt Sensing Systems customer support will generate the required licence key and sent the information to the user.

Parent topic: [Licensing](#)

Data repositories

VibroSight Configurator and VibroSight Server provide the tools for the configuration and operation of a data management strategy for a VibroSight-based machinery monitoring and protection system, that is, the tools to automate data management for a VibroSight system. VibroSight System Manager provides the tools for manual data management operations.

Note:

VibroSight 3.3.0 or later includes integrated support for data management that simplifies the configuration and operation of a data management strategy for a VibroSight-based machinery monitoring and protection system.

To use VibroSight's integrated data management to implement a data management strategy:

- VibroSight Configurator is used to configure the integrated data management operations that are required to be run on the VibroSight data repository used by the system. That is, the Offline data storage, Data purge and Database backup operations.
- VibroSight Server automatically calculates, schedules and runs individual commands on the server's data repository to implement the required data management strategy (corresponding to the operations configured in VibroSight Configurator). VibroSight Server also reports the status of the individual commands on a dedicated Data management tab, making it easier to know the state of the data management for a system.

VibroSight's integrated data management is completely self-contained: there is no longer any requirement for a separate task scheduler such as Windows Task Scheduler to help automate data management for a system.

Note:

VibroSight 3.0.0 or later exclusively uses data repositories based on the VibroSight historical data system (that is, VibroSight historical data folders (*.vshdf) and VibroSight historical data archives (*.vshda)).

Existing data repositories created with earlier versions of VibroSight must be manually migrated from VibroSight databases (*.vssrvdb) to the VibroSight historical data system before they can be used with VibroSight 3.0.0 or later. This is done using the VibroSight System Manager Database Update and Copy commands.

- [**Working with VibroSight data repositories - VibroSight Configurator and VibroSight Server operations versus VibroSight System Manager commands**](#)
VibroSight supports two ways of working with VibroSight data repositories: using VibroSight Configurator and VibroSight Server integrated data management operations, and using VibroSight System Manager commands.
- [**Working with VibroSight data repositories - VibroSight System Manager commands and time ranges**](#)
When working with VibroSight data repositories, it is important to understand how the VibroSight System Manager commands specify time ranges.
- [**Copying a VibroSight data repository**](#)
The data in a VibroSight data repository can be selectively copied using the VibroSight System Manager Copy command.
- [**Summarising a VibroSight data repository**](#)
The data in a VibroSight data repository can be summarised using the VibroSight System Manager Summary command.
- [**Updating a VibroSight data repository**](#)
A VibroSight data repository can be updated using the VibroSight System Manager Database Update command.
- [**Purging a VibroSight data repository**](#)
The data in a VibroSight data repository can be selectively purged (truncated) using the VibroSight System Manager Purge command.
- [**Backing up a VibroSight data repository**](#)
If required, a VibroSight data repository can be backed up by copying and pasting all of the data repository files using Windows Explorer.

Working with VibroSight data repositories -

VibroSight Configurator and VibroSight Server operations versus VibroSight System Manager commands

VibroSight supports two ways of working with VibroSight data repositories: using VibroSight Configurator and VibroSight Server integrated data management operations, and using VibroSight System Manager commands.

VibroSight Configurator and VibroSight Server integrated data management operations

VibroSight Configurator and VibroSight Server operations are intended for the configuration and operation of a data management strategy for a VibroSight-based machinery monitoring and protection system. These operations are available in VibroSight Configurator's Data storage view, under Data Management:

- Offline data storage
- Data purge
- Database backup.

VibroSight Configurator is used to configure the integrated data management operations that are required to be run on the VibroSight data repository used by the system. Then VibroSight Server automatically calculates, schedules and runs individual commands on the server's data repository to implement the required data management strategy.

Note:

VibroSight's integrated data management is completely self-contained: there is no longer any requirement for a separate task scheduler such as Windows Task Scheduler to help automate data management for a system.

VibroSight System Manager data repository commands

VibroSight System Manager commands are intended to supplement VibroSight's integrated data management (see above) and are intended for manual data management operations. For example, copying part of a VibroSight data repository in order to make it faster and easier to share and work with particular data of interest. These commands are available in VibroSight System Manager's Actions window, under Data Repositories:

-  Copy
-  Summary
-  Database Update
-  Purge.

The VibroSight System Manager commands are an easy way to work with VibroSight data repositories as each command displays the options that can be selected for the operation, page-by-page.

Note:

Since VibroSight 3.3.0, the command-line equivalent of these VibroSight System Manager commands (that is, vibrosightdatacopy.exe (equivalent to  Copy), vibrosightextractsummary.exe (equivalent to  Summary), and vibrosightdatapurge.exe (equivalent to  Purge)) are no longer supported, as for the purposes of data management strategy they are effectively replaced by VibroSight's integrated data management operations.

Parent topic: [Data repositories](#)

Related concepts

[Working with VibroSight data repositories](#)

Related tasks

[Summarising a VibroSight data repository](#)

[Copying a VibroSight data repository](#)

[Purging a VibroSight data repository](#)

Working with VibroSight data repositories - VibroSight System Manager commands and time ranges

When working with VibroSight data repositories, it is important to understand how the VibroSight System Manager commands specify time ranges.

VibroSight System Manager data repository commands and time ranges

The following VibroSight System Manager commands for working with the data repositories require that a time range is specified:

-  Copy command – requires that a time range is specified for the data to be copied using relative or absolute time controls.

Optionally, an Align to full periods control can also be used.

-  Summary command – requires that a time range is specified for the data to be summarised using relative or absolute time controls.

Optionally, an Align to full periods control can also be used.

-  Purge command – requires that a time range is specified for the data to be kept using relative time controls or a time range is specified for the data to be purged using absolute time controls.

Note:

The names used for the Purge command's time controls are slightly different in order to clarify their operation for example, Purge all, Keep last, Keep this, Purge from and Purge to (rather than All, Last, This, From and To).

Time range controls

When prompted, the time range of the data is specified using one of the following controls:

- All – used to specify the complete time range, corresponding to all available data.
- Last – used to specify a relative time range using the last n min(s) / hour(s) / day(s) / week(s) / month(s), relative to the current time.
- This – used to specify a relative time range using this Hour / Day / Week / Month, relative to the current time.
- Absolute time range – used to specify an absolute time range using the From and To time controls.

When the All, Last or This controls are used, VibroSight System Manager indicates a corresponding time range using the From and To time controls of the Absolute time range.

Note:

The time range displayed in the From and To time controls of the Absolute time range is for indication purposes only, the actual time range used by the command (available from the log and/or summary report files) can be slightly different. For example, the actual time range used can be different if there is a delay between configuring the command and running it, especially if the time range is specified using a relative time range.

So, always check the From and To time controls to ensure that the specified time range is correct, before clicking Next to continue. This is particularly useful when the Align to full periods control is also used.

Align to full periods control

When specifying the time range of the data to copy using the Last control, the optional Align to full periods control can also be used, if available for the command.

When the Align to full periods control is selected, it affects the actual time range used for the copy command in a number of ways:

- If the Last control uses min(s), then 10, 20 and 30 are the only permitted minute values.
- An align offset time is used by VibroSight when it calculates the actual time range, in order to ensure that the data is available.
- The calculated actual time range is aligned in time to the nearest full time period in order to obtain the final absolute time range to use.

When the optional Align to full periods control is used, VibroSight System Manager indicates a corresponding time range using the From and To time controls of the Absolute time range.

Note:

The time range displayed in the From and To time controls of the Absolute time range is for indication purposes only, the actual time range used by the command (available from the log and/or summary report files) can be slightly different. For example, the actual time range used can be different if there is a delay between configuring the command and running it, especially if the time range is specified using a using a relative time range.

Example without time alignment

When the Copy command specifies the last n min(s) / hour(s) / day(s) / week(s) / month(s), without time alignment, VibroSight calculates the absolute time range to use in the following way:

From time current time – last n time

To time current time

For example, if the current time is 11:22:33 and the last 15 minutes are specified without time alignment:

From time 11:22:33 – 00:15:00 11:07:33

To time 11:22:33

Example with time alignment

When the Copy command specifies the last n min(s) / hour(s) / day(s) / week(s) / month(s), with time alignment, VibroSight calculates the absolute time range to use in the following way:

From time current time – last n time – align offset time (with time alignment)

To time From time + last n time (with time alignment)

For example, if the current time is 11:22:33 and the last 10 minutes are specified without time alignment:

From time 11:22:33 – 00:10:00 – 00:20:00 10:52:33 10:50:00 after alignment

To time 10:50:00 + 00:10:00 11:00:00 10:59:59 after alignment

Align offset time

The align offset time is a fixed time period used by VibroSight Server and VibroSight System Manager when calculating the actual time range to be used by the Copy command, when the Align to full periods control is used.

Basically, it is a time buffer that allows for the data handling and data logging performed by the VibroSight Server, in order to ensure that the data is available in the VibroSight data repository when the Copy command runs.

Parent topic: [Data repositories](#)

Related concepts

[VibroSight Server and the align offset time](#)

Related tasks

[Summarising a VibroSight data repository](#)

[Copying a VibroSight data repository](#)

[Purging a VibroSight data repository](#)

Copying a VibroSight data repository

The data in a VibroSight data repository can be selectively copied using the VibroSight System Manager Copy command.

The VibroSight System Manager Copy command can be used to selectively:

- Copy data in any VibroSight historical data folder (*.vshdf) to a VibroSight historical data archive (*.vshda).
- Copy data in a running VibroSight historical data folder (*.vshdf) to a VibroSight historical data archive (*.vshda) using incremental copies.
- Copy data in a VibroSight database (*.vssrvdb) to a VibroSight historical data archive (*.vshda) or to a VibroSight historical data folder (*.vshdf).

Note:

VibroSight System Manager Data repositories commands are intended for manual data management tasks that supplement the data management strategy implemented for a VibroSight-based machinery monitoring and protection system using VibroSight's integrated data management operations (using VibroSight Configurator and VibroSight Server).

Copying the data in a VibroSight data repository (VibroSight historical data folder (*.vshdf) or VibroSight database (*.vssrvdb)) using the Copy command is the recommended way to create copies of required data as the data repository can remain in use by VibroSight during the copy operation. Whereas external repository tools usually require that a data repository is not in use.

Copying a VibroSight data repository typically makes a copy of the selected part of the source data repository, for example, the selected data for the specified time range, with optional data reduction.

As a special case, data can be copied from a running VibroSight historical data folder (*.vshdf) to a VibroSight historical data archive (*.vshda) using incremental copies so that that future data is also copied, which allows the size of the copied data repository to be larger than the size of the “active” data repository in order to improve overall system performance.

Note: Copying the data in a VibroSight data repository does not affect the contents of the source data repository in any way.

Note:

VibroSight 3.0.0 or later exclusively uses data repositories based on the VibroSight historical data system (that is, VibroSight historical data folders (*.vshdf) and VibroSight historical data archives (*.vshda)).

Existing data repositories created with earlier versions of VibroSight must be manually migrated from VibroSight databases (*.vssrvdb) to the VibroSight historical data system before they can be used with VibroSight 3.0.0 or later. This is done using the VibroSight System Manager Database

Update and Copy commands.

In practice, VibroSight data repositories are copied for a number of reasons. For example:

- A smaller VibroSight historical data archive (*.vshda) generated from a larger VibroSight historical data folder (*.vshdf) makes it faster and easier to share and work with particular data of interest.
- A VibroSight historical data archive (*.vshda) generated from a VibroSight historical data folder (*.vshdf) can use “output file flagging” in order to make it easier to find copied data that has alarms/events at the selected severity level.
- An existing VibroSight database (*.vssrvdb) copied to a VibroSight historical data archive (*.vshda) allows older data to be used with VibroSight 3.0.0 or later.

To copy a VibroSight data repository:

1. In VibroSight System Manager, select your computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

2. In the Actions window, under Data Repositories, click  Copy to start the copy command (operation).
3. When prompted to Select your source type, select the type of the source data repository from the list displayed. Then click Next.

Under Create a new copy from a source type, select Historical data folder in order to copy data from a VibroSight historical data folder (*.vshdf) to a VibroSight historical data archive (*.vshda) by running a new copy command.

Under Create a new copy from a source type, select VibroSight database in order to copy data from a VibroSight database (*.vssrvdb) to a VibroSight historical data archive (*.vshda) or to a VibroSight historical data folder (*.vshdf) by running a new copy command.

4. When prompted to Select the historical data file you would like to copy or Select the database you would like to copy, select the appropriate file from the list of those available. Then click Next.

Note:

The data sources listed include all relevant VibroSight data repositories under VibroSight's default data folder (data path directory), typically, C: VibroSight Data

A VibroSight historical data folder is identified by a *.vshdf file and an associated Storage subfolder.

A VibroSight database is identified by a *.vssrvdb file.

Alternatively, the file can be specified by typing the file path in the Choose file text box or by clicking the browse button () and using the dialog box that appears.

5. When prompted to Select your destination type, select either Historical data archive or Historical data folder. Then click Next.
6. If a historical data archive was selected as the destination type, when prompted to Configure your destination historical data archive, specify the location for the copied data repository in the Archive location text box (alternatively, the browse button and dialog box can be used). Specify the file name for the copied data repository in the Archive file name text box. Then click Next.

Note that a timestamp (date-time string derived from the local computer clock) placeholder is automatically included in the archive file name by a timestamp sequence in the format `yyyyMMddHHmmss`, where `yyyy` is the year, `MM` is the month, `dd` is the day, `HH` is the hour, `mm` is the minute and `ss` is the second. This timestamp can be removed from the file name if it is not required.

If the Auto control is selected, the Archive file name text box automatically updates to use the default file name, based on the source data repository file name.

If the Overwrite files control is selected, an existing data repository in the archive location will automatically be overwritten if it has the same file name as the copied data repository.

If a timestamp placeholder is included in the archive file name, the Naming strategy controls are used to select which time to use for the timestamp: the execution time of when the command is run or the timestamp of the first data included in the copied data repository.

7. If a historical data folder was selected as the destination type, when prompted to Configure your destination historical data folder, specify the location for the copied data repository in the Server location text box (alternatively, the browse button and dialog box can be used). Specify the file name for the copied data repository in the Server file name text box. Then click Next.

Note that a timestamp (date-time string derived from the local computer clock) placeholder is automatically included in the server file name by a timestamp sequence in the format `yyyyMMddHHmmss`, where `yyyy` is the year, `MM` is the month, `dd` is the day, `HH` is the hour, `mm` is the minute and `ss` is the second. This timestamp can be removed from the file name if it is not required.

If the Auto control is selected, the Server file name text box automatically updates to use the default file name, based on the source data repository file name.

If the Overwrite files control is selected, an existing data repository in the server location will automatically be overwritten if it has the same file name as the copied data repository.

If a timestamp placeholder is included in the server file name, the Naming strategy controls are used to select which time to use for the timestamp: the execution time of when the command is run or the timestamp of the first data included in the copied data repository.

8. When prompted to Select the data you want to copy, select the type of measurement data to copy based on the data type: Variables, Spectra, Orbits, Waveforms and/or Alarms/events. In addition, select the actual measurement data to copy using either For entire configuration or For selected items. If the For selected items control is used, the actual measurements to copy are selected using the hierarchical tree structure displayed (Hardware view or Machinery view). Then click Next.

The list of actual measurements available to be copied is displayed as a Hardware view or a Machinery view, which is dynamically updated depending on the controls selected.

The Show selected only control can be used in order to selectively filter the hierarchical tree structure and display only the measurements selected to be copied.

The search box, indicated by the  icon, can be used to selectively filter the hierarchical tree structure and display only the measurements containing the search term.

9. When prompted to Select the time range you want to copy data from, either All can be selected, or the Last or This controls can be used to specify the data to be copied using a relative time range, or the From and To controls can be used to specify data to be copied using an absolute time range.

The Align to full periods control can be used when using a relative time range in order to align both ends (limits) of the time interval to the beginning of the time unit specified.

When the All, Last or This controls are used, VibroSight System Manager displays the corresponding time range using the From and To time controls of the Absolute time range.

Note:

The time range displayed in the From and To time controls of the Absolute time range is for indication purposes only, the actual time range used by the command (available from the log and/or summary report files) can be slightly different. For example, the actual time range used can be different if there is a delay between configuring the command and running it, especially if the time range is specified using a relative time range.

It is recommended to always check the From and To time controls to ensure that the specified time range is correct, before clicking Next to continue. This is particularly useful when the Align to full periods control is also used.

As a special case, when copying data from a running server (that is, an “active” historical data folder was selected as the source type and a historical data archive was selected as the destination type), the Incremental copy controls can be used in order that future data is also copied. This allows the size of the copied data repository to be larger than the size of the “active” data repository used by the running VibroSight Server.

Note:

Copying a running VibroSight historical data folder (*.vshdf) incrementally allows the copied VibroSight historical data archive (*.vshda) to be larger than the “active” data repository being used by the VibroSight Server. This is possible as incremental copies include the planned/scheduled copying of regular blocks (time periods) of future data. (In contrast, non-incremental copies copy a block (time period) of existing data only.) Reducing the required size of a VibroSight historical data folder (*.vshdf) in this way optimises the storage and retrieval of data (disk cache access) and improves overall system performance.

To copy a running historical data folder incrementally, select the Incremental copy control and use the Period control to be configure the incremental time period to use to copy the data, including future data (in minutes or hours). VibroSight automatically calculates, schedules and runs the number of Copy commands using incremental copies that are required for the specified time range. Note: Incremental copies cannot be used with the All time range control.

10. When prompted to Select options concerning data reduction, select Perform data reduction (for variables only) to make the data reduction algorithm controls available. The data reduction algorithm can be configured to copy the Minimum value and/or the Maximum value and/or the First value for the time period specified using the Copy value(s) every *n* msec/sec/min/hour/day/week control. Then click Next.

Note:

When copying a VibroSight data repository, these data reduction options affect static measurement data (such as variables) only.

More specifically, for all of the static measurement data selected to be copied, the data reduction algorithm keeps only the selected values from the selected time period, which is repeated throughout the overall time range to be copied.

11. When prompted to Configure your output options, select Create log report file to generate a log report file and select Create summary file to generate a summary file for the copy operation.

Note:

The log report file for a data repository command (operation) contains technical information concerning the options used and the progress of the command.

The summary file for a data repository command (operation) contains a summary of the data processed by and included in the files created by the command.

In addition, if a historical data archive was selected as the destination type, the Compress output file control can be used order to automatically compress the generated data repository (*.vshda) file.

Note:

Using compressed VibroSight data repositories reduces the size of the files, at the expense of the overall system performance. That is, it increases the time required to perform operations in VibroSight Vision such as opening a data source and reading data.

In addition, if a historical data archive was selected as the destination type, the Use 2 bytes format for dynamic data control can be used to reduce the size of the copied data repository. Then click Next.

Note:

When copying a VibroSight data repository, these data reduction options affect dynamic measurement data (such as waveforms, spectra and orbits) only.

More specifically, for all of the dynamic measurement data selected to be copied, using 2 bytes for each measurement point (rather than VibroSight's native 4 bytes) reduces the size of the copied data repository, at the expense of the dynamic range of the measurement data.

12. When a historical data folder is being copied to a historical data archive, "output file flagging" can be used in order to make it easier to find copied data that has alarms/events at the selected severity level.

When prompted about Output file flagging, either select Do not flag or select Flag output file depending on severity in order to configure the severity levels (Severities) to flag in the copied

data repository: Out of Range , Normal, Information, Alert and/or Danger. In addition, select the actual measurement data for which the severities should be flagged. The actual measurements to be checked for severities by the copy operation are selected using the hierarchical tree structure displayed (Hardware view or Machinery view). Then click Next

Note:

When copying a VibroSight data repository, these file flagging options will automatically add the “ alarm” suffix to the file name of the copied data repository if any of the copied data has alarms/events at the selected severity level. In practice, this feature helps measurement data with severity levels of particular interest to be more found more quickly.

The list of actual measurements available to be copied is displayed as a Hardware view or a Machinery view, which is dynamically updated depending on the controls selected.

The Show selected only control can be used in order to selectively filter the hierarchical tree structure and display only the measurements selected to be copied.

The search box, indicated by the  icon, can be used to selectively filter the hierarchical tree structure and display only the measurements containing the search term.

13. When prompted to Review your choices, if the information is correct, click Copy to continue and start the data repository copy operation. If the information is not correct, click Back to re-enter the correct information (or Cancel).
14. When Copy is clicked, a progress indicator is displayed to provide feedback on the progress of the operation. The amount of time required to copy a VibroSight data repository depends on the size of the data repository and the quantity of information to be copied.

The VibroSight System Manager Copy operation is complete when the progress indication stops and All tasks completed successfully is displayed.

Parent topic: [Data repositories](#)

Related concepts

[Working with VibroSight data repositories - VibroSight Configurator and VibroSight Server operations versus VibroSight System Manager commands](#)

[Working with VibroSight data repositories - VibroSight System Manager commands and time ranges](#)

Related reference

[Configuration root parameters](#)

Summarising a VibroSight data repository

The data in a VibroSight data repository can be summarised using the VibroSight System Manager Summary command.

The VibroSight System Manager Summary command can be used to selectively:

- Summarise the data in a VibroSight historical data folder (*.vshdf).
- Summarise the data in a VibroSight historical data archive (*.vshda).
- Summarise the data in a VibroSight database (*.vssrvdb).

Note:

VibroSight System Manager Data repositories commands are intended for manual data management tasks that supplement the data management strategy implemented for a VibroSight-based machinery monitoring and protection system using VibroSight's integrated data management operations (using VibroSight Configurator and VibroSight Server).

Summarising the data in a VibroSight data repository (VibroSight historical data system files (*.vshdf and *.vshda) or VibroSight database (*.vssrvdb)) using the Summary command is the recommended way to quickly view the contents of a data repository in terms of its measurement data (including events), states and reference data, and configurations.

Note: Summarising the data in a VibroSight data repository does not affect the contents of the source data repository in any way.

Note:

The information included in the summary report file generated by the Summary command is exactly the same as the information included in the summary report file generated by the Copy command (for the same data repository and time range).

To summarise a VibroSight data repository:

1. In VibroSight System Manager, select your computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

2. In the Actions window, under Data Repositories, click  Summary to start the summarise command (operation).
3. When prompted to Select the type of data repository from which to extract a summary, select the type of the source data repository from the list displayed. Then click Next.

Select Historical data folder in order to summarise the data in a VibroSight historical data folder (*.vshdf).

Select Historical data archive in order to summarise the data in a VibroSight historical data archive (*.vshda).

Select VibroSight database in order to summarise the data in a VibroSight database (*.vssrvdb).

4. When prompted to Select the historical data folder / historical data archive / database from which you would like to extract a summary, select the appropriate file from the list of those available. Then click Next.

Note:

The data sources listed include all relevant VibroSight data repositories under VibroSight's default data folder (data path directory), typically, C: VibroSight Data

A VibroSight historical data folder is identified by a *.vshdf file and an associated Storage

subfolder.

Alternatively, the file can be specified by typing the file path in the Choose file text box or by clicking the browse button () and using the dialog box that appears.

5. When prompted to Select the time range you want to extract summary data from, either All can be selected, or the Last or This controls can be used to specify the data to be summarised using a relative time range, or the From and To controls can be used to specify data to be summarised using an absolute time range. Then click Next.

The Align to full periods control can be used when using a relative time range in order to align both ends (limits) of the time interval to the beginning of the time unit specified.

When the All, Last or This controls are used, VibroSight System Manager displays the corresponding time range using the From and To time controls of the Absolute time range.

Note:

The time range displayed in the From and To time controls of the Absolute time range is for indication purposes only, the actual time range used by the command (available from the log report file) can be slightly different. For example, the actual time range used can be different if there is a delay between configuring the command and running it, especially if the time range is specified using a using a relative time range.

It is recommended to always check the From and To time controls to ensure that the specified time range is correct, before clicking Next to continue. This is particularly useful when the Align to full periods control is also used.

6. When prompted to Configure your output options, select Create log report file to generate a log report file. Then click Next.

The log report file for a data repository command (operation) contains technical information concerning the options used and the progress of the command. This information is a useful aid to understanding the command-line options used by the underlying command-line tool. It can also be useful if the data repository command does not run correctly.

7. When prompted to Review your choices, if the information is correct, click Copy to continue and start the data repository summary operation. If the information is not correct, click Back to re-enter the correct information (or Cancel).
8. When Extract summary is clicked, a progress indicator is displayed to provide feedback on the progress of the operation. The amount of time required to summarise a VibroSight data repository depends on the size of the data repository and the quantity of information to be summarised.

The VibroSight System Manager Summarise operation is complete when the progress indication stops and All tasks completed successfully is displayed.

Parent topic: [Data repositories](#)

Related concepts

[Working with VibroSight data repositories - VibroSight Configurator and VibroSight Server operations versus VibroSight System Manager commands](#)

[Working with VibroSight data repositories - VibroSight System Manager commands and time ranges](#)

Updating a VibroSight data repository

A VibroSight data repository can be updated using the VibroSight System Manager Database Update command.

The VibroSight System Manager Database Update command can be used to selectively:

- Update the underlying structure of a VibroSight database (*.vssrvdb).

Note:

VibroSight System Manager Data repositories commands are intended for manual data management tasks that supplement the data management strategy implemented for a VibroSight-based machinery monitoring and protection system using VibroSight's integrated data management operations (using VibroSight Configurator and VibroSight Server).

Updating a VibroSight data repository (VibroSight database (*.vssrvdb)) using the Database Update command is required to ensure that the data repository is compatible with the version of the VibroSight software being used. For example, an update is often necessary after upgrading the VibroSight software to a later version which supports a new feature and requires that the underlying VibroSight data repository structure and/or data are changed before migration to the VibroSight historical data system.

Note:

VibroSight 3.0.0 or later exclusively uses data repositories based on the VibroSight historical data system (that is, VibroSight historical data folders (*.vshdf) and VibroSight historical data archives (*.vshda)).

Existing data repositories created with earlier versions of VibroSight must be manually migrated from VibroSight databases (*.vssrvdb) to the VibroSight historical data system before they can be used with VibroSight 3.0.0 or later. This is done using the VibroSight System Manager Database Update and Copy commands.

Note:

Updating a VibroSight data repository (database) is an operation that cannot be undone. Therefore, it is recommended to ensure that you have a backup copy of the data repository before updating it.

To update a VibroSight data repository (database):

1. In VibroSight System Manager, select your computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows Control Panel System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

2. In the Actions window, under Data Repositories, click  Database Update to start the update

command (operation).

3. When prompted to Select the database(s) you would like to update, select the appropriate file from the list of those available. Then click Next.

Note:

The data sources listed include all relevant VibroSight data repositories under VibroSight's default data folder (data path directory), typically, C: VibroSight Data

A VibroSight historical data folder is identified by a *.vshdf file and an associated Storage subfolder.

Alternatively, the file can be specified by typing the file path in the Choose file text box or by clicking the browse button () and using the dialog box that appears.

Note:

In order to update multiple VibroSight data repositories (databases) at the same time, CTRL+click or SHIFT+click can be used to select multiple databases before continuing.

4. VibroSight System Manager checks the compatibility of the selected VibroSight data repositories (databases) with the version of VibroSight being used and displays information on the updates available.

Click the arrow on the **Details** bar in order to display or hide more information about the updates available, namely, the name of the underlying VibroSight database components (Component Name) to be updated, together with the current (Database Version) and latest (Target Version) versions of these database components.

For more recent VibroSight data repositories (databases), that perhaps have been updated before, there may be no new updates to apply.

5. Click Update to continue and start the database update operation. Alternatively, click Back to select different or additional databases (or Cancel).
6. When Update is clicked, a progress indicator is displayed to provide feedback on the progress of the operation. The amount of time required to update a VibroSight data repository (database) depends on the size of the data repository and the quantity of information to be updated.

The VibroSight System Manager Database Update operation is complete when the progress indication stops and All tasks completed successfully is displayed.

Parent topic: [Data repositories](#)

Purging a VibroSight data repository

The data in a VibroSight data repository can be selectively purged (truncated) using the VibroSight System Manager Purge command.

The VibroSight System Manager Purge command can be used to selectively:

- Purge data in a VibroSight historical data folder (*.vshdf).

Note:

VibroSight System Manager Data repositories commands are intended for manual data management tasks that supplement the data management strategy implemented for a VibroSight-based machinery monitoring and protection system using VibroSight's integrated data management operations (using VibroSight Configurator and VibroSight Server).

Purging (truncating) the data in a VibroSight data repository (VibroSight historical data folder (*.vshdf)) using the Purge command is the recommended way to reduce the size of a data repository as it can remain in use by VibroSight during the purge operation. Whereas external repository tools usually require that a data repository is not in use.

Purging a VibroSight data repository permanently deletes the data from a selected part of the data repository, that is, the data for the specified time range.

Note: Purging the data in a VibroSight data repository is an operation that cannot be undone. Therefore, it is recommended to ensure that you have a backup copy of the data repository before purging it.

In practice, VibroSight data repositories are purged for a number of reasons. For example:

- Overall VibroSight system performance is suffering due to the size of a data repository.
- A data repository is becoming too large for the local hard disk.

To purge a VibroSight data repository:

1. In VibroSight System Manager, select your computer  from the VibroSight Hosts tree structure of the System Explorer window.

Note:

The first (top) computer displayed in the VibroSight Hosts tree structure is typically the computer running the VibroSight System Manager being used.

If required, the name of a computer can be obtained from the Windows Control Panel (Windows > Control Panel > System and Security/System: Computer name) or by running the `ipconfig /all` command at a Windows command prompt (Host Name).

2. In the Actions window, under Data Repositories, click  Purge to start the purge command (operation).
3. When prompted to Select the historical data file you would like to purge, select the appropriate file from the list of those available. Then click Next.

Note:

The data sources listed include all relevant VibroSight data repositories under VibroSight's default data folder (data path directory), typically, C: VibroSight Data

A VibroSight historical data folder is identified by a *.vshdf file and an associated Storage subfolder.

Alternatively, the file can be specified by typing the file path in the Choose file text box or by clicking the browse button () and using the dialog box that appears.

4. When prompted to Select the time range you want to purge data from, either Purge all can be selected, or the Keep last or Keep this controls can be used to specify the data that is to be kept using a relative time range, or the Purge from and Purge to controls can be used to specify the data that is to be purged using an absolute time range. Then click Next.

Note:

It is important to note a fundamental difference between the absolute and relative time range parameters: the relative time parameters (Keep last, Keep this) specify data that is to be kept, whereas the absolute time parameters (Purge from, Purge to) specify data that is to be purged.

When the Purge all, Keep last or Keep this controls are used, VibroSight System Manager displays the corresponding time range using the Purge from and Purge to time controls of the Absolute time range.

Note:

The time range displayed in the Purge from and Purge to time controls of the Absolute time range is for indication purposes only, the actual time range used by the command (available from the log and/or summary report files) can be slightly different. For example, the actual time range used can be different if there is a delay between configuring the command and running it, especially if the time range is specified using a relative time range.

It is recommended to always check the Purge from and Purge to time controls to ensure that the specified time range is correct, before clicking Next to continue.

5. When prompted to Select the time range you want to purge data from, either Purge all available time can be selected, the Keep last or Keep this control can be used to specify the data to be kept using a relative time range, or the Purge from and Purge to controls can be used to specify the data to be purged using an absolute time range.
6. When prompted to Configure your output options, select Create log report file to generate a log report file and select Create summary file to generate a summary file for the purge operation. Then click Next.

The log report file for a data repository command (operation) contains technical information concerning the options used and the progress of the command.

The summary file for a data repository command (operation) contains a summary of the data processed by and included in the files created by the command.

7. When prompted to Review your choices, if the information is correct, click Copy to continue and start the data repository purge operation. If the information is not correct, click Back to re-enter the correct information (or Cancel).
8. When Purge is clicked, a progress indicator is displayed to provide feedback on the progress of the operation. The amount of time required to purge a VibroSight data repository depends on the size of the data repository and the quantity of information to be purged.

The VibroSight System Manager Purge operation is complete when the progress indication stops and All tasks completed successfully is displayed.

Parent topic: [Data repositories](#)

Related concepts

[Working with VibroSight data repositories - VibroSight Configurator and VibroSight Server operations versus VibroSight System Manager commands](#)

[Working with VibroSight data repositories - VibroSight System Manager commands and time ranges](#)

Backing up a VibroSight data repository

If required, a VibroSight data repository can be backed up by copying and pasting all of the data repository files using Windows Explorer.

Note:

Backing up a VibroSight data repository using Windows Explorer is intended for manual data management tasks that supplement the data management strategy implemented for a VibroSight-based machinery monitoring and protection system using VibroSight's integrated data management operations (using VibroSight Configurator and VibroSight Server).

Backing up a VibroSight data repository (VibroSight historical data folder (*.vshdf) and the associated Storage subfolder) using the Copy and Paste commands in Windows Explorer is the recommended way to create a backup as the data repository can remain in use by VibroSight during the backup operation.

Backing up a VibroSight data repository requires making a copy of the whole data repository (that is, a snapshot of the data repository at the time of the Windows Explorer copy command).

Note: Backing up the data in a VibroSight data repository does not affect the contents of the source data repository in any way.

To back up a VibroSight data repository:

1. In a Windows Explorer, navigate to the VibroSight data repository (VibroSight historical data folder).

Note:

The default location for VibroSight data repositories is under VibroSight's default data folder (data path directory), typically, C: VibroSight Data

A VibroSight historical data folder is identified by a *.vshdf file and an associated Storage subfolder.

2. Use the Copy and Paste commands in Windows Explorer to backup all of the data repository files: (1) the *.vshdf file and (2) the associated Storage subfolder (and all of the files that it contains).

Parent topic: [Data repositories](#)

VM600 CPUR card specific operations

The VibroSight System Manager provides standard operations for the configuration and management of VM600 CPUR cards.

Note:

VibroSight System Manager is the only VibroSight software module used with the CPUR card.

- [Configuring IP settings for a VM600 CPUR/IOCR card pair using a DHCP server](#)
The IP settings of a VM600 CPUR/IOCR card pair are configured using the VibroSight System Manager Configuration tools.
- [Configuring IP settings for a VM600 CPUR/IOCR card pair using a static IP address](#)
The IP settings of a VM600 CPUR/IOCR card pair are configured using the VibroSight System Manager Configuration tools.
- [Enabling and disabling Ethernet ports for a VM600 card pair](#)
The Ethernet ports of a VM600 card pair should be enabled or disabled depending on which of

these system Ethernet ports are used for communications in a particular application.

- [Changing the firmware for a VM600 CPUR card](#)

The firmware of a VM600 CPUR card can be changed using the VibroSight System Manager Maintenance tools.

- [Checking the firmware](#)

The firmware versions running on a VM600 card or a VibroSmart DMS module can be checked using the VibroSight System Manager Maintenance tools.

- [Saving diagnostic logs from a VM600 card or VibroSmart DMS device](#)

You can save diagnostic logs from a VM600 card or VibroSmart DMS device using the VibroSight System Manager Diagnostics tools.

Changing the firmware for a VM600 CPUR card

The firmware of a VM600 CPUR card can be changed using the VibroSight System Manager Maintenance tools.

Note:

Updating the firmware of a device (card or module) is a special task that can, if used unintentionally or incorrectly, lead to malfunctioning of the device and affect proper function of data acquisition.



It is highly recommended that firmware updates are only performed in accordance with the operating procedures for the machinery being monitored and that appropriate precautions are taken at the control system level (such as DCS or PLC).

For example, alarms and relay outputs should be ignored (bypassed or inhibited) in order to avoid false trips of the machinery being monitored.

Note:

When changing the firmware of a CPUR card, never do any of the following:

- Turn the power supply to the card off
- Disconnect the card from the network
- Remove a CPUR card from the rack.

Always wait until a firmware change has been confirmed as successful (approximately 5 to 10 minutes) before continuing.

Each VM600 CPUR card contains two types of firmware – Base System and (applications) Firmware – that can be changed either independently or at the same time, as follows:

1. Start VibroSight System Manager.
2. Select your card  from the Devices tree-view of the System Explorer.

Note:

As an IP address can be easily changed, a VM600 card such as a CPUR should be identified by its serial number (xxxxxxx).

The Actions window of the System Manager will show the available tools. If you cannot see the Actions window, click View Actions.

3. Click  Change Firmware under Maintenance in the Actions window.

The Change Firmware window appears, listing the current version information for the card in the Firmware Status area. You may have to scroll down to see the Base System and Firmware versions.

4. Click Add and use the dialog box that appears to navigate the folders on your computer and select the firmware file obtained from Meggitt Sensing Systems. Click Open.

The *.tg file is added to the list of firmware updates in the Firmware Files area of the Change Firmware window.

Note:

The default location for the firmware (embedded software) files used by VM600 cards is
C: Program Files Meggitt VibroSight Firmware Firmware VM600 CPUR

Note:

VM600 card firmware files provided by Meggitt Sensing Systems can be identified by their *.tg file name extension.

5. If there are multiple firmware upgrades, for example, both Base System and Firmware, repeat step 4 to add the second *.tg file. Click Open.
6. Click Finish to start the firmware upgrade process.

The card will disappear from the Devices tree-view of the System Explorer for the duration of the firmware upgrade process. When the firmware upgrade is complete, the card will appear again.

Note:

VM600 CPUR card firmware upgrades take approximately 5 to 10 minutes.

7. Select your card  from the Devices tree-view of the System Explorer and click  Change Firmware under Maintenance in the Actions window.

The Change Firmware window appears, listing the current version information for the card in the Firmware Status area. The listed Current Versions can be checked to verify that the firmware upgrade was successful.

Parent topic: [VM600 CPUR card specific operations](#)

Related reference

[VibroSight software and VM600 CPUR card firmware compatibility](#)

Working with VibroSight System Manager

The following topics describe how to work with VibroSight System Manager.

- [Working with Windows](#)
VibroSight System Manager's user interface is extremely flexible. You can modify its appearance in a number of ways to suit individual needs and preferences.
- [Setting VibroSight System Manager options](#)
VibroSight System Manager has a number of settings that can be configured using the VibroSight System Manager Options window.

Working with Windows

VibroSight System Manager's user interface is extremely flexible. You can modify its appearance in a number of ways to suit individual needs and preferences.

The following topics describe how to modify the user interface.

- [Floating and Docking Windows](#)
You can change docked windows into floating windows, and vice versa.
- [Moving and Rearranging Tool Windows](#)
Tool windows can easily be moved to other areas of the VibroSight Configurator window, causing VibroSight Vision to automatically rearrange the window layout.
- [Resizing Windows](#)
All VibroSight Vision windows can be resized.

Parent topic: [Working with VibroSight System Manager](#)

Floating and Docking Windows

You can change docked windows into floating windows, and vice versa.

To change a docked window into a floating window:

Either:

1. Double-click the title bar of the window.

or:

1. Click once anywhere on the window to select it.
2. Choose Window → Floating.

To convert the window back to the docked state, either double-click its title bar or choose Window Docked.

Parent topic: [Working with Windows](#)

Moving and Rearranging Tool Windows

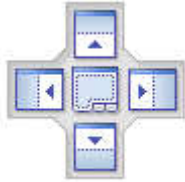
Tool windows can easily be moved to other areas of the VibroSight Configurator window, causing VibroSight Vision to automatically rearrange the window layout.

To move and rearrange tool windows:

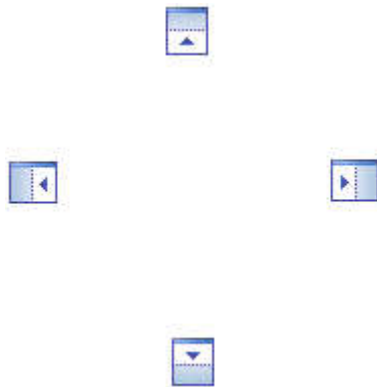
1. Click and drag the title bar of the tool window you want to move towards the middle of the VibroSight Configurator window.

A shaded rectangle is displayed to indicate where the window would be placed if you release the mouse button. Two sets of guide arrows also appear:

- a. In the centre of the screen, a diamond shape composed of four arrows:



- b. Four arrows around the outer edges of the VibroSight Configurator window:



2. Move the mouse pointer over any of the arrows. The shaded rectangle moves to the corresponding area of the VibroSight Configurator window.

For example, if you move the mouse pointer over either of the "right" arrows , the shaded rectangle moves to an area on the right of the VibroSight Configurator window.

3. Release the mouse button.

The window is moved to the area indicated by the shaded rectangle, and VibroSight Configurator automatically reorganizes the window layout.

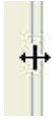
Parent topic: [Working with Windows](#)

Resizing Windows

All VibroSight Vision windows can be resized.

To resize adjoining windows:

1. Move the mouse pointer over the boundary between two windows. The pointer changes shape:



2. Press and hold down the left mouse button then drag the mouse in any direction.
3. Release the mouse button.

To resize floating windows, move the mouse cursor over any edge or corner of the window until it changes to , , , or . Press and hold down the left mouse button, drag the mouse until the window is the size you want, then release the mouse button.

Both docked and floating windows can also be minimized, maximized, or closed by clicking the standard Windows controls on their title bars.

Parent topic: [Working with Windows](#)

Setting VibroSight System Manager options

VibroSight System Manager has a number of settings that can be configured using the VibroSight System Manager Options window.

1. In VibroSight System Manager, click Tools → Options.

The VibroSight System Manager Options window is displayed.

2. Select a category of options from the tree structure view (left) in order to display the current settings for the options (right).
3. Modify the settings for the options (right), as required.
4. Click OK to store and use the updated settings for the VibroSight System Manager, or Cancel.

To specify that "Warning" level detail is recorded in VibroSight System Manager's log file:

1. Select the Environment category in the left hand area of the window.
2. Select the Technical Log Files option in the left hand part of the window.
3. Click Warning in the Log Level area of the window.
4. Click OK. The log level is modified.

Parent topic: [Working with VibroSight System Manager](#)

VibroSight System Manager menus

- [VibroSight System Manager File menu](#)
The VibroSight System Manager File menu contains an option allowing you to exit VibroSight System Manager.
- [VibroSight System Manager View menu](#)
The VibroSight System Manager View menu allows you to choose which windows to display in VibroSight System Manager.
- [VibroSight System Manager Tools menu](#)

The VibroSight System Manager Tools menu allows you to modify optional VibroSight System Manager settings.

- [VibroSight System Manager Help menu](#)

The VibroSight System Manager Help menu allows you to access help, save diagnostic information from a VibroSight system and display information about the version of VibroSight software.

VibroSight System Manager File menu

The VibroSight System Manager File menu contains an option allowing you to exit VibroSight System Manager.

The following commands are available:

- Exit

Exits (closes) VibroSight System Manager.

Parent topic: [VibroSight System Manager menus](#)

VibroSight System Manager View menu

The VibroSight System Manager View menu allows you to choose which windows to display in VibroSight System Manager.

The following commands are available:

- System Explorer

Display the System Explorer window in the main window.

- Actions

Display the Action window in the main window.

- Refresh

Update the information displayed in the System Explorer window.

Parent topic: [VibroSight System Manager menus](#)

VibroSight System Manager Tools menu

The VibroSight System Manager Tools menu allows you to modify optional VibroSight System Manager settings.

The following commands are available:

- Options

Displays the Options window containing VibroSight System Manager program options.

Parent topic: [VibroSight System Manager menus](#)

VibroSight System Manager Help menu

The VibroSight System Manager Help menu allows you to access help, save diagnostic information from a VibroSight system and display information about the version of VibroSight software.

The following commands are available:

- Contents

Displays the  VibroSight help that comes with the VibroSight software.

- Save diagnostic information

Allows diagnostic information for the VibroSight system, including log files (*.xlog) for all of the VibroSight software modules, system information and event information to be saved to a file. This information about a VibroSight system can be useful to Meggitt Sensing Systems customer support when investigating certain issues.

- About VibroSight ...

Displays information about the version of VibroSight software being used.

Parent topic: [VibroSight System Manager menus](#)

VibroSight System Manager toolbars

VibroSight System Manager does not include any global or local toolbars.

VibroSight System Manager windows

- [The main VibroSight System Manager window](#)

The main VibroSight System Manager window provides access to the tools required to manage system hardware, such as VM600 cards and VibroSmart DMS modules.

- [The System Explorer window](#)

The System Explorer window appears by default in the main VibroSight System Manager window (left).

- [The Actions window](#)

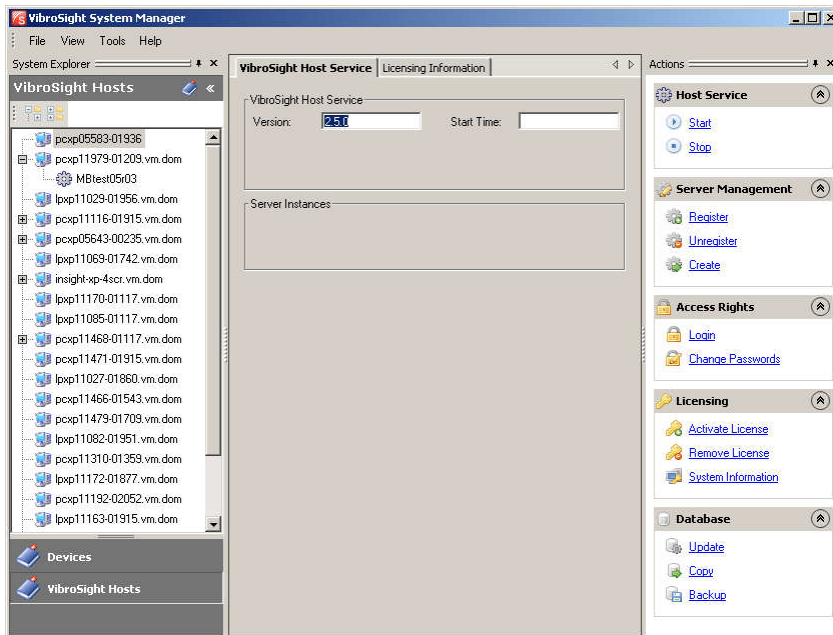
The Actions window appears in the main VibroSight System Manager window, by default on the right-hand side.

- [VibroSight System Manager Options window](#)

The VibroSight System Manager Options window allows the general options that are user configurable to be displayed and modified.

The main VibroSight System Manager window

The main VibroSight System Manager window provides access to the tools required to manage system hardware, such as VM600 cards and VibroSmart DMS modules.



The main VibroSight System Manager window

The main VibroSight System Manager window is divided into three separate areas:

- The System Explorer view displays a structured view of the systems that the VibroSight software can see, in terms of VibroSight Hosts (computers running the VibroSight software and their VibroSight Servers) or Devices (VM600 cards and VibroSmart DMS modules).
- The central area of the main window displays additional information on the VibroSight Host selected in the System Explorer view.
- The Actions view displays the VibroSight System Manager commands that can be run. The permitted actions are different for the VibroSight Hosts view and the Devices view. They will also vary depending on the current user level (access rights).

You can hide, resize, or rearrange the default arrangement of these windows if you wish.

Parent topic: [VibroSight System Manager windows](#)

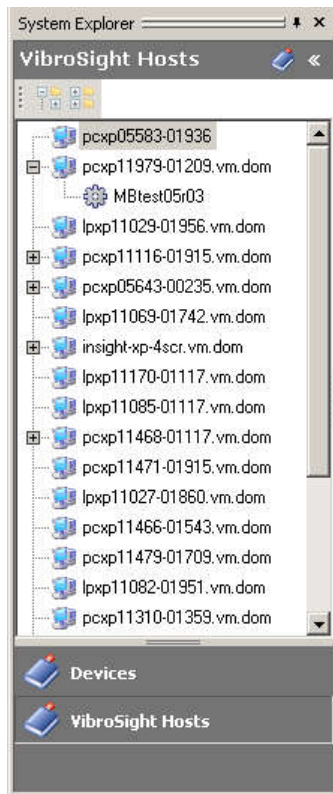
The System Explorer window

The System Explorer window appears by default in the main VibroSight System Manager window (left).

The System Explorer view displays a structured view of the systems that the VibroSight software can see, in terms of VibroSight Hosts (computers running the VibroSight software and their VibroSight Servers) or Devices (VM600 cards and VibroSmart DMS modules).

VibroSight Hosts

The VibroSight Hosts view is the default view. If the Devices view is shown (see below), you can change to the VibroSight Hosts view by clicking on the VibroSight Hosts button below the tree structure.



The System Explorer VibroSight Hosts view

The central area of the main VibroSight System Manager window will display additional information relevant to the VibroSight Host selected in the tree structure. For example, when an individual  host computer is selected (by clicking on the host computer in the tree structure), the VibroSight Host Service and Licensing Information tabs will display information for that host computer. And when an individual  VibroSight Server running on a host computer is selected, Information and Data for this VibroSight Server is displayed.

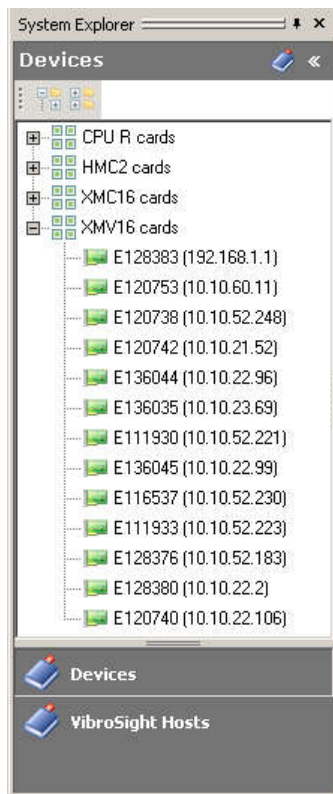
Note:

The VibroSight Servers listed under a host computer in the VibroSight Hosts view are either:

- VibroSight Servers registered on the host computer as a Windows service, which are listed even if they are not currently running.
- VibroSight Servers currently running on the host computer that were started using VibroSight Server (that is, servers with a user interface (Xms.Server.Client.exe)).

Devices

When the Hosts view is shown (see above), you can change to the Devices view by clicking on the Devices button below the tree structure.



The System Explorer Devices view

The toolbar

The following buttons are available on the System Explorer toolbar.

Button	Description
	Expand selected item. Expands all nodes below the currently selected node.
	Collapse selected item. Collapses all nodes below the currently selected node.
	Refresh. Update the information displayed in the System Explorer tree structure in order to display all of the latest items (alternatively, click View Refresh).

The VibroSight Hosts tree structure

The tree structure is a hierarchical representation of the host-related components in the currently viewed configuration.

The following components can be displayed:



Host

The host is the top-level item of a system, that is, the computer running the VibroSight Server.



VibroSight Server

A VibroSight Server that is currently running on the host.

The Devices tree structure

The tree structure is a hierarchical representation of the device-related components in the currently viewed configuration.

The following components can be displayed:



Cards

A node that acts as a collection point for all of the individual devices of a particular type that the VibroSight System Manager can see. For example, VM600 XMV16 cards or VibroSmart VSV30x modules.



Individual VM600 cards

A node that allows each card to be viewed in isolation. This is useful when a particular card must be identified for an operation, such as configuring IP or NTP settings or updating firmware.

Individual VibroSight DMS modules

A node that allows each module to be viewed in isolation. This is useful when a particular module must be identified for an operation, such as configuring IP or NTP settings or updating firmware.

Parent topic: [VibroSight System Manager windows](#)

The Actions window

The Actions window appears in the main VibroSight System Manager window, by default on the right-hand side.

The Actions view displays the VibroSight System Manager commands that can be run. The permitted actions are different for the VibroSight Hosts view and the Devices view. They will also vary depending on the current user level (access rights).

The VibroSight Hosts view is the default view. If the Devices view is shown (see below), you can change to the VibroSight Hosts view by clicking on the VibroSight Hosts button below the tree structure.

VibroSight host commands

The following commands can be available when VibroSight Hosts is selected in the System Explorer window. The actual commands available will depend on the user level (access rights) and the node (level) selected in the VibroSight Hosts view, such as host computer or server instance.



VibroSight Computer



Start the Host Service

Use this command to stop the VibroSight Host Service program that is installed and registered as a Windows service (as part of the VibroSight software installation process). Typically, this command is only used if VibroSight Servers are not required to be run as Windows services.

Note:

As VibroSight Host Service program runs by default, the Stop command is usually available.



Stop the Host Service

Use this command to restart the VibroSight Host Service program if it has been stopped.

Note:

As VibroSight Host Service program runs by default, the Start command is usually not available.

Note:

The Host Service Stop/Start command is a toggle command, that is, only the Stop command is available when the VibroSight Host Service is running and only the Start command is available when the VibroSight Host Service is stopped.



Change default data directory

Use this command to change the default data folder (data path directory) used by the VibroSight software.

Note:

As VibroSight Host Service program runs by default, the Start command is usually not available.



VibroSight Server



Register

Use this command to register an existing VibroSight Server on the host computer as a Windows service.



Unregister

Use this command to unregister a VibroSight Server that has previously been registered as a Windows service.



Create

Use this command to create a new “empty” VibroSight Server on the host computer.

Note:

This is the equivalent of saving an “empty” VibroSight Server configuration as a server/database using VibroSight Configurator and then registering the VibroSight Server as a Windows service.



Access Rights



Login

Use this command to change the current access rights (user level).



Change Passwords

Use this command to change the current passwords. Both Master and Admin passwords can be modified using this command.



OPC Server



Create

Use this command to create an OPC Server configuration on the host computer using a wizard.



Licensing



Activate License

Use this command to active a new licence key that you have received from Meggitt Sensing Systems customer support. This command is an essential part of the Software Activation Process.



Remove License

Use this command to remove an existing licence key that you have received from Meggitt Sensing Systems customer support. This command is an essential part of the Software Activation Process.



System Information

Use this command to generate (or view) the system information about your computer that Meggitt Sensing Systems customer support requires in order to generate a licence key. This command is an essential part of the Software Activation Process.



Modbus Server



Create

Use this command to create a Modbus Server configuration on the host computer using a wizard.



Data Repositories



Copy

Use this command to selectively copy data from an existing VibroSight data repository to a new VibroSight data repository. An equivalent command-line tool is also available.



Summary

Use this command to selectively summarise the data available in an existing VibroSight data repository. An equivalent command-line tool is also available.



Database Update

Use this command to update the underlying structure of a VibroSight data repository (database).



Purge

Use this command to selectively purge data from an existing VibroSight data

repository. An equivalent command-line tool is also available.

VibroSight device commands

The following commands can be available when Devices is selected in the System Explorer window. The actual commands available will depend on the user level (access rights) and the device (type of VM600 card or VibroSmart DMS module).



Configuration



IP Settings

Use this command to manage the IP settings (IP address, Subnet mask and Default gateway) of a device (VM600 cards and VibroSmart DMS modules).



NTP Settings

Use this command to manage the NTP settings (NTP server address) used for the synchronisation of devices (VM600 cards and VibroSmart DMS modules).

Maintenance



Reboot

Use this command to force a VM600 XMx16 card to reboot (restart).



Locate (front panel LEDs)

Use this command to identify a XMx16 card in a VM600 rack.



Test LED

Use this command to identify a VibroSmart device in a DMS.



Change Firmware

Use this command to manage the firmware of a device (VM600 cards and VibroSmart DMS modules). The version of the firmware that runs on a device can also be changed or verified using this tool.



Diagnostics



Save Diagnostic Logs

Use this command to make a local copy (on the host computer) of the diagnostic information stored on a device (VM600 cards and VibroSmart DMS modules). Such information can be useful to Meggitt Sensing Systems customer support when investigating certain issues.

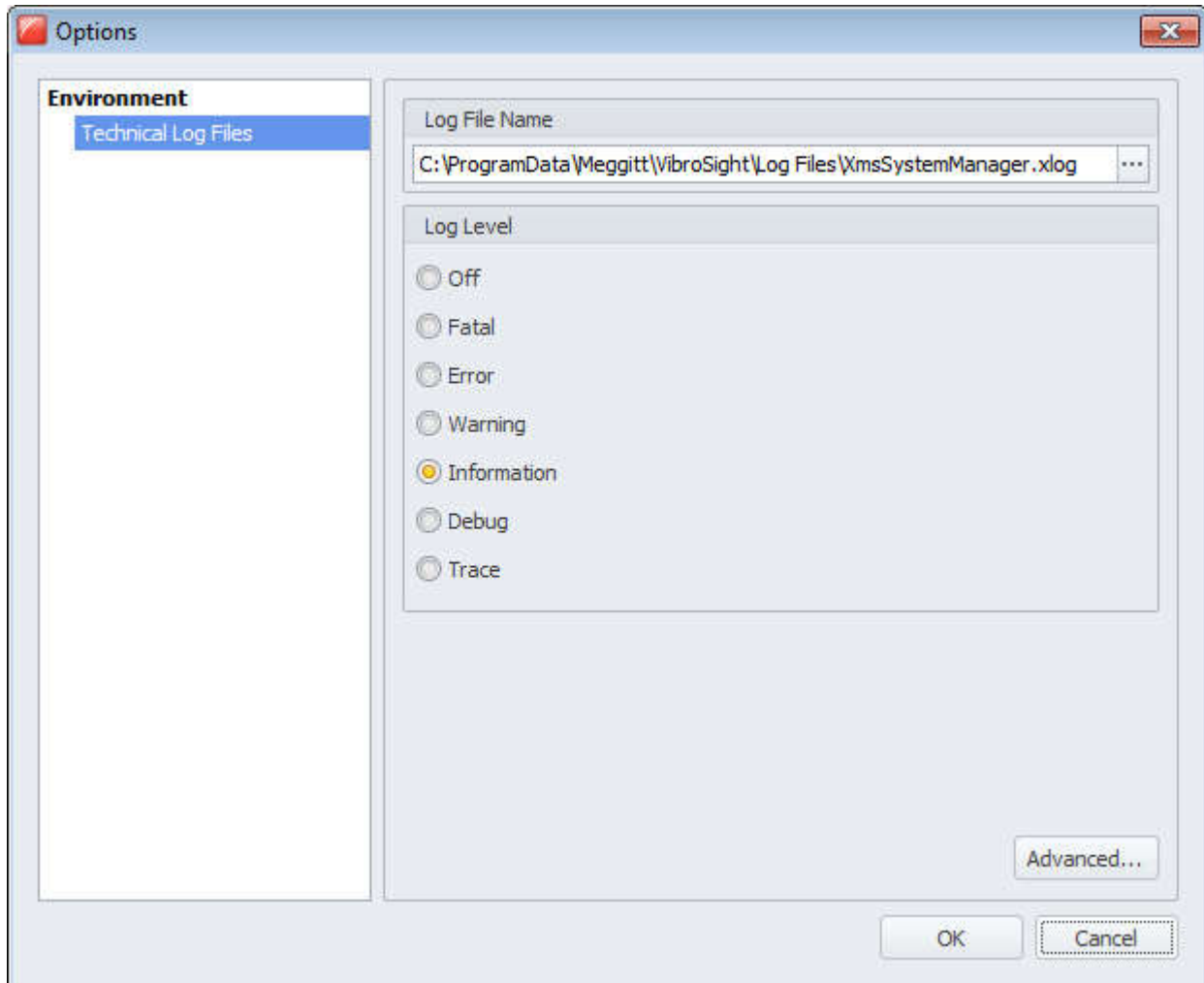
Parent topic: [VibroSight System Manager windows](#)

VibroSight System Manager Options window

The VibroSight System Manager Options window allows the general options that are user configurable to be displayed and modified.

For VibroSight System Manager, these general options include technical log file settings.

As the figure below shows, the VibroSight System Manager Options window consists of two panes: the left pane organises the options by function and allows a particular option to be selected, while the right pane displays the settings for the option selected in the left pane.



VibroSight System Manager Options window

Environment

Technical log files

Use the Log file name control to navigate the folders on the computer and select in which folder and under what file name to save the VibroSight System Manager log file (*.xlog). However, the it is recommended that the default folder and file are used.

Use the Log level option buttons to select the level of detail that is written to the VibroSight System Manager log file:

- Off (no information is written, the least processing overhead)
- Fatal
- Error

- Warning
- Information
- Debug
- Trace (lots of information is written, the most processing overhead).

Parent topic: [VibroSight System Manager windows](#)

An introduction to VibroSight Vision

—

The VibroSight software uses a client-server architecture to distribute the functional requirements of the system across several software modules and  VibroSight Vision is the graphical presentation tool (software client) used to display measurement data directly from VM600 XMx16 cards or from a VibroSight database.

VibroSight Vision can display measurement data acquired from XMx16 condition monitoring cards, such as the XMV16 / XIO16T and XMC16 / XIO16T card pairs, installed in VM600 racks from Meggitt Sensing Systems' Vibro-Meter product line. It provides the operator with a simple to use interface that allows multiple different measurements and plots from the machinery being monitored to be viewed in order to assist with the effective condition monitoring of machinery.

Either "live" data, that is, data being streamed directly from the XMx16 condition monitoring cards, or "historical" data, that is, data stored in VibroSight databases can be displayed using VibroSight Vision.

VibroSight Vision provides a catalogue of plots that includes static and dynamic plots.

VibroSight Vision projects

VibroSight Vision is a project oriented application.

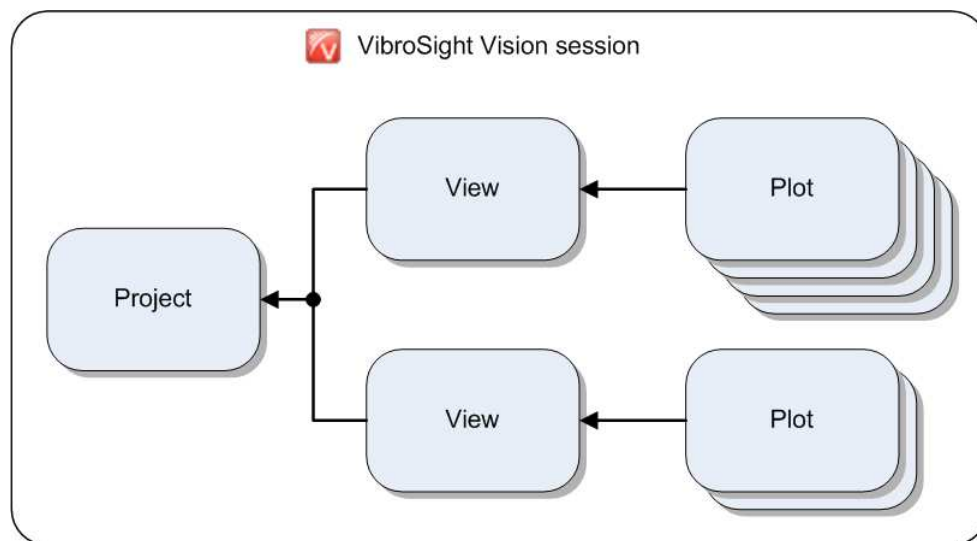
When using VibroSight Vision, the user will either be in the VibroSight Vision Home Page or in a VibroSight Vision project:

- The VibroSight Vision Home Page allows existing VibroSight Vision projects to be opened or new projects to be created.
- A VibroSight Vision project is where the work of data presentation and analysis for condition monitoring is performed.

As shown in the figure below, a VibroSight Vision project is a container that uses a system of views and plots to help the user organise and manage the displayed data.

Note:

VibroSight Vision can have only one project open at a time but multiple VibroSight Vision sessions can run at the same time, if required.



A VibroSight Vision project

A VibroSight Vision project consists of at least one view (a new project is created with one default view). The user can then add multiple plots to the view.

However, as more and more plots are added to a view, it can become more difficult to navigate between the different plots. In which case, it is recommended to add additional views to TBD.

Different views can be used to group together different plots to meet the needs of the user. For example, separate views could be used to contain all of the plots for each bearing on a machine or a view could be used to contain of the orbits for a particular.

VibroSight Vision projects can be saved to the hard disk as VibroSight Vision project files (*.vsvision) and subsequently re-opened.

Note:

In addition to the view and plot information, data source and window layout information is also stored in VibroSight Vision project files (*.vsvision) to help ensure transparent session management for the user. However, no measurement data (historical or live) is stored in a VibroSight Vision project file.

Related tasks

[Copying a VibroSight project to another computer](#)

[Changing the data source for a VibroSight project](#)

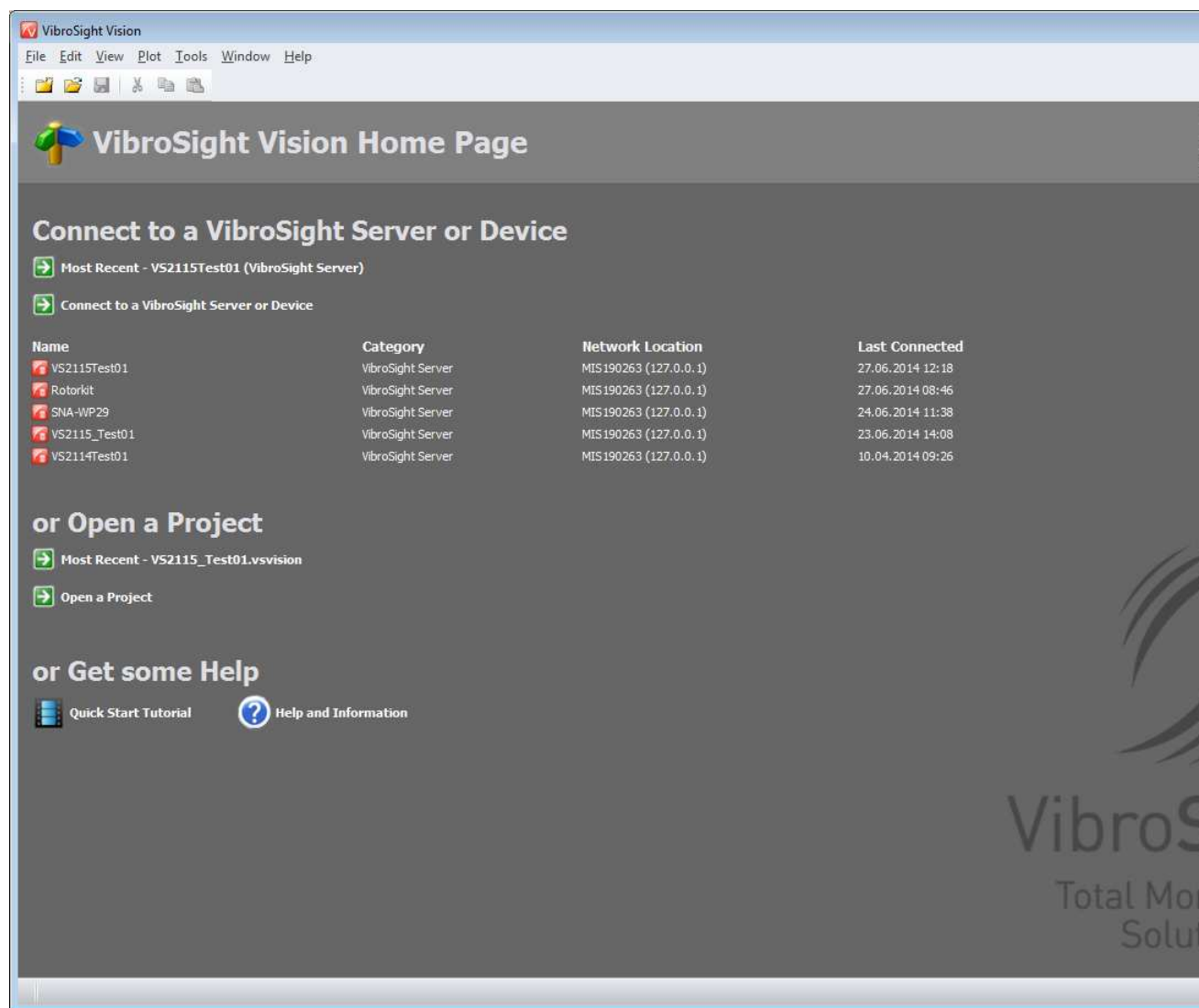
[Lesson 2 - Starting VibroSight Vision and the VibroSight Vision Home Page](#)

VibroSight Vision Home Page

VibroSight Vision can be in two different high level states: displaying the VibroSight Vision Home Page or displaying an opened VibroSight Vision project. Whenever VibroSight Vision does not have a project opened, the VibroSight Vision Home Page is displayed by default.

The VibroSight Vision Home Page allows existing VibroSight Vision projects to be opened or new projects to be created (and establish a connection to a VibroSight Server).

The figure below shows the VibroSight Vision Home Page. Looking from top to bottom, it consists of a title bar, a menu bar, a toolbar, a Connect to a VibroSight Server or Device section, an Open a Project section, a Get some Help section, and a status bar.



VibroSight Vision Home Page

Title bar

The title bar at the top of the VibroSight Vision Home page displays the name of the VibroSight software module: VibroSight Vision.

Menu bar

The menu bar provides access to VibroSight Vision commands, arranged by function.

Note:

Some menu bar commands are unavailable (greyed out) unless they are relevant to the work currently being done with the software. For example, some commands are restricted to certain tool windows or plot documents.

Tool bar

The tool bar provides access to the most frequently used VibroSight Vision commands, using toolbar buttons as shortcuts.

Note:

Some tool bar buttons are updated dynamically depending on the work currently being done with the software. For example, some toolbar buttons are restricted to certain tool windows or plot documents.

Connect to a VibroSight Server or Device

The Connect to a VibroSight Server or Device section allows the user to create a new VibroSight Vision project, connecting to a VibroSight Server or VibroSmart DMS device as the data source:

-  Most Recent ... to create a new VibroSight Vision project using the most recently used VibroSight Server as the data source.
-  Connect to ... to create a new VibroSight Vision project and select a data source using the Data Sources Selection dialog box.
- Recent Name to create a new VibroSight Vision project using a previously used VibroSight Server from a list of the five most recently used.

Note:

The pointer changes to a  to indicate a clickable link in this section. For example, a listed Recent Name.

Open a Project

The Open a Project section allows the user to open an existing VibroSight Vision project, reconnecting to the VibroSight Server or VibroSmart DMS device that was selected as the data source when the project was created:

-  Most Recent ... to open the most recently used VibroSight Vision project.
-  Open a Project to open a VibroSight Vision project (*.vsvision) using the Open dialog box.
- Recent Project Name to open a previously used VibroSight Vision project from a list of the five most recently used.

Note:

The pointer changes to a  to indicate a clickable link in this section. For example, a listed Recent Project Name.

Get some Help

The Get some Help section allows the user to access user assistance information:

-  Quick Start Tutorial opens a video tutorial introducing and explaining the basics of VibroSight Vision.
-  Help and Information opens the VibroSight help, which can also be accessed in any VibroSight software module by clicking Help > Contents.

Status bar

The status bar at the bottom of the VibroSight Vision Home page provides information about the status of the VibroSight Vision project, including the status of the connection to the VibroSight Server which is displayed on the right.

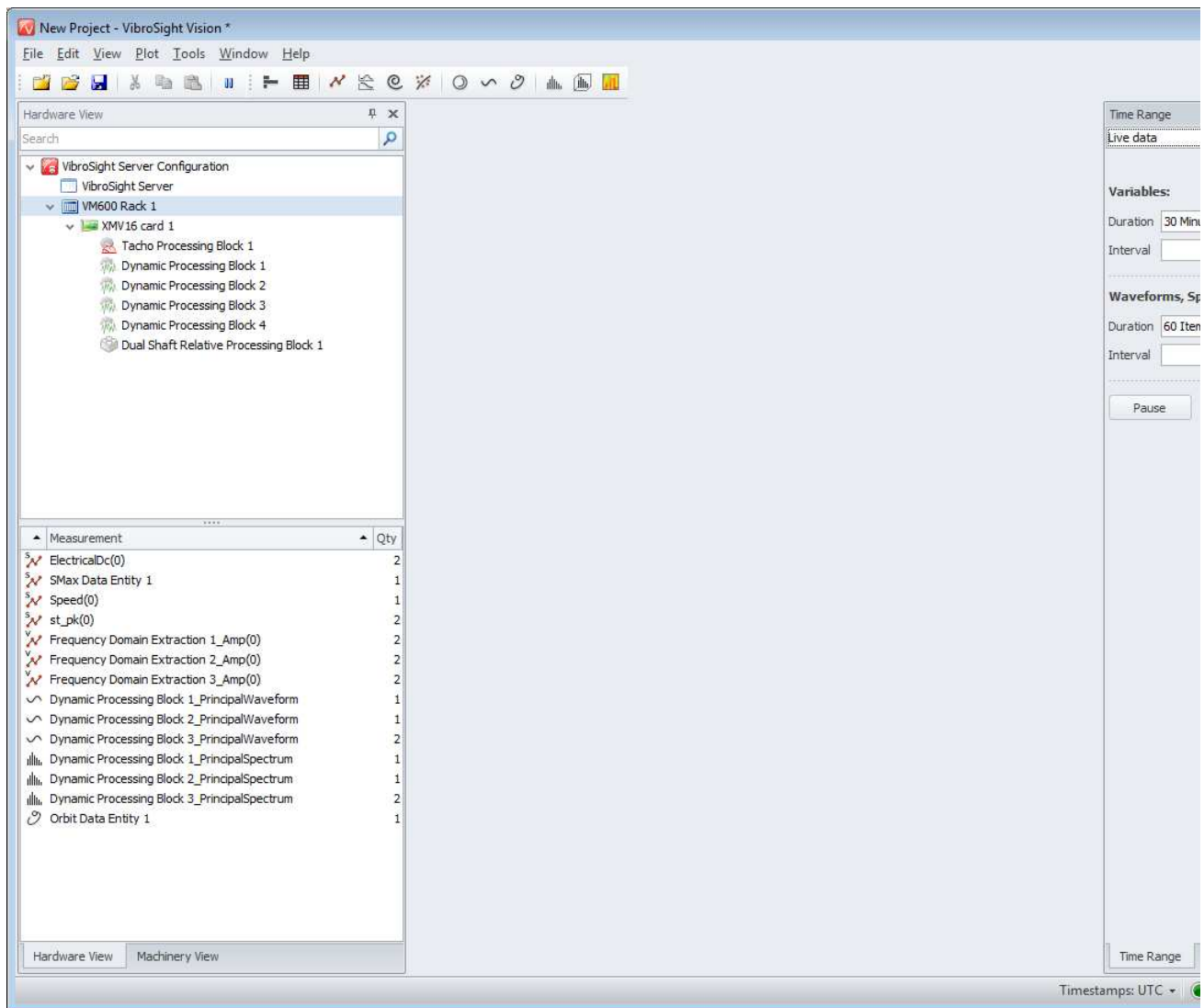
Parent topic: [VibroSight Vision windows](#)

VibroSight Vision project user interface

VibroSight Vision can be in two different high level states: displaying the VibroSight Vision Home Page or displaying an opened VibroSight Vision project. Whenever VibroSight Vision has a project opened, the VibroSight Vision project user interface is displayed.

The VibroSight Vision project user interface implements a multiple window tabbed document interface that provides all of the tools necessary for displaying and analyzing data. When a new VibroSight Vision project is created, the windows are displayed in their default arrangement. However, VibroSight implements a flexible docking framework that supports the custom arrangement of windows (on a VibroSight Vision project basis), which allows the layout of the windows to be easily customized to meet the needs of a VibroSight Vision project. For example, to display multiple plots of interest on the screen at the time and/or maximize the size of a particular plot or plots.

The figure below shows the VibroSight Vision project user interface, with the default arrangement of the windows, as displayed when a new VibroSight Vision project is created. Looking from top to bottom and left to right, it consists of a title bar, a menu bar, a toolbar, a tabbed tool window containing the Hardware View and the Machinery View on the left, the main working area for document windows (that is, plots) in the centre, a tabbed tool window containing the Time Range and the Project Explorer on the right, and a status bar.



VibroSight Vision project user interface

Title bar

The title bar at the top of the VibroSight Vision project user interface displays the name of the VibroSight Vision project and the name of the VibroSight software module.

Note:

The title bar will include an asterisk (*) after the name of the VibroSight Vision project if there have been changes to the project since it was last saved.

Menu bar

The menu bar provides access to VibroSight Vision commands, arranged by function.

Note:

Some menu bar commands are unavailable (greyed out) unless they are relevant to the work currently being done with the software. For example, some commands are restricted to certain tool windows or document windows such as a specific type of plot.

Toolbar

The toolbar provides access to the most frequently used VibroSight Vision commands, using toolbar buttons as shortcuts.

Note:

Some toolbar buttons are updated dynamically depending on the work currently being done with the software. For example, some toolbar buttons are restricted to certain tool windows or document windows such as a specific type of plot.

Hardware View and Machinery View tool windows

The Hardware View and the Machinery View tool windows (left) are used to find and specify the measurements (data entities) to display in the document windows (plots) of the VibroSight Vision project. These views provide two complementary views of the complete system configuration as hierarchical tree structures. (This information is obtained from the configuration for the application that was entered in VibroSight Configurator and is stored in the VibroSight Server database.) And either view can be used to find and specify the same measurements (data entities).

The Hardware View tool window displays the configuration in terms of the VibroSight-based monitoring equipment deployed: such as the VibroSight Server, VM600 racks and XMx16 cards, and VibroSmart DMS measurement blocks and devices. This view is typically more useful when commissioning a VibroSight-based system.

The Machinery View tool window displays the configuration in terms of the machinery being monitored: such as facility units (typically buildings) that house the machinery, machine units (such as a turbine), shafts, stages, bearing planes and ultimately the measurement points. This view is typically more useful when using the VibroSight-based system to perform condition monitoring.

Note:

The Hardware View and the Machinery View also provide a search bar that allows their hierarchical tree structures to be searched in order to find particular measurements (data entities). This feature is particularly useful for larger, more complicated configurations that can be difficult or slow to navigate.

Main working area for document windows

The main working area in the centre of the VibroSight Vision project user interface is used to display the document windows (plots) that are added to a VibroSight Vision project in order to display and analyze measurements (data entities).

By default, each document window (plot) that is added to the main working area is displayed as a separate tabbed document. However, the docking framework allows the custom arrangement of these document windows (plots).

Note:

Document windows (plots) added to a VibroSight Vision project are contained in views. A new (empty) VibroSight Vision project contains a Default View to which each new document window (plot) is added, until additional views are added using the Project Explorer tool window

The layout of document windows (plots) in the main working area is stored with the view that contains the document windows (plots), and saved in the VibroSight Vision project file (*.vsvision).

Time Range and Project Explorer tool windows

The Time Range and the Project Explorer tool windows (right) provide completely separate functions in a VibroSight Vision project.

The Time Range tool window is used to find and specify the time range to apply to the document windows (plots) in the VibroSight Vision project. The time range to apply can be specified in different ways depending on the data analysis needs of the condition monitoring application:

- When working with historical data:
 - Machine states can be used to specify a time range in terms of the machine states that the machinery being monitored has experienced.
 - Alarms can be used to specify a time range in terms of the alarms that the machinery being monitored has experienced.
 - Custom historical can be used to specify a time range in terms of relative time (from one date and time to another date and time), absolute time (the last x minutes, hours, days, months, or years) or to specify all data.
- When working with live data:
 - Live data is used to display the data being streamed directly from the XMx16 condition monitoring cards.

Note:

The selected time range is shared by all plots (and views) in a VibroSight Vision project. That is, when the time range is changed, all plots will be updated to use the new time range.

The Project Explorer is used to manage the VibroSight Vision project in terms of the document windows (plots) and views that the project contains. The Project Explorer is the only way to add views to a project and to switch between views in a project. It is one of the many ways to add plots to a view in a project and to switch between plots in a project.

Note:

Only a single view in a project can be active at any one time.

Only a single plot in a view can be active at one time.

Status bar

The status bar at the bottom of the VibroSight Vision project user interface provides information about the operation and the status of the VibroSight Vision project.

On the left of the status bar, information on the use of certain elements of the VibroSight Vision project user interface are displayed. For example, when the pointer is over the measurements in the bottom pane of the Machinery View window, a reminder is displayed on how to add a measurement to a plot.

On the right of the status bar (to the left of the Timestamps control), a Loading data progress indicator will be displayed when large quantities of measurement data are being retrieved by a VibroSight Vision project from a VibroSight Server database.

On the right of the status bar (to the left of the VibroSight Server connection status information), a Timestamps control is available that displays the date and time format being used to display measurement timestamps. This control is also used to switch between the different timestamp formats available.

On the far right of the status bar, the status of the connection to the VibroSight Server is displayed.

Parent topic: [VibroSight Vision windows](#)

Related concepts

[VibroSight Vision structure](#)

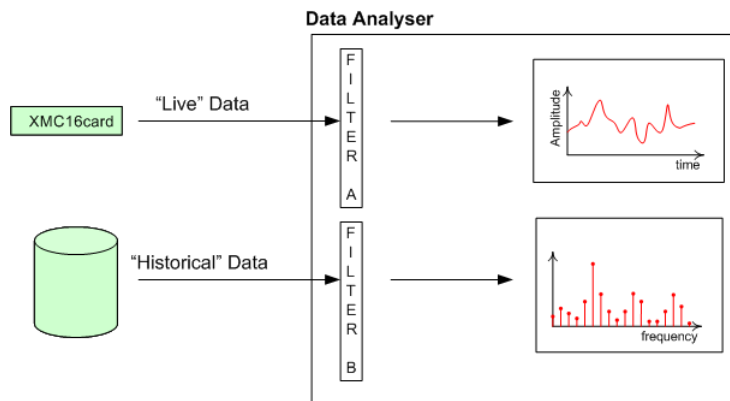
Live and historical data

VibroSight Vision can process both live and historical data:

- *Live data* is data that is being streamed to VibroSight Vision directly from its measurement source, for example, an XMV16 or XMC16 card in a VM600 rack, without any intermediate processing or storage.

- *Historical data* is data that has been physically stored in some way (typically in a file on a hard disk or within a relational database managed by a VibroSight server), possibly pre-processed in some way, and then imported into the VibroSight Vision.

VibroSight Vision allows you to define custom *filters* and apply them live or historical data in order to extract the relevant data to display for a particular plot type.



Live and Historical Data Filtered and Plotted

Related concepts

[Offline and online operation](#)

Data types

VibroSight operates with three broad types of data:

- *Waveforms* are the raw data as measured by an XMx16 card. The samples of a waveform are either spaced equally in time (fixed frequency mode) or spaced equally in space (order tracking mode).
- *Spectra* are extracted from the waveforms (raw data) through an FFT.
- *Extracted values* are scalar values calculated by a XMx16 card using the data from waveforms, spectra or other extracted values.

In addition, *external values* are scalar values generated externally to VibroSight but that can be imported into a VibroSight Server database.

Related concepts

[Offline and online operation](#)

Offline and online operation

VibroSight can be used in offline or online modes of operation:

- *Offline* refers to the operation of VibroSight without a connection to XMx16 cards, that is, working with historical data from a VibroSight Server database data only.
- *Online* refers to the operation of VibroSight with a connection to XMx16 cards, that is, acquiring live data.

Related concepts

[Data types](#)

[Live and historical data](#)

Plot types

The catalogue of plots available in VibroSight Vision includes static and dynamic plots.

The following static plots are supported:

- Bar chart
- Table
- Trend
- Bode
- Polar
- Correlation
- Shaft centerline.

The following dynamic plots are supported:

- Waveform
- Orbit
- Spectrum (and full spectrum)
- Waterfall/Cascade (and full waterfall/cascade)
- Spectrogram.
- [Data quality information for a VibroSight Vision plot](#)
Every VibroSight Vision plot includes a summary bar at the top of the document window, which includes a data quality indicator (right) when bad quality data is included in the plot.
- [Cursors](#)
Cursors are available in applicable types of VibroSight Vision plot in order to highlight measurements of interest and allow their values to be read.

Data quality information for a VibroSight Vision plot

Every VibroSight Vision plot includes a summary bar at the top of the document window, which includes a data quality indicator (right) when bad quality data is included in the plot.

Data quality indicator	Data quality	Description
(None)	Good	All of the status bits (corresponding to all of the displayed data points) are OK for this plot
	Bad	At least one of the status bits (corresponding to one of the displayed data points) is in error for this plot

Individual status bits (flags) corresponding to data quality information are available from the VM600 XMx16 cards and VibroSmart DMS modules. These individual bits are combined (logical AND) for each data point, in order to generate the overall plot quality indicator.

When displayed, the data quality indicator can be used to display the error flags (status bits) corresponding to the bad quality data in the plot.

Parent topic: [Plot types](#)

Related reference

[Data quality information from a VM600 XMx16 card](#)

[Data quality information from a VibroSmart DMS module](#)

[Data handling information for a VibroSight Vision plot](#)

Cursors

Cursors are available in applicable types of VibroSight Vision plot in order to highlight measurements of interest and allow their values to be read.

Two type of cursor are available in VibroSight Vision:

- Main cursor – a single cursor
- Delta cursor – a second cursor that is used in conjunction with the main cursor.

Both types of cursor appear as a pair of dashed lines (one vertical, one horizontal) that are displayed in the same colour as the measurement curve that the cursor is bound to. In general, the cursors (X coordinate) are moved by the user in order to display the corresponding measurement values (Y coordinate).

The main cursor is enabled by default in all applicable plots. When the main cursor is enabled, a Main cursor column appears in the legend of the plot. The Main cursor column displays the amplitude (Y coordinate) of the measurement corresponding to where the main cursor intersects the measurement curve (X coordinate as indicated in the Timestamp column).

The delta cursor is not enabled by default. When the delta cursor is enabled, Delta cursor, Y diff and X diff columns appear in the legend of the plot. The Delta cursor column displays the amplitude (Y coordinate) of the measurement corresponding to where the delta cursor intersects the measurement curve (X coordinate as indicated in the Timestamp column). The Y diff column displays the absolute difference between the Y coordinates of the main and delta cursors. The X diff column displays the absolute difference between the X coordinates of the main and delta cursors.

Note:

Where a measured value (Y coordinate) that corresponds to the Timestamp (X coordinate) is available, it is displayed in the appropriate plot legend column without parentheses. For example, 70 mm/s pk @ 17.08.2011 18:20:35.

Where a measured value (Y coordinate) that corresponds to the Timestamp (X coordinate) is not available, a value is interpolated and displayed in the appropriate plot legend column with parentheses. For example, (70 mm/s pk @ 17.08.2011 18:20:35).

Parent topic: [Plot types](#)

Data handling limits

For VibroSight Vision plots created using historical data, fewer data items than the total available in the database can be displayed, depending on a data reduction algorithm that considers the data handling limits configured for plots.

The data handling limits for plots are configured using Tools > Options, then Environment \ Data Handling Limitation:

- The default data display limit for variables (static plots) is 150000 data items and the maximum permitted value is 1000000.
- The default data display limit for waveforms, spectra and orbits (dynamic plots) is 500 data items and the maximum permitted value is 1000.

Note:

These data display limits are on a per curve basis. For example, with a data display limit of 150000 data items for variables, each curve displayed in a Trend plot is limited to 150000 data items. But multiple curves, each up to 150000 data items, can be displayed in the same Trend plot.

The data handling limits are used by a data reduction algorithm to display fewer data items in a plot than the total available in the database.

Note:

Smaller numbers (lower processing overhead) improve the system response time but reduce the resolution of the plots.

- [Data handling information for a VibroSight Vision plot](#)

As fewer data items than the total available in the database can be displayed for VibroSight Vision plots created using historical data, information is available on the number of measurement data items that are displayed in a plot.

Data handling information for a VibroSight Vision plot

As fewer data items than the total available in the database can be displayed for VibroSight Vision plots created using historical data, information is available on the number of measurement data items that are displayed in a plot.

Note:

For static plots, the number of measurement data items displayed is a count of the number of points per measurement included in the plot.

For dynamic plots, the number of measurement data items displayed is a count of the number of waveforms, spectra or orbits per measurement included in the plot.

Information on the number of measurement data items included in a plot is available from two locations:

- In the summary bar at the top of every plot document window (top right, just before the data quality indicator).

This item count is the total number of data items included in the plot. To display additional information about the data items, move the pointer over the data items in the summary bar in order to display an on-screen tip.

- In the legend at the bottom of every plot document window, in the Items column (optional).

This item count is the number of data items included in the plot for an individual curve. To display additional information about the data items, move the pointer over the data items cell in the legend in order to display an on-screen tip.

If the number of data items included in a plot has been reduced by the VibroSight Vision data handling limits, then a filter icon is displayed in the item count displayed in the summary bar at the top of the plot and the on-screen tip will provide additional information (for example, “Data reduction has been applied”)

Example data handling information in the summary bar	Description
76400 items	A total of 76400 data items are displayed in the plot. The data handling limits have not been reached.
▼ 150000 of 764000 items	A total of 150000 data items are displayed in the plot. The filter icon indicates that the data handling limits have been reached and fewer data items than the total available in the database have been displayed, according to a data reduction algorithm.

Parent topic: [Data handling limits](#)

Related reference

[Data quality information for a VibroSight Vision plot](#)

VibroSight measurements and VibroSight Vision default plots

Each different type of measurement (data entity) generated by VibroSight has a default type of VibroSight Vision plot that is used whenever it is necessary to automatically create a plot to display the data, as shown in the following table.

VibroSight measurement data entities and VibroSight Vision default plots		
Measurement	Default plot	Notes
~ Waveform	Waveform	
📊 Spectrum	Spectrum	For live data with a buffer size of 1 item
	Waterfall/Cascade	For historical data with a non-pressure physical quantity and for live data with a buffer size greater than 1 item
	Spectrogram	For historical data with a pressure physical quantity and for live data with a buffer size greater than 1 item
📈 Scalar	Trend	
📐 Vector/Phasor	Polar	
⦿ Shaft Centerline	Shaft Centerline	
🌀 Orbit	Orbit	
📊 Full Spectrum	Full Spectrum	For live data with a buffer size of 1 item
	Waterfall/Cascade	For historical data with a non-pressure physical quantity and for live data with a buffer size greater than 1 item

Although each measurement data entity has a default plot that is used whenever it is necessary to automatically create a plot to display the data, some measurement data entities are compatible with multiple different types of VibroSight Vision plot. For example, scalar data can be displayed on a bar chart plot, a trend plot and a correlation plot.

Related tasks

[Lesson 3 - Plotting data](#)

[Lesson 4 - Viewing plotted data as grouped or ungrouped](#)

Related reference

[VibroSight measurements](#)

[VibroSight measurements and VibroSight Vision plot compatibility](#)

[VibroSight Vision plots](#)

VibroSight measurements and VibroSight Vision plot compatibility

The different types of measurement (data entities) generated by VibroSight can only be used by the appropriate (compatible) type of VibroSight Vision plot, as shown in the following tables.

The VibroSight software (base package) uses the following measurements.

VibroSight measurement and VibroSight Vision plot compatibility	
Measurement	Compatible plots

 Waveform	Waveform
 Spectrum	Spectrogram, Spectrum, Waterfall/Cascade
 Scalar (amplitude, phase or frequency)	Bar Chart, Correlation, Trend,
 Vector (amplitude and phase)	Bode, Polar, Trend
 Phasor (amplitude and phase and frequency)	Bode, Polar, Trend
 Frequency line (amplitude and frequency)	Bode, Trend
 Shaft Centerline	Shaft Centerline
 Orbit	Orbit
 Full Spectrum	Full Spectrum, Waterfall/Cascade

In addition, the Hydro air-gap monitoring package of the VibroSight software uses the following additional measurements.

Additional VibroSight measurements for Hydro air-gap monitoring and VibroSight Vision plot compatibility	
Measurement	Compatible plots
From stator transducers:	
Rotor shape ( Waveform)	Polar Waveform, Waveform
Rotor signature ( Rotor data)	Polar Waveform, Waveform
Gap Pn ( Pole data)	Bode, Bar Chart, Table, Trend
Min gap ( Pole data)	
Average gap ( Scalar)	Bar Chart, Correlation, Trend
Rotor eccentricity ( Vector)	Bode, Trend, Polar
Rotor circularity ( Scalar)	Bar Chart, Correlation, Trend
Rotor ellipticity ( Vector)	Bode, Trend, Polar
From generator layer measurements:	
Layer rotor signature ( Rotor data)	Polar Waveform, Waveform
Layer gap Pn ( Pole data)	Bode, Bar Chart, Table, Trend
Layer min gap ( Pole data)	
Layer average gap ( Scalar)	Bar Chart, Correlation, Trend
Layer rotor eccentricity ( Scalar)	Bode, Trend, Polar
Layer rotor circularity ( Scalar)	Bar Chart, Correlation, Trend
Layer rotor ellipticity ( Scalar)	Bode, Trend, Polar
Layer stator shape ( Waveform)	Waveform
Layer stator eccentricity ( Scalar)	Bode, Trend, Polar
Layer stator circularity ( Scalar)	Bar Chart, Correlation, Trend
Layer stator ellipticity ( Scalar)	Bode, Trend, Polar

Although some measurements are compatible with different VibroSight Vision plots, each measurement has a default plot that is used whenever it is necessary to automatically create a plot to display the data. For example, when a measurement is double-clicked in the lower pane of the Machinery View in VibroSight Vision.

Related tasks

[Lesson 3 - Plotting data](#)

[Lesson 4 - Viewing plotted data as grouped or ungrouped](#)

Related reference

[VibroSight measurements](#)

[VibroSight measurements and VibroSight Vision default plots](#)

[VibroSight Vision plots](#)

VibroSight Vision timestamps

VibroSight Vision obtains the timestamps associated with measurements from a VibroSight Server in coordinated universal time (UTC) but can easily switch between displaying the timestamp information in different formats.

Note:

The timestamp format selected is used throughout a VibroSight Vision project and affects the date and time displayed along plot axes, in plot legends and in the Time Range tool window.

VibroSight Vision can display the timestamps associated with measurements in the following date and time formats:

- Site time – the date and time according to the time zone options configured for the VibroSight Server (as stored in the VibroSight Server database), including any daylight saving time adjustments.

When Site time is selected in VibroSight Vision, the time zone and daylight saving time settings configured for the VibroSight Server are used directly by VibroSight Vision. If daylight saving time settings are configured for the VibroSight Server, this is indicated by (DST) being displayed at the end of the Site time text string in the VibroSight Vision status bar.

- UTC – the date and time according to coordinated universal time (UTC).

When UTC is selected in VibroSight Vision, only the time zone information from the VibroSight Server is used directly by VibroSight Vision. As UTC does not change with the seasons, no daylight saving time settings are applied by VibroSight Vision.

- Local computer time – the date and time according to the local clock of the computer running VibroSight Vision (that is, the local time zone and any daylight saving time adjustments).

When Local computer time is selected in VibroSight Vision, the time zone information from the VibroSight Server is converted to the local time zone by VibroSight Vision. In addition, the daylight saving time settings (Windows > Control Panel > Date and Time) on the computer running VibroSight Vision are applied, which is indicated by (DST) being displayed at the end of the Local computer time text string in the VibroSight Vision status bar.

Note:

The timestamp displayed in the VibroSight Vision status bar will either be Site time, UTC time or Local computer time. This setting applies to the entire VibroSight Vision session, covering plots, time axes, cursor information and time ranges.

In the VibroSight Vision status bar (under Timestamps) and in the VibroSight Server window (under Time Zone), (DST) is included at the end of the time text string displayed if daylight saving time is being used for the date and time settings.

By default, VibroSight Vision uses Site time for the display of measurement timestamps.

The default timestamp format can be changed using the Options window in VibroSight Vision (Tools > Options).

The timestamp format used in a VibroSight Vision project can be changed at any time using the Timestamps control in the VibroSight Vision status bar.

Related concepts

[VibroSight Server time reference requirements](#)

[VibroSight Server time zone](#)

Related tasks

[Configuring the default VibroSight Vision timestamps format](#)

[Displaying VibroSight Vision timestamps in different formats](#)

Related information

[VibroSight monitoring system time reference requirements](#)

VibroSight Vision qualifiers

A qualifier is a method to reduce the amplitude of a dynamic signal to a single number or a convention to express phase. For example, average, peak, peak-to-peak and phase lead from -180° to 180° .

Together with the physical quantity and the unit, the qualifier is essential in order to be able to interpret the measured data correctly, which is why these three items of information are displayed together on every plot.

Note:

Rectifier was the term used in previous Meggitt Sensing Systems products for the same function, but its use has now been deprecate in favour of qualifier.

As can be seen from the following tables, every qualifier belongs to a qualifier group and to a qualifier family.

VibroSight Vision time domain qualifiers				
Qualifier			Family	
Group	Name	Abbreviation	Name	Abbreviation
Time Domain True RMS	True RMS	t_RMS	RMS	RMS
	Scaled Peak	s_pk	Peak	pk
	Scaled Peak-Peak	s_pp	Peak-Peak	pp
	Scaled Average	s_avg	Average	avg
Time Domain True Average	True Average	t_avg	Average	avg
Time Domain True Peak	True Peak	t_pk	Peak	pk
	Scaled True Peak-Peak	st_pp	Peak-Peak	pp
Time Domain True Peak Peak	True Peak-Peak	t_pp	True Peak-Peak	pp
	Scaled True Peak	st_pk	Scaled True Peak	pk
Time Domain Minimum	Minimum	min	Minimum	min
Time Domain Maximum	Maximum	max	Maximum	max
Time Domain Electrical DC	Electrical DC	elecDC	Electrical DC	elecDC
Time Domain Common Mode Voltage	Common Mode Voltage	CMV	Common Mode Voltage	CMV
VibroSight Vision frequency domain qualifiers				
Qualifier			Family	
Group	Name	Abbreviation	Name	Abbreviation
Frequency Domain Band RMS	RMS	RMS	RMS	RMS
	Scaled Peak	s_pk	Peak	pk
	Scaled Peak-Peak	s_pp	Peak-Peak	pp
	Scaled Average	s_avg	Average	avg
Frequency Domain Line Band Peak	Band Peak	b_pk	Peak	pk
Frequency Domain Line RMS	RMS	RMS	RMS	RMS
	Peak	pk	Peak	pk
	Peak-Peak	pp	Peak-Peak	pp
	Average	avg	Average	avg

VibroSight Vision phase qualifiers				
Qualifier			Family	
Group	Name	Abbreviation	Name	Abbreviation
Phase	Lead −180° to 180°	Lead	Lead −180° to 180°	Lead
	Lead 0° to 360°	Lead	Lead 0° to 360°	Lead
	Lag −180° to 180°	Lag	Lag −180° to 180°	Lag
	Lag 0° to 360°	Lag	Lag 0° to 360°	Lag

VibroSight Vision keyboard shortcuts and mouse shortcuts

In addition to the standard Windows keyboard shortcuts, VibroSight Vision provides a number of keyboard shortcuts and mouse shortcuts that make the use of cursors in plots and the navigation of plots easier and faster.

Windows keyboard shortcuts

As with any VibroSight software module, the F1 key can be used to display the  VibroSight help.

The F11 key can be used in VibroSight Vision to maximize the screen area given to the document windows (plots) contained in the active project view. Press F11 again or click Exit Full Screen to switch back to the default VibroSight Vision project screen usage.

The other standard Windows keyboard shortcuts that are supported in VibroSight Vision are shown on the menu bar commands. For example, Edit > Cut (CTRL+X), Edit > Copy (CTRL+C) and Edit > Past (CTRL+V).

When working with hierarchical tree structures and lists in VibroSight Vision, such as those found in the Machinery View, Hardware View, Time Range and Project Explorer, CTRL+click and SHIFT+click can be used to select multiple items:

- Click on the first item of interest, then CTRL+click on any other items of interest, to select a discontinuous selection of items.
- Click on the first item of interest, then SHIFT+click on the last item of interest, to select a continuous selection of rows.

For example, multiple measurements selected in this way using the Machinery View or Hardware View tool windows can be added to a document window (plot), multiple machine states selected in this way using the Time Range tool window will define the time range to use for the VibroSight Vision project, and multiple plots selected in this way using the Project Explorer tool window can be copied from one project view to another.

VibroSight Vision keyboard shortcuts

As can be seen from the following table, the majority of the keyboard and mouse shortcuts are related to the use of cursors.

VibroSight Vision keyboard shortcuts and mouse shortcuts						
Shortcut key	VibroSight Vision plots					
	Trend, Bode, Polar, Correlation, Shaft centerline	Waveform, Spectrum, Orbit	Waterfall/Cascade	Spectrogram	BarChart	Table
LEFT ARROW	Move cursor to the previous data item in time	Move cursor to the previous sample or line	Move cursor to the previous sample or line	Move cursor to the previous data item in time	Move slider to the previous data item in time	Cell navigation
RIGHT ARROW	Move cursor to the next data item in time	Move cursor to the next sample or line	Move cursor to the next sample or line	Move cursor to the next data item in time	Move slider to the next data item in time	Cell navigation
UP ARROW	Bind cursor to the previous curve (data entity)	Bind cursor to the previous curve (data entity)	Move cursor to the next data item in time	Move cursor to the next sample or line		Cell navigation
DOWN ARROW	Bind cursor to the next curve (data entity)	Bind cursor to the next curve (data entity)	Move cursor to the previous data item in time	Move cursor to the previous sample or line		Cell navigation
CTRL+LEFT ARROW	Move cursor to the earliest visible data item in time	Move slider to the earliest data item in time	Move cursor to the earliest visible data item in time	Move cursor to the earliest visible data item in time	Move slider to the earliest data item in time	Move slider to the earliest data item in time
CTRL+RIGHT ARROW	Move cursor to the latest visible data item in time	Move slider to the latest data item in time	Move cursor to the latest visible data item in time	Move cursor to the latest visible data item in time	Move slider to the latest data item in time	Move slider to the latest data item in time
CTRL+UP ARROW	Move cursor to the highest amplitude visible data item	Move cursor to the highest amplitude visible sample or line	Move cursor to the highest amplitude visible line in time and frequency	Move cursor to the highest amplitude visible line in time and frequency		
CTRL+DOWN ARROW	Move cursor to the lowest amplitude visible data item	Move cursor to the lowest amplitude visible sample or line	Move cursor to the lowest amplitude visible line in time and frequency	Move cursor to the lowest amplitude visible line in time and frequency		
SHIFT+LEFT ARROW	Move cursor to the previous data item in time	Move slider to the previous data item in time	Move cursor to the previous data item in time	Move cursor to the previous data item in time	Move slider to the previous data item in time	Move slider to the previous data item in time
SHIFT+RIGHT ARROW	Move cursor to the next data item in time	Move slider to the next data item in time	Move cursor to the next data item in time	Move cursor to the next data item in time	Move slider to the next data item in time	Move slider to the next data item in time
	Bind cursor to the	Bind cursor to the	Bind cursor to the	Bind cursor to the		

SHIFT+UP ARROW	previous curve (data entity)	previous curve (data entity)	previous curve (data entity)	previous curve (data entity)		
SHIFT+DOWN ARROW	Bind cursor to the next curve (data entity)	Bind cursor to the next curve (data entity)	Bind cursor to the next curve (data entity)	Bind cursor to the next curve (data entity)		
PAGE UP	Display the previous plot page					
PAGE DOWN	Display the next plot page					
HOME	Display the first plot page					
END	Display the last plot page					
Rotate the mouse wheel forwards/backwards	Display the previous/next plot page					
Drag the pointer in a plot	Zoom					
ESC	Zoom reset					
CTRL+drag the pointer in a plot	Pan					

Related tasks

[Lesson 4 - Viewing plotted data as grouped or ungrouped](#)

Related reference

[VibroSight Vision Machinery View and Hardware View keyboard shortcuts and mouse shortcuts](#)

Docking framework

VibroSight implements a flexible docking framework that allows the user to change the default arrangement and behaviour of the windows that form part of the user interfaces for the various VibroSight software modules.

The default window layout is used whenever a VibroSight software module is started and a new project is created. For example, the VibroSight Vision project user interface that is displayed with the Hardware View and the Machinery View tool windows docked on the left, the Time Range and the Project Explorer tool windows docked on the right, and the main working area in the centre of the screen where document windows (plots) can be added.

However, the VibroSight docking framework allows windows be rearranged to meets the presentation needs of the VibroSight application and the users working preferences. For example, in VibroSight Vision:

- Tool windows can:
 - - Be hidden or displayed.
 - Be docked (attached) to an edge (left, right, top or bottom) of the VibroSight window that contains the tool window or floated anywhere on the display (even outside the VibroSight window that contains the tool window).
 - Use auto- hide so that the tool window is minimized, leaving a small tab at the edge of the user interface, but is automatically displayed as normal whenever the pointer is moved over the tab.
 - Combined into a single tool window or separated into individual tool windows.
- Document windows (plots) can:
 - - Arranged in horizontal or vertical tab groups.

VibroSight Vision session management

VibroSight Vision implements session management in order to ensure that when a VibroSight Vision project is opened, it is in the same state as it was when last saved.

VibroSight Vision saves the state of the VibroSight Vision session in the VibroSight Vision project file along with the VibroSight Vision project information (VibroSight Server connection, views, plots and so on).

The session information saved includes the docking framework parameters and properties, which allows a re-opened VibroSight Vision project to present exactly the same user interface (as when it was last used), even on a different computer.

- [Recommendations for working with VibroSight Vision](#)
In order to reduce the possibility of performance-related issues, it is recommended to work with projects in a modular and structured way and avoid overloading individual VibroSight Vision projects with too much information.
- [VibroSight Vision session limits](#)
VibroSight Vision implements session limits in order to ensure that a user does not create a VibroSight Vision project of such complexity that the performance of VibroSight Vision declines and they experience system responsiveness issues.

Related tasks

[Copying a VibroSight project to another computer](#)

[Changing the data source for a VibroSight project](#)

Recommendations for working with VibroSight Vision

In order to reduce the possibility of performance-related issues, it is recommended to work with projects in a modular and structured way and avoid overloading individual VibroSight Vision projects with too much information.

In general, best practice for working with VibroSight includes the following general recommendations for VibroSight Vision projects:

- Limit the number of live spectrogram plots and waterfall/cascade plots per project.
- Allow only one measurement (data entity) per spectrogram plot or waterfall/cascade plot.
- If multiple spectrogram plots or waterfall/cascade plots are being used in a project, allow only one of these plots to be active at a time (that is, displayed at the front of the working area and being updated).
- If polar plots or shaft centreline plots are being used in a project, do not show speed or time labels on the plot. (Right-click on a plot, click Plot Properties and clear the Labels check box on the General tab of the dialog box.)
- Reduce the overall number of measurements (data entities) being used in a single project.
- When interacting with a VibroSight Vision project, delete temporary plots that are no longer required.

For example, use one VibroSight Vision project for live data and other separate VibroSight Vision projects for different historical data analysis tasks.

Parent topic: [VibroSight Vision session management](#)

VibroSight Vision session limits

VibroSight Vision implements session limits in order to ensure that a user does not create a VibroSight Vision project of such complexity that the performance of VibroSight Vision declines and they experience system responsiveness issues.

The purpose of the session limits is to limit the maximum size of a VibroSight Vision session and primarily affects the following:

- Number of views
- Plot types in views
- Data entity types in plots
- Data entity sizes in plots
- Settings of the time range.

The VibroSight Vision session limits are reached by adding more measurement data to an existing plot, adding a new plot or modifying the time range being used.

Note:

The selected time range is shared by all plots (and views) in a VibroSight Vision project. That is, when the time range is changed, all of the plots in the project update to use the new time range.

If the session limits are reached, a message is displayed to the user: “You are already using the maximum of available resources. Please remove some plots, reduce the time range and try again.”

In addition, there is a limit of 64 series per plot. If the user tries to add more, a message is displayed to the user: “The plot can contain a maximum of 64 series. There are currently XX series and you are trying to add YY.”

Parent topic: [VibroSight Vision session management](#)

Combustion Monitoring

VibroSight Vision provides a special composite combustion monitoring plot providing three complementary views of combustion data.

High-temperature dynamic pressure transducers mounted close to the combustor of a gas turbine enable pressures within the system to be measured. The signals generated by the transducers vary due to many factors, including ambient conditions, fuel composition, operating conditions, and the onset of component damage.

Typically, combustion monitoring involves comparing a reference data set, determined over a range of operating conditions, with real-time averaged frequency spectra. This allows anomalies to be easily identified.

Data source

Data source is a term used to describe the origin of the measurement data imported into VibroSight clients.

As shown below, a data source can be either:

- A VibroSight Server, that is, measurement data stored in a Sybase SQL Anywhere 11 relational database and accessed via a VibroSight Server.

Note:

The measurement data stored in a VibroSight Server database can come from VM600 XMx16 cards or VibroSmart DMS modules.

- VibroSmart DMS devices, that is, live measurement data being streamed directly from DMS modules (such as an VSV300).

When a new project is created in VibroSight clients such as VibroSight Mimic, VibroSight Scope and VibroSight Vision, the VibroSight Data Sources Selection dialog box is automatically displayed so that the data source for the project can be specified.

For an existing VibroSight client project in VibroSight Mimic and VibroSight Vision, the Link To New Data Source command can be used to display the VibroSight Data Sources Selection dialog box and change the data source for the project.

Related concepts

[DSN-free operation](#)

Related tasks

[Changing the data source for a VibroSight project](#)

Related reference

[VibroSight Data Sources Selection dialog box](#)

Servers

Measurement data originates from sensors, connected to the machinery being monitored, whose electrical signals are pre-processed by the VM600 XMx16 cards or VibroSmart DMS modules. The processed measurement data is then stored in a Sybase SQL Anywhere 11 relational database that is managed by a VibroSight Server.

To make the measurement data stored in a VibroSight Server database available in VibroSight Vision, a data source is specified when a VibroSight Vision project is created. The Data Sources Selection dialog box used allows a connection to be established with either a VibroSight Server or VibroSmart DMS devices.

Events

An event informs you of changes occurring within the VibroSight system.

The following event types exist:

- Machinery events. Events related to machinery, such as alarms.
- Hardware events. Events related to hardware, for example, "Rack now online".
- Server events. Events relating to the operation of VibroSight servers.
- User-defined events. Events that are manually created by users.

The following topics describe how you can work with events.

Related tasks

[Sorting the Event List](#)
[Customizing the Event List](#)
[Filtering the Event List](#)
[Acknowledging Single Events](#)
[Acknowledging All Events](#)
[Printing the Event List](#)
[Exporting the Event List](#)

Related reference

[The Event Viewer window](#)
[The Event Viewer Toolbar](#)
[The Event Detail Window](#)
[The New User-Defined Event Window](#)

Window Types

The VibroSight Vision's graphical user interface is made up of several basic window types.

These are:

1. Document windows.

Document windows are created when you open or create plots, filters, or other items. A list of open document windows appears in the Window > List of open windows menu item.

Document windows either have their own local toolbars, positioned at the top of the window itself, or use the global application toolbars at the top of the VibroSight Vision window.

2. Tool windows.

Tool windows allow you to select, view, and configure the measurement data to import and display, or configure and display attributes of charts and plots. Tool windows are listed on the View menu. The Toolbox and Data Explorer windows are examples of tool windows.

Related concepts

[Window States](#)

Window States

The VibroSight Vision's graphical user interface is made up of a number of windows.

A window is always in one of a number of *states*:

1. **Floating.** A floating window appears to "float" on top of the VibroSight Vision window as a separate window. You can drag a floating window's title bar and move it to any position on your desktop.
2. **Docked.** A docked window appears as an integral part of the main VibroSight Vision window. Although it has a default position, you can drag and drop a docked window to a different position within the main window; the other docked windows are then automatically rearranged to make room for it. You can save this new window layout and apply it whenever you prefer working with this layout.

3. **Tabbed Document.** A tabbed document appears in the central area of the VibroSight Vision window and is typically used as a canvas for plots.

Whenever you create a new tabbed document, it automatically appears on top of all existing tabbed documents. To display a tabbed document, you click its tab.

The *Start page* is a special tabbed document that always appears as the first tabbed document.

4. **Auto Hide.** Auto hide allows you to make the most of limited display space by hiding and displaying windows automatically. When hidden, a vertical title bar appears along the left or right edges of the VibroSight Vision window; moving the mouse over this title bar automatically displays the window. The window is then hidden automatically when you select another window.

Not all windows can be in all states. For example, the Toolbox window can be docked or floated, but cannot become a tabbed document. Similarly, auto hide can only be applied to windows that are currently docked.

You can change the state of a window in several ways:

- Using the options on the Window menu. For example, if the currently selected window is in the docked state, choose Window > Floating to change its state to "floating". If a menu choice is unavailable (dimmed), the window cannot be put in this state.
- By double-clicking the title bar of a window. For example, double-clicking a tool window's title bar changes it into a floating window, then double-clicking the title bar again returns it to its original docked state.
- Clicking the Toggle Auto Hide button  on the title bar of a window toggles auto hide on or off.

Related concepts

[Window Types](#)

Related tasks

[Adding Charts to Display Areas](#)

Toolbars

VibroSight Vision includes a number of toolbars containing icons that represent specific actions you can perform.

VibroSight Vision uses two different types of toolbar:

- *Global toolbars* appear immediately below the menu bar and contain actions that are always available. The Standard toolbar, for example, allows you to save the current project and print plots.
- *Local toolbars* appear at the top of tool or document windows and contain actions relevant only to that window. For example, the Navigation Toolbar allows you to navigate data displayed on the Data Browser window.

You can customize and manipulate toolbars in a number of ways, including:

- Showing or hiding individual toolbars
- Changing the order in which the toolbars appear
- Floating or docking toolbars
- Customizing toolbars to include only the buttons you want to appear.
- Creating your own custom toolbars.

The toolbar types have slightly different characteristics. Local toolbars, for example, cannot be hidden or floated.

Starting VibroSight Vision

There are several ways in which VibroSight Vision can be started.

For example:

- From a Windows Explorer, by double-clicking a VibroSight Vision project file (*.vsvision).
- From a shortcut to the VibroSight Vision executable program file ( VibroSightVision.exe) on the Windows desktop.
- From the Windows Start menu, by clicking Start > All Programs > Meggitt > VibroSight 2 > Vision.
- From the VibroSight Welcome Center, by clicking Vision.

Starting VibroSight Vision by double-clicking a VibroSight Vision project file (*.vsvision) in a Windows Explorer will start VibroSight Vision, and automatically open the project and connect to the data source (VibroSight Server or VibroSmart DMS Devices). This effectively restores the VibroSight Vision project to the state it was in when it was last used and saved, with the same views and plots, layout and settings.

The other ways of starting VibroSight Vision listed above will start VibroSight Vision and display the VibroSight Vision Home Page, which allows an existing VibroSight Vision project to be opened or a new project to be created.

Related reference

[Default VibroSight files](#)

Managing VibroSight Vision projects

You can easily create new VibroSight Vision projects, reopen existing projects and to using them again, or copy a project to a different computer to share work.

- [Creating a VibroSight Vision project](#)
VibroSight Vision projects can be created in VibroSight Vision from the VibroSight Vision Home page (no project is open) or the VibroSight Vision project user interface (a project is open).
- [Opening a VibroSight Vision project](#)
VibroSight Vision projects can be opened in VibroSight Vision from the VibroSight Vision Home page (no project is open) or the VibroSight Vision project user interface (a project is open).
- [Saving a VibroSight Vision project](#)
VibroSight Vision projects can be saved in VibroSight Vision from the VibroSight Vision project user interface (a project is open).
- [Closing a VibroSight Vision project](#)
VibroSight Vision projects can be closed in VibroSight Vision from the VibroSight Vision project user interface (a project is open).
- [Changing the data source for a VibroSight project](#)
For some VibroSight clients, the data source for a VibroSight client project can be changed after the project has been created.

Creating a VibroSight Vision project

VibroSight Vision projects can be created in VibroSight Vision from the VibroSight Vision Home page (no project is open) or the VibroSight Vision project user interface (a project is open).

If creating a new VibroSight Vision project when a project is already open, the user will be prompted to save any unsaved changes in the already open project before being able to continue.

Note:

The VibroSight Vision title bar includes an asterisk (*) after the name of the project if there have been changes to the project since it was last saved.

1. Click either the File > New Project menu command or the  New Project toolbar button.

The Data Source Type Selection page of the Data Sources Selection dialog box is displayed.

2. For projects using a VibroSight Server as the data source, click VibroSight Server and on the VibroSight Server Selection page that appears, select the VibroSight Server to use as the data source for the project. Then click Finish.
3. For projects using VibroSmart DMS devices as the data source, click Devices and on the VibroSight Devices Selection page that appears, add the VibroSmart DMS device or devices to use as the data source for the project. Then click Finish.
4. The new project is created and the default VibroSight Vision project user interface is displayed. The main working area in the centre of the VibroSight Vision project user interface is empty, ready to display document windows (plots).

Note: The connection status displayed in the VibroSight Vision status bar (bottom right) changes from  Disconnected to  Connected to ... to show that a connection to the data source has been established.

Parent topic: [Managing VibroSight Vision projects](#)

Related concepts

[VibroSight Vision projects](#)

[Data source](#)

[Servers](#)

Related reference

[VibroSight Vision Data Sources Selection dialog box](#)

Opening a VibroSight Vision project

VibroSight Vision projects can be opened in VibroSight Vision from the VibroSight Vision Home page (no project is open) or the VibroSight Vision project user interface (a project is open).

If opening a VibroSight Vision project when a project is already open, the user will be prompted to save any unsaved changes in the already open project before being able to continue.

Note:

The VibroSight Vision title bar includes an asterisk (*) after the name of the project if there have been changes to the project since it was last saved.

1. Click either the File > Open Project menu command or the  Open Project toolbar button.

The Open dialog box is displayed.

2. Navigate the folders on the computer and select the VibroSight Vision project file (*.vsvision) required, then click Open.
3. The project is opened and the VibroSight Vision project user interface is displayed.

Note:

The window layout that is used when a VibroSight Vision project is opened corresponds to the window layout of that project when it was last saved.

4. Check the connection status displayed in the VibroSight Vision status bar (bottom right) to see if a connection to the data source has been established:  Connected to ... or  Disconnected. If there is no connection, it is probably because the data source that is used for the project is not currently available on the network.
- [Opening a VibroSight Vision project from a Windows command prompt](#)
VibroSight Vision projects can also be opened from a Windows command prompt.
 - [Opening a VibroSight Vision project from a Windows desktop shortcut](#)
VibroSight Vision projects can also be opened from a shortcut on the Windows desktop, which is particularly useful for frequently used VibroSight Vision projects.

Parent topic: [Managing VibroSight Vision projects](#)

Related concepts

[VibroSight Vision projects](#)

[VibroSight Vision session management](#)

Opening a VibroSight Vision project from a Windows command prompt

VibroSight Vision projects can also be opened from a Windows command prompt.

This way of opening a VibroSight Vision project starts a new VibroSight Vision, in addition to any VibroSight Vision sessions that are already running.

1. Start a Windows command prompt window in one of the following ways:
 - a. Click Start > Programs > Accessories > Command Prompt.
 - b. Or click Start > Run, then type `cmd` in the Open text box and then click OK.

The Windows command prompt window appears.

2. At the Windows command prompt, type the command to change directory to the folder used for the VibroSight executable program files, and then press ENTER. For example, type `cd C:\Program Files (x86)\Meggitt\VibroSight 2\Bin`

Note:

The default location for the executable program files used by VibroSight depends on the operating system installed on the computer:

- o C:\Program Files (x86)\Meggitt\VibroSight 2\Bin on 64-bit versions of Windows.
- o C:\Program Files\Meggitt\VibroSight 2\Bin on 32-bit versions of Windows.

The Windows command prompt will change to the VibroSight executable program file folder.

- At the Windows command prompt, type the command to start the VibroSight Vision executable program file ( VibroSightVision.exe) and open a VibroSight Vision project, and then press ENTER. For example, type VibroSightVision “C:\VibroSight Data\RotorKit\ExampleProject01.vsvision”.

VibroSight Vision starts, the project specified is opened and the VibroSight Vision project user interface is displayed.

Note:

The window layout that is used when a VibroSight Vision project is opened corresponds to the window layout of that project when it was last saved.

- Check the connection status displayed in the VibroSight Vision status bar (bottom right) to see if a connection to the data source has been established:
 Connected to If there is no connection, it is probably because the data source that is used for the project is not currently available on the network.

Parent topic: [Opening a VibroSight Vision project](#)

Opening a VibroSight Vision project from a Windows desktop shortcut

VibroSight Vision projects can also be opened from a shortcut on the Windows desktop, which is particularly useful for frequently used VibroSight Vision projects.

This way of opening a VibroSight Vision project starts a new VibroSight Vision, in addition to any VibroSight Vision sessions that are already running.

- On the Windows desktop, right-click and click New > Shortcut.

The Windows Create Shortcut dialog box appears.

- Click the Browse button to navigate the folders on the computer and select the VibroSight Vision executable program file ( VibroSightVision.exe) and click OK. Then click Next.

Note:

The default location for the executable program files used by VibroSight depends on the operating system installed on the computer:

- o C:\Program Files (x86)\Meggitt\VibroSight 2\Bin on 64-bit versions of Windows.
- o C:\Program Files\Meggitt\VibroSight 2\Bin on 32-bit versions of Windows.

- Enter a name for the shortcut and click Finish.

Windows creates a shortcut to the VibroSight Vision program file on the desktop.

- On the Windows desktop, right-click on the shortcut and click Properties.
- On the Shortcut tab of the Properties dialog box that appears, edit the Target field to include the VibroSight Vision project to open. For example, "C:\Program Files (x86)\Meggitt\VibroSight 2\Bin\VibroSightVision.exe" "C:\VibroSight Data\RotorKit\ExampleProject01.vsvision" and click OK.
- On the Windows desktop, double-click on the shortcut.

VibroSight Vision starts, the project specified is opened and the VibroSight Vision project user interface is displayed.

Note:

The window layout that is used when a VibroSight Vision project is opened corresponds to the window layout of that project when it was last saved.

- Check the connection status displayed in the VibroSight Vision status bar (bottom right) to see if a connection to the data source has been established:
 Connected to If there is no connection, it is probably because the data source that is used for the project is not currently available on the network.

Parent topic: [Opening a VibroSight Vision project](#)

Saving a VibroSight Vision project

VibroSight Vision projects can be saved in VibroSight Vision from the VibroSight Vision project user interface (a project is open).

An open VibroSight Vision project can be saved using its existing file name or with a new file name.

Note:

The VibroSight Vision title bar includes an asterisk (*) after the name of the project if there have been changes to the project since it was last saved.

- To save an open VibroSight Vision project using its existing file name, click either the File > Save Project menu command or the  Save Project toolbar button.
- To save an open VibroSight Vision project with a new file name, click the File > Save Project As menu command. Use the Save As dialog box that appears to navigate the folders on the computer and select in which folder and under what file name to save the VibroSight Vision project file (*.vsvision). Then click Save.
- The project is saved and the file name used is displayed in the title bar at the top of the VibroSight Vision project user interface, without any asterisk (until there are changes to the project).

Parent topic: [Managing VibroSight Vision projects](#)

Related concepts

[VibroSight Vision projects](#)

[VibroSight Vision session management](#)

Related tasks

[Saving VibroSight Vision window layouts](#)

Closing a VibroSight Vision project

VibroSight Vision projects can be closed in VibroSight Vision from the VibroSight Vision project user interface (a project is open).

The user will be prompted to save any unsaved changes in the project before being able to continue.

Click the File > Close Project menu command.

The VibroSight Vision project is closed and the VibroSight Vision Home Page is displayed.

Note:

The File > Exit menu command or the  Close button in the VibroSight Vision title bar will exit (close) the VibroSight Vision session, closing an open VibroSight Vision project.

Parent topic: [Managing VibroSight Vision projects](#)

Related tasks

[Exiting VibroSight Vision](#)

Changing the data source for a VibroSight project

For some VibroSight clients, the data source for a VibroSight client project can be changed after the project has been created.

The data source for a VibroSight client project must be specified when the project is being created. However, some VibroSight clients support the Link To New Data Source command, which allows the data source for a project to be changed.

To change the data source for an existing VibroSight Mimic or VibroSight Vision project:

1. Start VibroSight Mimic or VibroSight Vision as required.
2. Open an existing project.
3. Click click File > Link To New Data Source and use the Data Sources Selection dialog box that appears to select a new data source on the network (VibroSight Server or VibroSmart DMS module).

For projects using a VibroSight Server as the data source, click VibroSight Server and on the VibroSight Server Selection page that appears, select the VibroSight Server to use as the data source for the project. Then click Finish.

For projects using VibroSmart DMS devices as the data source, click Devices and on the VibroSight Devices Selection page that appears, add the VibroSmart DMS device or devices to use as the data source for the project. Then click Finish.

4. The VibroSight client project updates its project file and starts using the new data source.

Note:

The properties of the objects in the VibroSight Mimic or VibroSight Vision project will be kept where possible. However, if the new data source does not use the same configuration names and structure, then some properties will be lost.

In general, if a Machinery view path is available for a data entity then the matching will be done based on the Machinery view path, otherwise the Hardware view path will be used.

For VibroSight Mimic and VibroSight Vision, if there is no corresponding configuration object, the Vision object will be removed.

For VibroSight Mimic, if there is no corresponding configuration object, the Mimic object will be kept but without the associated data.

Parent topic: [Managing VibroSight Vision projects](#)

Related concepts

[Data source](#)

Related reference

[VibroSight Data Sources Selection dialog box](#)

Previewing a VibroSight Vision plot or a project view to be printed

A single plot (the active VibroSight Vision plot) or multiple plots (all of the plots in the active VibroSight Vision project view) can be printed from the VibroSight Vision project user interface.

The Print Preview command is used to display the Print Preview window, which provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer. The Print Preview window allows selection and customisation of the document to be printed and its page setup. It also allows the document to be printed to be exported or emailed.

Note:

The VibroSight Vision Project Explorer tool window can be used to select the active VibroSight Vision plot and/or the active VibroSight Vision project view.

Click the File > Print Preview menu command.

The Print Preview window is displayed.

- [Selecting a VibroSight Vision plot or a project view to print in the Print Preview window](#)
The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.
- [Printing a VibroSight Vision plot or a project view from the Print Preview window](#)
The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.
- [Changing the page setup of a VibroSight Vision plot or a project view to print in the Print Preview window](#)
The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.
- [Scaling the plots in a VibroSight Vision plot or a project view to print in the Print Preview window](#)
The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.
- [Panning the plots in a VibroSight Vision plot or a project view to print in the Print Preview window](#)
The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.
- [Zooming the plots in a VibroSight Vision plot or a project view to print in the Print Preview window](#)
The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.
- [Adding a watermark to a VibroSight Vision plot or a project view in the Print Preview window](#)
The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.
- [Exporting a VibroSight Vision plot or a project view from the Print Preview window](#)

The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.

- [Sending a VibroSight Vision plot or a project view as an email from the Print Preview window](#)

The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.

- [Closing the Print Preview window](#)

The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.

Selecting a VibroSight Vision plot or a project view to print in the Print Preview window

The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.

A drop-down list box on the Print Preview window toolbar is used to select either the active plot (a single plot) or the active view (all of the plots contained in the active project view) as the document to be printed.

Use the drop-down list box on the toolbar to select either the Active Plot (a single plot) or the Active View (one or more plots) as the document to be printed.

The contents of the Print Preview window updates to display the plots of the document to be printed.

Parent topic: [Previewing a VibroSight Vision plot or a project view to be printed](#)

Printing a VibroSight Vision plot or a project view from the Print Preview window

The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.

The Print and the Quick Print commands in the Print Preview window are used to send the active VibroSight Vision plot or the active VibroSight Vision project view to a printer.

1. To print using a print dialog box to change the print job settings, click either the File > Print... menu command or the  Print toolbar button. Use the Print dialog box that is displayed to change the print job settings, then click OK to print the document.
2. To print using the previously configured print job settings, click either the File > Print menu command or the  Quick Print toolbar button.

The document (active plot or active project view) as displayed in the Print Preview window is sent to the printer.

Parent topic: [Previewing a VibroSight Vision plot or a project view to be printed](#)

Changing the page setup of a VibroSight Vision plot or a project view to print in the Print Preview window

The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.

The Page Setup command in the Print Preview window is used to change the page layout of the document to be printed, for example, margins, orientation and paper size.

1. Click the File > Page Setup menu command or the  Page Setup toolbar button.

The Page Setup dialog box is displayed.

2. In the Page Setup dialog box, configure the paper size, orientation and margins as required, then click OK to apply the changes to the print job.

The plots in the document to be printed are automatically resized to use the maximum display area available on a single page (depending on the page layout settings).

Parent topic: [Previewing a VibroSight Vision plot or a project view to be printed](#)

Scaling the plots in a VibroSight Vision plot or a project view to print in the Print Preview window

The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.

A toolbar button on the Print Preview window toolbar is used to scale the plot or plots contained in the document to be printed.

1. Click the  Scale toolbar button.

The Scaling dialog box is displayed.

2. In the Scaling dialog box, scale the size of the plots by specifying either a % of their normal size (% normal size) or an integer number of page widths (pages wide). Click OK to apply the settings. Adjust to 100 % normal size is the default setting and ensures that the plots in the document to be printed are automatically resized to use the maximum display area available on a single page (depending on the page layout settings).

The plots in the document to be printed are resized to use the required number of pages, (depending on the page layout settings).

Parent topic: [Previewing a VibroSight Vision plot or a project view to be printed](#)

Panning the plots in a VibroSight Vision plot or a project view to print in the Print Preview window

The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.

A toolbar button on the Print Preview window toolbar is used to enable panning for the plot or plots contained in the document to be printed.

Panning can be used as an alternative to scroll boxes to navigate around the document to be printed. It is particularly useful when the document to be printed has been zoomed.

1. Click the  Hand Tool toolbar button to enable panning.

The pointer will change to a  when panning is enabled (and the  toolbar button is displayed against a darker background).

2. When panning is enabled, click on the document to be printed and drag the pointer to a new location to navigate around the document by panning.
3. Click the  Hand Tool toolbar button again to disable panning.

The pointer will return to normal (and the  toolbar button is displayed against the normal background).

Parent topic: [Previewing a VibroSight Vision plot or a project view to be printed](#)

Zooming the plots in a VibroSight Vision plot or a project view to print in the Print Preview window

The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.

Toolbar buttons on the Print Preview window toolbar are used to enable zooming for the plot or plots contained in the document to be printed.

Zooming can be used to display the document to be printed on the screen larger or smaller than it actually is. That is, the entire page is displayed larger or smaller (the scale of the plot or plots contained in the document to be printed does not change).

1. To zoom out on the document to be printed, click the  Zoom Out toolbar button.

The document to be printed is displayed smaller on the screen. Click  Zoom Out again to display it even smaller.

2. To zoom in on the document to be printed, click the  Zoom In toolbar button.

The document to be printed is displayed larger on the screen. Click  Zoom In again to display it even larger.

3. A pre-defined selection of common zoom sizes (for example, 75%, 100%, Page Width and Whole Page) is available from the  100% Zoom drop-down combo box, or any required percentage can be typed.

Parent topic: [Previewing a VibroSight Vision plot or a project view to be printed](#)

Adding a watermark to a VibroSight Vision plot or a project view in the Print Preview window

The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.

The Watermark command in the Print Preview window is used to add a watermark (text or picture) to the document to be printed. It is also used to remove a previously added watermark.

1. To add a watermark to the document to be printed, click either the Background > Watermark menu command or the  Watermark toolbar button.

The Watermark dialog box is displayed.

2. In the Watermark dialog box, use the Text Watermark tab or the Picture Watermark tab to configure the type of watermark to add to the document to be printed.
Note:

Only one watermark can be applied to the document to be printed at any one time.

On the Text Watermark tab, a pre-defined selection of common watermark text (for example, CONFIDENTIAL, COPY and DRAFT) is available from the Text drop-down combo box, or any required text can be typed.

3. A previously added watermark can be removed by clicking the Clear All button.
Note:

Only one watermark can be applied to the document to be printed at any one time.

On the Text Watermark tab, a pre-defined selection of common watermark text (for example, CONFIDENTIAL, COPY and DRAFT) is available from the Text drop-down combo box, or any required text can be entered.

The document (active plot or active project view) as displayed in the Print Preview window is updated to include the configured watermark.

Parent topic: [Previewing a VibroSight Vision plot or a project view to be printed](#)

Exporting a VibroSight Vision plot or a project view from the Print Preview window

The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.

The Export Document command in the Print Preview window is used to export the contents of the document to be printed as an image file or as a .pdf document.

1. To export the contents of the document to be printed as an image file:
 - a. Click either the File > Export Document > Image File menu command or use the  Export Document toolbar button.

The Image Export Options dialog box is displayed.

- b. In the Image Export Options dialog box, configure the required settings for the image file or files (defined by Export Mode), then click OK to continue.

A Save As dialog box is displayed.

- c. Use the Save As dialog box to navigate the folders on the computer and select in which folder and under what file name to save the image file or files, then click Save.
2. To export the contents of the document to be printed as a .pdf document:
 - a. Click either the File > Export Document > PDF File menu command or use the  Export Document toolbar button.

The PDF Export Options dialog box is displayed.

- b. In the PDF Export Options dialog box, configure the required settings for the pdf document, then click OK to continue.

A Save As dialog box is displayed.

- c. Use the Save As dialog box to navigate the folders on the computer and select in which folder and under what file name to save the pdf document, then click Save.

Parent topic: [Previewing a VibroSight Vision plot or a project view to be printed](#)

Related tasks

[Exporting a VibroSight Vision plot](#)

[Exporting a VibroSight Vision view](#)

[Generating a VibroSight Vision report](#)

Sending a VibroSight Vision plot or a project view as an email from the Print Preview window

The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.

The Send via E-Mail command in the Print Preview window is used to send the contents of the document to be printed as an email attachment (image file or .pdf document).

1. To send the contents of the document to be printed as an image file attached to an email:
 - a. Click either the File > Send via E-Mail > Image File menu command or use the  Send via E-Mail toolbar button.

The Image Export Options dialog box is displayed.

- b. In the Image Export Options dialog box, configure the required settings for the image file or files (defined by Export Mode), then click OK to continue.

A Save As dialog box is displayed.

- c. Use the Save As dialog box to navigate the folders on the computer and select in which folder and under what file name to save the image file or files, then click Save.
- d. The default email program on the computer will be used to create a new email with the image file or files attached.
2. To send the contents of the document to be printed as a .pdf document attached to an email:
 - a. Click either the File > Send via E-Mail > PDF File menu command or use the  Send via E-Mail toolbar button.

The PDF Export Options dialog box is displayed.

- b. In the PDF Export Options dialog box, configure the required settings for the pdf document, then click OK to continue.

A Save As dialog box is displayed.

- c. Use the Save As dialog box to navigate the folders on the computer and select in which folder and under what file name to save the pdf document, then click Save.
- d. The default email program on the computer will be used to create a new email with the pdf document attached.

Parent topic: [Previewing a VibroSight Vision plot or a project view to be printed](#)

Closing the Print Preview window

The VibroSight Vision Print Preview window provides complete control over print operations and allows print jobs to be previewed before they are sent to a printer.

The user will not be prompted to save any unsaved changes in the Print Preview window before continuing.

Click either the File > Exit menu command, the  Exit toolbar button or the  Close button in the Print Preview window's title bar.

The VibroSight Vision Print Preview window is closed and the VibroSight Vision Project is displayed.

Parent topic: [Previewing a VibroSight Vision plot or a project view to be printed](#)

Printing a VibroSight Vision plot or a project view

A single plot (the active VibroSight Vision plot) or multiple plots (all of the plots in the active VibroSight Vision project view) can be printed from the VibroSight Vision project user interface.

The Print command is used to send the active VibroSight Vision plot or the active VibroSight Vision project view to a printer.

Note:

The VibroSight Vision Project Explorer tool window can be used to select the active VibroSight Vision plot and/or the active VibroSight Vision project view.

1. Click the File > Print menu command.

A Print dialog box is displayed.

2. In the Print dialog box, under Printer, Print range and Copies, configure the parameters as usual for the print job.
3. In the Print dialog box, under Print what, select either Active plot to print the active plot (a single plot) or Active view to print all of the plots contained in the active project view (one or more plots).
4. In the Print dialog box, click OK to print the document (active plot or active project view).

If required, click Preview to display the Print Preview window, which allows the print job to be previewed. The Print Preview window also provides complete control over a print job, such as customisation of the document to be printed and page setup. The document to be printed can also be exported or emailed using the Print Preview window.

Exiting VibroSight Vision

VibroSight Vision can be exited (closed) from the VibroSight Vision Home page (no project is open) or the VibroSight Vision project user interface (a project is open).

The user will be prompted to save any unsaved changes in an open VibroSight Vision project before being able to continue.

Note:

The VibroSight Vision title bar includes an asterisk (*) after the name of the project if there have been changes to the project since it was last saved.

Click either the File > Exit menu command or the  Close button in the VibroSight Vision title bar.

VibroSight Vision is closed.

Note:

The File > Close Project menu command in the VibroSight Vision title bar will close an open VibroSight Vision project, leaving the VibroSight Vision session running.

Related tasks

[Closing a VibroSight Vision project](#)

Copying a VibroSight project to another computer

A VibroSight project can easily be copied to another computer for a VibroSight Server operating without a data source name (DSN), as all of the information relevant to a VibroSight Vision project is stored in the VibroSight Vision project files.

To copy a VibroSight project to another computer, the VibroSight Server configuration and database files (*.vssrvcfg and *.vssrddb), and the VibroSight Vision project files (*.vsvision) must be copied to the target computer:

1. Copy the VibroSight Server configuration file (*.vssrvcfg) and the VibroSight Server database file (*.vssrddb) for the VibroSight project from the source computer to the target computer.

Note:

The default location for VibroSight database files is VibroSight's default data folder (data path directory), typically, C:\VibroSight Data

The VibroSight System Manager Database  Copy or  Backup command can be used to generate a copy of the VibroSight database on the source computer to copy to the target computer.

2. Copy the VibroSight Vision project files (*.vsvision) for the VibroSight project from the source computer to the target computer.
3. On the target computer, start VibroSight Server using the copied database and start VibroSight Vision using the copied VibroSight Vision project.
4. In the VibroSight Vision running on the target computer, change the data source for the VibroSight Vision project to use the copied VibroSight Server (also on the target computer).

This is all that needs to be done if the VibroSight project will be used with the historical data that exists in the VibroSight Server database.

However, if the VibroSight project is required to be used with live data from different hardware, then it is necessary to use VibroSight Configurator to modify the VibroSight Server configuration to use the correct serial numbers and IP addresses corresponding to the hardware being used. For example, start the VibroSight Server, then start VibroSight Configurator and use it to modify and activate the configuration being used by the VibroSight Server.

Note:

If the VibroSight software on the target computer is more recent than the VibroSight software on the source computer, it is often necessary to update the database using the Database  Update command in VibroSight System Manager in order to ensure that the database is compatible with the version of the VibroSight software being used.

A message is displayed if any database components are too old and not compatible with the version of VibroSight Server being used.

Related concepts

[VibroSight Vision session management](#)

[VibroSight Vision projects](#)

[DSN-free operation](#)

Related tasks

[Changing the data source for a VibroSight project](#)

Viewing measurement data in a VibroSight Vision project

Measurement data is viewed in a VibroSight Vision project by displaying the measurement data (data entities) in a plot. Each plot added to a VibroSight Vision project is displayed as a tabbed document in the main working area in the centre of the VibroSight Vision project user interface. Adding a plot to a VibroSight Vision project is as simple as selecting the measurement data to view (the "what") and the time range to use (the "when").

- [Selecting the measurement data to view in a VibroSight Vision plot](#)

The measurement data (the "what") to view in a VibroSight Vision plot is selected using either the Machinery View tool window or the Hardware View tool window.

- [Selecting the time range data to use for a VibroSight Vision plot](#)

The time range (the "when") to use for a VibroSight Vision plot is selected using either the Time Range tool window.

- [Selecting the VibroSight Vision plot to view](#)

When a VibroSight Vision plot contains multiple document windows (plots), it becomes necessary to switch between the document windows in order to select a plot as the active plot and display it.

Selecting the measurement data to view in a VibroSight Vision plot

The measurement data (the “what”) to view in a VibroSight Vision plot is selected using either the Machinery View tool window or the Hardware View tool window.

The Machinery View and Hardware View tool windows are on the left of the VibroSight Vision project user interface (by default). Both tool windows operate in the same way and either can be used to select the same measurements to view.

Note:

The hierarchical tree structure displayed in the Hardware View of a VibroSight Vision project corresponds to the Hardware View information entered in VibroSight Configurator. This describes the configuration in terms of the user machinery that is actually being monitored: such as the VibroSight Server, VM600 racks and XMx16 cards, and VibroSmart DMS measurement blocks and devices. The Hardware View is typically more useful when commissioning a VibroSight-based system.

The hierarchical tree structure displayed in the Machinery View of a VibroSight Vision project corresponds to the Machinery View information entered in VibroSight Configurator. This describes the configuration in terms of the facility units (typically buildings) that house the machinery, machine units (such as a turbine), shafts, stages, bearing planes and ultimately the measurement points. This view is typically more useful when using the VibroSight-based system to perform condition monitoring.

To select measurement data in the Machinery View or Hardware View tool window, the upper pane is used to select a node or nodes in the hierarchical tree structure, effectively filtering the measurements displayed in the lower pane. Then the lower pane is used to select the measurement or measurements to plot.

To select the measurement data (the “what”) to view in a VibroSight Vision plot:

1. In the top pane of the Machinery View (or Hardware View) tool window, click the highest node (the root node) in the hierarchical tree structure to select it.

The row of the selected node is shown against a shaded background to show that it has been selected and the bottom pane of the Machinery View window displays all of the measurements available for all of the nodes under the selected node.

Note:

The bottom pane of the Machinery View (or Hardware View) tool window contains columns that provide information on the measurements: an icon indicating the type of measurement (data entity), the measurement name (Measurement) and the number of measurements available (Qty). The number of measurements available counts the same types of measurement with the same name that are available in the hierarchical tree structure under the node selected in the top pane of the Machinery View window. Each of these columns allow the measurements available to be sorted in ascending/descending order by clicking on the title of the column.

2. A measurement in the bottom pane of the Machinery View (or Hardware View) tool window can be selected to be viewed in a VibroSight Vision plot number of different ways. For each way, all of the measurements available (Qty) for the selected measurement will be used in the plot. If no default VibroSight Vision plot that is compatible with the type of measurement (data entity) selected exists in the active VibroSight Vision project view, then the selected measurement can be added to a new default plot in one of the following ways:
 - o Double-click on the measurement.

Note:

In the status bar (bottom of VibroSight Vision window), a message appears when the pointer is over the measurements in the bottom pane of the Machinery View or Hardware View tool window to remind the user how to add a measurement to a plot in this way.

- o Right-click on the measurement and click Add to new plot.

Alternatively, the selected measurement can be added to a new compatible plot in the following way:

- o Either the File > Add new plot command or the appropriate plotting toolbar button can be used to add a new VibroSight Vision plot that is compatible with the type of measurement, then the measurement can be dragged to the plot.

As a result, a new VibroSight Vision plot that is compatible with the type of measurement is added to the project view, the plot becomes the active plot, and the measurement data is added to the plot.

If a default VibroSight Vision plot that is compatible with the type of measurement (data entity) selected exists in the active VibroSight Vision project view, then the selected measurement can be added to this plot in one of the following ways:

- o ALT+double-click on the measurement.

Note:

In the status bar (bottom of VibroSight Vision window), a message appears when the pointer is over the measurements in the bottom pane of the Machinery View or Hardware View tool window to remind the user how to add a measurement to a plot in this way.

- o Right-click on the measurement and click Add to Plot.
- o Drag the measurement to the plot.

As a result, the last used default VibroSight Vision plot that is compatible with the type of measurement becomes the active plot, and the selected measurement data is added to the existing measurement data in the plot.

If a default VibroSight Vision plot that is compatible with the type of measurement (data entity) selected exists in the active VibroSight Vision project view, then the selected measurement can be replaced in this plot in one of the following ways:

- o Double-click on the measurement.

Note:

In the status bar (bottom of VibroSight Vision window), a message appears when the pointer is over the measurements in the bottom pane of the Machinery View or Hardware View tool window to remind the user how to add a measurement to a plot in this way.

- o Right-click on the measurement and click Replace in Plot.

As a result, the last used default VibroSight Vision plot that is compatible with the type of measurement becomes the active plot, any existing measurement data in the plot is removed, and the selected measurement data is added to the plot.

Note:

The measurements displayed in the active plot and the nodes in the hierarchical tree structure that contain those measurements are displayed in bold black text in the Machinery View and Hardware View tool windows.

CTRL+click or SHIFT+click can be used to select multiple elements in the top pane and the in bottom pane of the Machinery View and Hardware View tool windows.

Both the measurement data to view (the “what”) and the time range to use (the “when”) must be selected in a VibroSight Vision project in order to display data in a VibroSight Vision plot.

Parent topic: [Viewing measurement data in a VibroSight Vision project](#)

Selecting the time range data to use for a VibroSight Vision plot

The time range (the “when”) to use for a VibroSight Vision plot is selected using either the Time Range tool window.

The Time Range tool window is on the right of the VibroSight Vision project user interface (by default).

To Time Range tool window is used to select the time range to use for a VibroSight Vision project. TBCTBC, effectively filtering the measurements displayed in the lower pane. The lower pane is used to select a measurement or measurements to plot.

Note:

The selected time range is shared by all plots (and views) in a VibroSight Vision project. That is, when the time range is changed, all plots will be updated to use the new time range.

To select the time range (the “when”) to use for a VibroSight Vision plot:

1. In the top pane of the Machinery View window (left), click the highest node (the root node) in the hierarchical tree structure to select it.

The bottom pane of the Machinery View window displays all of the measurements available for all of the nodes under the root node.

2. In the bottom pane of the Machinery View window (left), double-click Speed 1/rev in the list of measurements to select it (the “what”).

A new trend plot is displayed for the Speed 1/rev measurement in the main working area of VibroSight Vision (centre). A trend plot is automatically selected as Speed 1/rev is a scalar measurement (data entity) and the default plot type for a scalar measurement is a trend plot.

Note:

The selected measurement is displayed in black text in the Machinery View window to show that it has been selected and is being used in the currently active plot.

However, no data is displayed in the plot as a time range has not been specified yet.

3. In the Time Range window (right), double-click on the first Machine state listed, then hold down the CTRL key and double-click on the last Machine state listed, in order to select all of the available machine states (the “when”).

The trend plot is updated to display the measurement for the selected time range.

Note:

The selected machine states are displayed in black text in the Time Range window to show that they have been selected and are being used in the currently active plot.

4. In the bottom pane of the Machinery View window (left), ALT+double-click OVR (the overall vibration level) in the list of measurements to add these measurements to the existing Speed 1/rev in the currently active plot.

The trend plot is updated to display the add it on al measurements, for the previously selected time range.

Note:

The additional measurements are also displayed in black text in the Machinery View window to show that they have been selected and are being used in the currently active plot.

Note:

In the status bar (bottom of VibroSight Vision window), a message appears when the pointer is over the measurements in the bottom pane of the Machinery View window to remind the user how to add a measurement to a plot:

- o Double-click to replace the data in the plot with the selected measurement.
- o ALT+double-click to add the selected measurement to the existing data in the plot.

5. In the bottom pane of the Machinery View window (left), double-click NOT 1X (the overall vibration level excluding the 1X component) in the list of measurements to replace all of the existing measurements in the currently active plot with the selected measurement.

The trend plot is updated to display the newly selected measurements for the previously selected time range, removing any existing measurements.

Note:

Only the newly selected measurements are displayed in black text in the Machinery View window to show that only they have been selected and are being used in the currently active plot.

Parent topic: [Viewing measurement data in a VibroSight Vision project](#)

Selecting the VibroSight Vision plot to view

When a VibroSight Vision plot contains multiple document windows (plots), it becomes necessary to switch between the document windows in order to select a plot as the active plot and display it.

Selecting a document window (plot) makes it the active document and displays it at the front of the window layout (hiding other plots). In the main working area (tabbed document area) in the centre of the VibroSight Vision project user interface, a document window can be selected as the active document window in many ways: clicking the document window's title tab; clicking the Window menu command, then clicking the name of the document window; clicking the  Show Window List, then clicking the name of the document window; or using the Project Explorer tool window.

The Project Explorer tool window is on the right of the VibroSight Vision project user interface (by default). It is used to select between VibroSight Vision project views and the document windows (plots) that are contained in the project views.

When a new VibroSight Vision project is created, it contains one empty project view (*Default View*) to which document windows (plots) are added. To help organize the plots in a VibroSight Vision project, additional views can be added as containers for additional plots (like folder and files in a Windows Explorer).
Note:

The selected time range is shared by all plots (and views) in a VibroSight Vision project. So even when a new plot is added or a different plot is selected, it uses the same time range as all of the other plots in a VibroSight Vision project.

To select a VibroSight Vision plot as the active plot and view it:

In the Project Explorer window (right), double-click a plot.

The plot becomes the active plot and is displayed at the front of the window layout in the main working tabbed document area of the VibroSight Vision project.

Note:

The active plot is indicated by bold black text in the document window's title tab. The Project Explorer tool window also displays the name of the active plot and the name of the project view that contains the plot in bold black text.

Parent topic: [Viewing measurement data in a VibroSight Vision project](#)

Related tasks

[Selecting a document window](#)

Working with VibroSight windows

VibroSight implements a flexible docking framework that allows the user to change the default arrangement and behaviour of the windows that form part of the user interfaces for the various VibroSight software modules. The windows supported by the docking framework includes tool windows in the VibroSight software modules and the document windows (plots) in VibroSight Vision.

- [Working with VibroSight tool windows](#)
VibroSight tool windows are the fixed part of the user interfaces for the various VibroSight software modules and are typically used to provide easy access to the most important ways of seeing and working with the data available in a VibroSight-based condition monitoring application. The tool windows available depend on the VibroSight software module. For example, in the VibroSight Vision project user interface, the tool windows are the Machinery View, the Hardware View, the Time Range and the Project Explorer.
- [Working with VibroSight Vision document windows](#)
VibroSight Vision document windows (plots) are the flexible part of the VibroSight Vision interface and provide the main working area in the centre of the VibroSight Vision project. These document windows are used to display measurement data as plots in tabbed documents whose layout can be rearranged.
- [Resizing windows](#)
Most of the windows that form part of the user interfaces for the various VibroSight software modules can be resized.
- [Saving VibroSight Vision window layouts](#)
VibroSight Vision implements session management in order to ensure that when a VibroSight Vision project is opened, it is in the same state as it was when last saved. This includes the arrangement of the windows used in the project, so saving a VibroSight Vision project automatically saves the window layout used in the project.

Working with VibroSight tool windows

VibroSight tool windows are the fixed part of the user interfaces for the various VibroSight software modules and are typically used to provide easy access to the most important ways of seeing and working with the data available in a VibroSight-based condition monitoring application. The tool windows available depend on the VibroSight software module. For example, in the VibroSight Vision project user interface, the tool windows are the Machinery View, the Hardware View, the Time Range and the Project Explorer.

- [Hiding and displaying tool windows](#)
Tool windows can easily be hidden, for example, in order to maximize the screen area given to other windows, and displayed to start using a tool window again.
- [Docking and floating tool windows](#)
Tool windows can easily be docked and floated, for example, in order to modify the arrangement of the tool windows.
- [Auto-hiding tool windows](#)
Tool windows can be set to auto-hide so that the tool window is minimized but is automatically displayed as normal whenever the pointer is moved over the window's title tab.
- [Selecting a tool window](#)
A tool window can be selected and made the active tool window in many different ways.
- [Moving a tool window](#)
A tool window can be moved to anywhere on the computer screen as a floating window, or to an edge (left, right, top or bottom) of the VibroSight window that contains the tool as a docked window.

Parent topic: [Working with VibroSight windows](#)

Hiding and displaying tool windows

Tool windows can easily be hidden, for example, in order to maximize the screen area given to other windows, and displayed to start using a tool window again.

1. To hide a tool window, either click the  Close button on the title bar of the tool window or right-click on the title bar of the tool window and click Close.
2. To view a tool window, click the View menu command, then click the name of the tool window to display.

Parent topic: [Working with VibroSight tool windows](#)

Docking and floating tool windows

Tool windows can easily be docked and floated, for example, in order to modify the arrangement of the tool windows.

1. To dock a floating tool window, either double-click the title bar of the tool window or right-click on the title bar of the tool window and click Dock.

The tool window will be docked at the position on the screen that was previously used as its docking position. That is, to an edge (left, right, top or bottom) of the VibroSight window that contains the tool window.

2. To float a docked tool window, either double-click the title bar of the tool window or right-click on the title bar of the tool window and click Float.

The tool window will be floated, which allows it to be located anywhere on the display (even outside the VibroSight window that contains the tool window).

Parent topic: [Working with VibroSight tool windows](#)

Auto-hiding tool windows

Tool windows can be set to auto-hide so that the tool window is minimized but is automatically displayed as normal whenever the pointer is moved over the window's title tab.

To set a tool window to auto-hide, it must be docked.

1. To set a tool window to auto-hide, either click the  Auto Hide button on the title bar of the tool window or right-click on the title bar of the tool window and click Auto Hide.

When the pointer is removed from the tool window, the tool window will minimize, leaving a tool window title tab at the edge (left, right, top or bottom) of the user interface corresponding to the docked tool windows position. Whenever the pointer is moved over the tool window's title tab, the tool window will automatically display itself at normal size until the the pointer is removed from the tool window again.

2. To clear auto-hide from a tool window, move the pointer over the tool window's title tab to display it, then click the  Dock button on the title bar of the tool window.

The tool window will be docked at the position on the screen that was previously used as its docking position. That is, to an edge (left, right, top or bottom) of the VibroSight window that contains the tool window.

Parent topic: [Working with VibroSight tool windows](#)

Selecting a tool window

A tool window can be selected and made the active tool window in many different ways.

A tool window can be selected in one of the following ways:

- a. Click the title bar of the tool window (top).
- b. Click the title tab of the tool window (bottom).
- c. Click on an element within the tool window, for example, a node in a hierarchical tree structure.
- d. Click the View menu command, then click the name of the tool window.

The title bar of the selected tool window is displayed in bold text to show that it is the active tool window.

Parent topic: [Working with VibroSight tool windows](#)

Moving a tool window

A tool window can be moved to anywhere on the computer screen as a floating window, or to an edge (left, right, top or bottom) of the VibroSight window that that contains the tool as a docked window.

Note:

In VibroSight Vision, the tool windows are the Hardware View, the Machinery View, the Time Range and the Project Explorer in the VibroSight Vision project user interface.

Tool windows can be moved around the screen in one of the following ways:

1. To move a tool window anywhere on the computer screen as a floating window, drag the title bar of the tool window to a new position. The new position can be anywhere on the displayable screen area.

When the mouse button is released, the tool window remains at the new position.

2. To move a tool window to an edge (left, right, top or bottom) of the VibroSight window that contains the tool as a docked window, drag the title bar of the window to one of the permitted docking positions indicated by the docking arrows around the edges ( left,  right,  top or  bottom) of the VibroSight window.

When the tool window and pointer are moved over a docking arrow, the area of the screen that the tool window being moved would occupy is indicated by a shaded area. When the mouse button is released, the tool window will be positioned in the indicated area.

3. If the title bar of the tool window is dragged to a permitted docking position indicated by a docking arrow, where a tool window is already positioned, an



overlay docking icon is displayed in addition to the docking arrows.

- a. Drag the tool window and pointer to the individual outer docking arrow of the permitted docking positions (closest to the outer edge of the VibroSight window that contains the tool) in order to position the tool window being moved beside the existing tool window but closer to the outer edge of the VibroSight window, as indicated by the shaded area.
- b. Drag the tool window and pointer to one of the outer docking arrows of the overlay docking icon in order to position the tool window being moved beside the existing tool window (to the left or right, above or below), as indicated by the shaded area.
- c. Drag the tool window and pointer to the centre of the overlay docking icon in order to add the tool window being moved to the existing tool window as a separate tab or tabs, as indicated by the shaded area.

When the tool window and pointer are moved over an individual outer docking arrow or an element of the overlay docking icon, the area of the screen that the tool window being moved would occupy is indicated by a shaded area. When the mouse button is released, the tool window will be positioned in the indicated area.

Note:

To separate tool windows that have been overlaid, the title tabs at the bottom of the tool window must be used (as the title bar at the top of the tool window is common to the overlaid tool windows). To separate a tool window, either drag the title tab of the tool window to be separated to a new position outside of the tool window that contains it, or right-click on the title tab of the tool window to be separated and make the tool window floating.

Parent topic: [Working with VibroSight tool windows](#)

Working with VibroSight Vision document windows

VibroSight Vision document windows (plots) are the flexible part of the VibroSight Vision interface and provide the main working area in the centre of the VibroSight Vision project. These document windows are used to display measurement data as plots in tabbed documents whose layout can be rearranged.

- [Adding a document window](#)
A new document window (plot) can be added to a VibroSight Vision project view in different ways.
- [Changing the order of document windows](#)
When a VibroSight Vision project view contains more than one document window (plot), the order of the document windows can be changed.
- [Deleting a document window](#)
A document window (plot) can be deleted from a VibroSight Vision project in different ways.
- [Selecting a document window](#)
A document window (plot) can be selected and made the active document window in many different ways.
- [Moving a document window](#)
When a VibroSight Vision project view contains more than one document window (plot), the document windows can be arranged in horizontal or vertical tab groups within the main working area in the centre of the VibroSight Vision window that contains the tool as a docked window.

Parent topic: [Working with VibroSight windows](#)

Adding a document window

A new document window (plot) can be added to a VibroSight Vision project view in different ways.

When a new document window (plot) is added to a VibroSight Vision project, it is always added to the active project view, as indicated by bold black text in the Project Explorer.

1. If no default VibroSight Vision plot that is compatible with the type of measurement (data entity) selected exists in the VibroSight Vision project view, then the selected measurement can be added to a new default plot in one of the following ways:
 - a. In the bottom pane of the Machinery View or Hardware View tool window, double-click on the measurement.

In the status bar (bottom of VibroSight Vision window), a message appears when the pointer is over the measurements in the bottom pane of the Machinery View or Hardware View tool window to remind the user how to add a measurement to a plot in this way.

- b. In the bottom pane of the Machinery View or Hardware View tool window, right-click on the measurement and click Add to new plot.
 - c. Click the appropriate plotting toolbar button and select a plot that is compatible with the type of measurement, then drag the measurement from the bottom pane of the Machinery View or Hardware View tool window to the plot.
 - d. Click File > Add new plot and select a plot that is compatible with the type of measurement, then drag the measurement from the bottom pane of the Machinery View or Hardware View tool window to the plot.
 - e. In the Project Explorer tool window, right-click on the active project view, click Add new plot and select a plot that is compatible with the type of measurement, then drag the measurement from the bottom pane of the Machinery View or Hardware View tool window to the plot.

If the project view is not the active project view, the Add new plot command will be unavailable (greyed out).

As a result, a new VibroSight Vision plot that is compatible with the type of measurement is added to the project view, the plot becomes the active plot, and the measurement data is added to the plot.

2. If a default VibroSight Vision plot that is compatible with the type of measurement (data entity) selected exists in the active VibroSight Vision project view, then the selected measurement can be added to this plot in one of the following ways:
 - a. In the bottom pane of the Machinery View or Hardware View tool window, ALT+double-click on the measurement.

In the status bar (bottom of VibroSight Vision window), a message appears when the pointer is over the measurements in the bottom pane of the Machinery View or Hardware View tool window to remind the user how to add a measurement to a plot in this way.

- b. In the bottom pane of the Machinery View or Hardware View tool window, right-click on the measurement and click Add to plot.
 - c. Drag the measurement from the bottom pane of the Machinery View or Hardware View tool window to the plot.

As a result, the last used default VibroSight Vision plot that is compatible with the type of measurement becomes the active plot, and the selected measurement data is added to the existing measurement data in the plot.

3. If a default VibroSight Vision plot that is compatible with the type of measurement (data entity) selected exists in the active VibroSight Vision project view, then the selected measurement can be replaced in this plot in one of the following ways:
 - a. In the bottom pane of the Machinery View or Hardware View tool window, double-click on the measurement.

In the status bar (bottom of VibroSight Vision window), a message appears when the pointer is over the measurements in the bottom pane of the Machinery View or Hardware View tool window to remind the user how to add a measurement to a plot in this way.

- b. In the bottom pane of the Machinery View or Hardware View tool window, right-click on the measurement and click Replace in plot.

As a result, the last used default VibroSight Vision plot that is compatible with the type of measurement becomes the active plot, any existing measurement data in the plot is removed, and the selected measurement data is added to the plot.

Note:

The measurements displayed in the active plot and the nodes in the hierarchical tree structure that contain those measurements are displayed in bold black text in the Machinery View and Hardware View tool windows.

CTRL+click or SHIFT+click can be used to select multiple elements in the top pane and the in bottom pane of the Machinery View and Hardware View tool windows.

Both the measurement data to view (the “what”) and the time range to use (the “when”) must be selected in a VibroSight Vision project in order to display data in a VibroSight Vision plot.

Parent topic: [Working with VibroSight Vision document windows](#)

Changing the order of document windows

When a VibroSight Vision project view contains more than one document window (plot), the order of the document windows can be changed.

To change the order of the document windows (plots), drag a document window’s title tab to an adjacent tabbed document position.

When the document window is moved over a permitted tabbed document position, the area of the screen that the document window would occupy is indicated by a shaded area. When the mouse button is released, the document window is moved to the indicated area.

Parent topic: [Working with VibroSight Vision document windows](#)

Deleting a document window

A document window (plot) can be deleted from a VibroSight Vision project in different ways.

The user will be prompted to confirm a deletion before being able to continue.

A document window (plot) can be deleted in one of the following ways:

- Click the  Close button in the document window’s title tab.
- Right-click the document window’s title tab and click Delete to delete the selected document window.
- Right-click the document window’s title tab and click Delete all but this to delete all document windows in the VibroSight Vision project view other than the selected document window.
- In the Project Explorer tool window, right-click on a document window and click Delete.

The document window is deleted from the VibroSight Vision project.

Deleting a document window (plot) permanently removes it from the VibroSight Vision project. However, this does not delete any measurement data stored in the VibroSight Server data base.

Parent topic: [Working with VibroSight Vision document windows](#)

Selecting a document window

A document window (plot) can be selected and made the active document window in many different ways.

A document window (plot) can be selected in one of the following ways:

- Click the title tab at the top of the document window.
- Click the Window menu command, then click the name of the document window.
- Click  Show Window List, then click the name of the document window.

Note:

The  Show Window List control is displayed to the right of the title tabs in the main working area in the centre of the VibroSight Vision project user interface. It is only available when at least one document window (plot) has been added to a project.

- In the Project Explorer tool window, double-click on the plot.

The title bar of the selected document window is displayed in bold text to show that it is the active tool window.

Parent topic: [Working with VibroSight Vision document windows](#)

Related tasks

[Selecting the VibroSight Vision plot to view](#)

Moving a document window

When a VibroSight Vision project view contains more than one document window (plot), the document windows can be arranged in horizontal or vertical tab groups within the main working area in the centre of the VibroSight Vision window that contains the tool as a docked window.

Note:

In the VibroSight Vision, document windows are the plots that are added to the main working area in the centre of the VibroSight Vision project user interface.

Document windows can be arranged in horizontal or vertical tab groups in one of the following ways:

- When no tab groups exist in a VibroSight Vision project view, to create a new horizontal or vertical tab group and add an existing document window to it, drag the title tab of the existing document window to one of the permitted tab group positions indicated by the tab group arrows ( left vertical,  right vertical,  top horizontal or  bottom horizontal) in the centre of the VibroSight window.

When the document window and pointer are moved over a tab group arrow, the area of the screen that the new tab group and document window would occupy is indicated by a shaded area. When the mouse button is released, a new tab group will be created containing the document window in the indicated area.

Alternatively, to create a new horizontal or vertical tab group and add an existing document window to it, right click on the title tab of a document window and click New Horizontal Tab Group or New Vertical Tab Group, as appropriate.

- When tab groups already exist in a VibroSight Vision project view, to move a document window from one tab group to a different tab group, drag the title tab of

the document window being moved to the tab group centre () in the centre of a different tab group.

When the document window and pointer are moved over the tab group centre in a different tab group, the area of the tab group that the document window would occupy (that is, a tabbed document position) is indicated by a shaded area. When the mouse button is released, the document window will be positioned in the indicated area.

Alternatively, to move a document window from one tab group to a different tab group, right click on the title tab of the document window and click Move to Next Tab Group or Move to Previous Tab Group, as appropriate.

- When tab groups already exist in a VibroSight Vision project view, to create a new tab group and add an existing document window to it, drag the title tab of the existing document window to one of the permitted tab group positions indicated by the tab group arrows () left vertical, () right vertical, () top horizontal or () bottom horizontal, depending on the type of the existing tab group in the project view) in the centre of a different tab group.

When the document window and pointer are moved over a tab group arrow, the area of the screen that the new tab group and document window would occupy is indicated by a shaded area. When the mouse button is released, a new tab group will be created containing the document window in the indicated area.

Alternatively, to create a new horizontal or vertical tab group and add an existing document window to it, right click on the title tab of a document window and click New Horizontal Tab Group or New Vertical Tab Group, as appropriate.

Note:

Only one type of tab group can be used in a VibroSight Vision project view at any one time, that is, either horizontal or vertical tab groups.

Note:

When tab groups exist in a VibroSight Vision project, any additional plots added are added to the tab group that contains the active document window, as indicated by bold black text in the document window's title tab.

Parent topic: [Working with VibroSight Vision document windows](#)

Resizing windows

Most of the windows that form part of the user interfaces for the various VibroSight software modules can be resized.

- To resize a docked window, move the pointer over the boundary between two windows (for example, ) – the pointer changes to a  or  – and click and drag the boundary to a new location.

When the mouse button is released, the display will be redrawn with the new boundaries.

- To resize a floating window, move the pointer over any edge or corner boundary of the window – the pointer changes to a ,  or  – and click and drag the boundary to a new location.

When the mouse button is released, the window will be redrawn with the new boundary.

- In general, windows can also be controlled using the standard Windows  Minimize,  Maximize,  Restore and  Close buttons, when they are available.

Parent topic: [Working with VibroSight windows](#)

Saving VibroSight Vision window layouts

VibroSight Vision implements session management in order to ensure that when a VibroSight Vision project is opened, it is in the same state as it was when last saved. This includes the arrangement of the windows used in the project, so saving a VibroSight Vision project automatically saves the window layout used in the project.

Parent topic: [Working with VibroSight windows](#)

Related concepts

[VibroSight Vision projects](#)

[VibroSight Vision session management](#)

Related tasks

[Saving a VibroSight Vision project](#)

Setting Options

VibroSight Vision has a number of settings that you can adjust.

- Choose Tools > Options.

The Options window is displayed.

- Select a category of options in the left hand area of the window, for example "Environment".
- Select an option in the left hand area of the window, for example "Window Layouts"
- Modify the option's properties in the right hand area of the window.
- Click OK to store the updated values.

To specify that "Warning" level detail is recorded in VibroSight Vision's log file:

- Select the Environment category in the left hand area of the window.
- Select the Technical Log Files option in the left hand part of the window.
- Click Warning in the Log Level area of the window.
- Click OK. The log level is modified.

Related reference

[VibroSight Vision Options window](#)

Working with the VibroSight Vision Machinery View tool window

The VibroSight Vision Machinery View tool window provides a view of the underlying structure of a VibroSight-based condition monitoring application in terms of the machinery being monitored. It also allows the measurement data (the “what”) to view in a VibroSight Vision plot to be selected.

The Machinery View tool window is on the left of the VibroSight Vision project user interface beside the Hardware View tool window (by default). Both tool windows operate in the same way and either can be used to select the same measurements to view.

Note:

The hierarchical tree structure displayed in the Machinery View of a VibroSight Vision project corresponds to the Machinery View information entered in VibroSight Configurator. This describes the configuration in terms of the user machinery that is actually being monitored: such as facility units (typically buildings) that house the machinery, machine units (such as a turbine), shafts, stages, bearing planes and ultimately the measurement points. This view is typically more useful when using the VibroSight-based system to perform condition monitoring.

- [VibroSight Vision Machinery View tool window and the docking framework](#)
VibroSight implements a flexible docking framework that allows the user to change the default arrangement and behaviour of tool windows such as the VibroSight Vision Machinery View.
- [Using the top pane of the VibroSight Vision Machinery View tool window](#)
When working with the VibroSight Vision Machinery View tool window, the top pane must be navigated and nodes selected in order to display measurements in the bottom pane.
- [Using the bottom pane of the VibroSight Vision Machinery View tool window](#)
When working with the VibroSight Vision Machinery View tool window, bottom pane must be navigated and measurements selected in order to be able to display data in VibroSight Vision plots.
- [Using the search bar of the VibroSight Vision Machinery View tool window](#)
When working with the VibroSight Vision Machinery View tool window, the search bar can be used to selectively filter the nodes displayed in the top pane. As the measurements displayed in the bottom pane depend on the nodes in the top plane, this simplifies the search for measurements, and is particularly useful with larger configurations.

VibroSight Vision Machinery View tool window and the docking framework

VibroSight implements a flexible docking framework that allows the user to change the default arrangement and behaviour of tool windows such as the VibroSight Vision Machinery View.

The Machinery View tool window is on the left of the VibroSight Vision project user interface beside the Hardware View tool window (by default).

Parent topic: [Working with the VibroSight Vision Machinery View tool window](#)

Related tasks

[Hiding and displaying tool windows](#)

[Docking and floating tool windows](#)

[Auto-hiding tool windows](#)

[Selecting a tool window](#)

[Moving a tool window](#)

[Resizing windows](#)

[Saving VibroSight Vision window layouts](#)

Using the top pane of the VibroSight Vision Machinery View tool window

When working with the VibroSight Vision Machinery View tool window, the top pane must be navigated and nodes selected in order to display measurements in the bottom pane.

1. To navigate up and down through the nodes in the hierarchical tree structure in the top pane and select a node, click the node. Alternatively, the UP ARROW and the DOWN ARROW keyboard shortcuts can be used.

The row of the selected node is shown against a shaded background to show that it has been selected and the bottom pane of the Machinery View window displays all of the measurements available for all of the nodes under the selected node.

Note:

CTRL+click or SHIFT+click can be used to select multiple nodes in the top pane of the Machinery View tool window.

2. To collapse or expand a node in the hierarchical tree structure in the top pane, click the  Collapse All or the  Expand All icon to the left of the node, or right-click the node and click either Collapse All or Expand All. Alternatively, the LEFT ARROW or the RIGHT ARROW keyboard shortcuts can be used.

Note:

Double-clicking a node in the top pane will not change its collapsed or expanded state.

Parent topic: [Working with the VibroSight Vision Machinery View tool window](#)

Related tasks

[Using the bottom pane of the VibroSight Vision Machinery View tool window](#)

Related reference

[VibroSight Vision Machinery View and Hardware View keyboard shortcuts and mouse shortcuts](#)

Using the bottom pane of the VibroSight Vision Machinery View tool window

When working with the VibroSight Vision Machinery View tool window, bottom pane must be navigated and measurements selected in order to be able to display data in VibroSight Vision plots.

1. To navigate up and down through the measurements listed in the bottom pane and select a measurement, click the measurement. Alternatively, the UP ARROW and the DOWN ARROW keyboard shortcuts can be used.

The row of the selected measurement is shown against a shaded background to show that it has been selected.

Note:

CTRL+click or SHIFT+click can be used to select multiple measurements in the bottom pane of the Machinery View tool window.

2. To sort the measurements listed in the bottom panel, click the title of a column to sort the measurements by the contents of that column.
 - a. To sort the measurements by the type of measurement (data entity), click the title of the first column (above the measurement icons).
 - b. To sort the measurements by the measurement name, click the title of the Measurement column.
 - c. To sort the measurements by the number of measurements available, click the title of the Qty column.
 - d. To sort the contents of a column in reverse order, click the title of the column again.
3. To selectively filter the measurements listed in the bottom panel, click the ☒ thumbtack icon which appears (to the right) when the pointer is over the title of a column to selectively filter the measurements by the contents of that column.
 - a. To selectively filter the measurements by the type of measurement (data entity), click the ☒ thumbtack icon which appears in the title of the first column (above the measurement icons).

The default is Select All. Clear or select individual types of measurement by clicking their check boxes (or clear or select Select All). Click OK to confirm any changes.

- b. To selectively filter the measurements by the measurement name, click the ☒ thumbtack icon which appears in the title of the Measurement column.

The default is Select All. Clear or select individual measurement names by clicking their check boxes (or clear or select Select All). Click OK to confirm any changes.

A measurement listed in the bottom pane of the Machinery View tool window can be added to a VibroSight Vision plot in a number of different ways. All of the measurements available (listed under Qty) for the selected measurement will be used in the plot.

Parent topic: [Working with the VibroSight Vision Machinery View tool window](#)

Related tasks

[Using the top pane of the VibroSight Vision Machinery View tool window](#)

Related reference

[VibroSight Vision Machinery View and Hardware View keyboard shortcuts and mouse shortcuts](#)

Using the search bar of the VibroSight Vision Machinery View tool window

When working with the VibroSight Vision Machinery View tool window, the search bar can be used to selectively filter the nodes displayed in the top pane. As the measurements displayed in the bottom pane depend on the nodes in the top plane, this simplifies the search for measurements, and is particularly useful with larger configurations.

1. To search for a term, click in the text box of the search bar and type the search term.

Note:

The search icon in the search bar (right) changes from 🔍 to ✖ to indicate that there is an active search.

The search immediately starts looking for the term entered and the contents of the hierarchical tree structure in the top pane of the VibroSight Vision Machinery View tool window updates.

Only nodes that contain the search term, together with their parent and child nodes, are displayed in the top pane of the VibroSight Vision Machinery View tool. The measurements that in the bottom pane of the VibroSight Vision Machinery View tool are accordingly selectively filtered.

2. To clear the active search, either click on the ✖ in the search bar or remove the search term from the text box of the search bar by deleting the text.

Note:

The search icon in the search bar (right) changes from ✖ to 🔍 to indicate that there is no active search.

Parent topic: [Working with the VibroSight Vision Machinery View tool window](#)

Working with the VibroSight Vision Hardware View tool window

The VibroSight Vision Hardware View tool window provides a view of the underlying structure of a VibroSight-based condition monitoring application in terms of the VibroSight-based hardware. It also allows the measurement data (the “what”) to view in a VibroSight Vision plot to be selected.

The Hardware View tool window is on the left of the VibroSight Vision project user interface beside the Machinery View tool window (by default). Both tool windows operate in the same way and either can be used to select the same measurements to view.

Note:

The hierarchical tree structure displayed in the Hardware View of a VibroSight Vision project corresponds to the Hardware View information entered in VibroSight Configurator. This describes the configuration in terms of the VibroSight-based monitoring equipment deployed: such as the VibroSight Server, VM600 racks and XMx16 cards, and VibroSmart DMS measurement blocks and devices. The Hardware View is typically more useful when commissioning a VibroSight-based system.

- [VibroSight Vision Hardware View tool window and the docking framework](#)
VibroSight implements a flexible docking framework that allows the user to change the default arrangement and behaviour of tool windows such as the VibroSight Vision Hardware View.
- [Hiding and showing system data in the VibroSight Vision Hardware View tool window](#)
When using the VibroSight Vision Hardware View tool window, system data can be hidden or shown.

VibroSight Vision Hardware View tool window and the docking framework

VibroSight implements a flexible docking framework that allows the user to change the default arrangement and behaviour of tool windows such as the VibroSight Vision Hardware View.

The Hardware View tool window is on the left of the VibroSight Vision project user interface beside the Machinery View tool window (by default).

Parent topic: [Working with the VibroSight Vision Hardware View tool window](#)

Related tasks

[Hiding and displaying tool windows](#)

[Docking and floating tool windows](#)

[Auto-hiding tool windows](#)

[Selecting a tool window](#)
[Moving a tool window](#)
[Resizing windows](#)
[Saving VibroSight Vision window layouts](#)

Hiding and showing system data in the VibroSight Vision Hardware View tool window

When using the VibroSight Vision Hardware View tool window, system data can be hidden or shown.

The system data consists of temperature and voltage information for the VibroSight-based monitoring equipment deployed (VM600 XMx16 cards) and is hidden by default.

1. To show the system data, right-click to the left of or below the hierarchical tree structure in the Hardware View window and click Show System Data.

The hierarchical tree structure is updated with the Device Temperatures and Device Voltages nodes shown under each VM600 XMx16 card.

2. To hide the system data, right-click to the left of or below the hierarchical tree structure in the Hardware View window and click Hide System Data.

The hierarchical tree structure is updated with the Device Temperatures and Device Voltages nodes hidden under each VM600 XMx16 card.

Parent topic: [Working with the VibroSight Vision Hardware View tool window](#)

Working with the VibroSight Vision Time Range tool window

The VibroSight Vision Time Range tool window allows the time range (the “when”) to use for a VibroSight Vision project to be selected. Mutually exclusive historical data modes (machine states mode, alarms mode or custom historical mode) or a live data mode can be used.

When working with historical data modes, the measurement data stored in the VibroSight Server database can be accessed, retrieved and displayed using machine states, alarms or custom historical time ranges (absolute or relative).

When the machine states or alarms historical data modes are used with Trend, Bode, Polar Correlation or Shaft centerline plots, a single measurement (extracted data entity) can be displayed as either:

- A single curve with one entry in the plot legend
- Separate curves based on machine states or alarms, with one entry in the plot legend per curve.

When working with the live data mode, the size and the update rate of the buffer used for measurement data can be configured, the data acquisition by the VibroSight Vision project can be paused and the buffer can be cleared.

The Time Range tool window is on the right of the VibroSight Vision project user interface beside the Project Explorer tool window (by default).

Note:

The selected time range is shared by all plots (and views) in a VibroSight Vision project. That is, when the time range is changed, all plots will use the new time range.

- [VibroSight Vision Time Range tool window and the docking framework](#)
VibroSight implements a flexible docking framework that allows the user to change the default arrangement and behaviour of tool windows such as the VibroSight Vision Time Range.
- [VibroSight Vision Time Range tool window and historical data](#)
When using the historical data modes of the VibroSight Vision Time Range tool window, the measurement data stored in the VibroSight Server database can be accessed, retrieved and displayed using machine states, alarms or custom historical time ranges (absolute or relative).
- [VibroSight Vision Time Range tool window and live data](#)
When using the live data mode of the VibroSight Vision Time Range tool window, the size and the update rate of the buffer used for measurement data can be configured, the data acquisition by the VibroSight Vision project can be paused and the buffer can be cleared.

VibroSight Vision Time Range tool window and the docking framework

VibroSight implements a flexible docking framework that allows the user to change the default arrangement and behaviour of tool windows such as the VibroSight Vision Time Range.

The Time Range tool window is on the right of the VibroSight Vision project user interface beside the Project Explorer tool window (by default).

Parent topic: [Working with the VibroSight Vision Time Range tool window](#)

Related tasks

[Hiding and displaying tool windows](#)
[Docking and floating tool windows](#)
[Auto-hiding tool windows](#)
[Selecting a tool window](#)
[Moving a tool window](#)
[Resizing windows](#)
[Saving VibroSight Vision window layouts](#)

VibroSight Vision Time Range tool window and historical data

When using the historical data modes of the VibroSight Vision Time Range tool window, the measurement data stored in the VibroSight Server database can be accessed, retrieved and displayed using machine states, alarms or custom historical time ranges (absolute or relative).

- [VibroSight Vision Time Range tool window historical data and machine states](#)
When using the machine states historical data mode of the VibroSight Vision Time Range tool window, the measurement data stored in the VibroSight Server database can be accessed, retrieved and displayed in terms of the machine states (machine operating conditions) that the machinery being monitored has experienced.
- [VibroSight Vision Time Range tool window historical data and alarms](#)
When using the alarms historical data mode of the VibroSight Vision Time Range tool window, the measurement data stored in the VibroSight Server database

can be accessed, retrieved and displayed in terms of the severity states (alarms) that the machinery being monitored has experienced.

- [VibroSight Vision Time Range tool window historical data and custom historical](#)

When using the custom historical data mode of the VibroSight Vision Time Range tool window, the measurement data stored in the VibroSight Server database can be accessed, retrieved and displayed in terms of different custom historical time ranges (absolute or relative).

Parent topic: [Working with the VibroSight Vision Time Range tool window](#)

VibroSight Vision Time Range tool window historical data and machine states

When using the machine states historical data mode of the VibroSight Vision Time Range tool window, the measurement data stored in the VibroSight Server database can be accessed, retrieved and displayed in terms of the machine states (machine operating conditions) that the machinery being monitored has experienced.

Note:

Machine operating conditions (machine states) must have been configured (in the Machinery View of the configuration using VibroSight Configurator) and these machine states must have been experienced by the machinery being monitored in order for them to be available for use in the machine states mode of the VibroSight Vision Time Range tool window.

When the machine states historical data mode is used with Trend, Bode, Polar Correlation or Shaft centerline plots, a single measurement (extracted data entity) can be displayed as either:

- A single curve with one entry in the plot legend
- Separate curves based on machine states, with one entry in the plot legend per curve.
- [Using VibroSight Vision in machine states mode](#)
Historical data can be used in a VibroSight Vision project to display the measurement data stored in a VibroSight Server database for a time range defined in terms of the machine states (machine operating conditions) that the machinery being monitored has experienced.
- [Selectively filtering machine states in machine states mode](#)
Using parameters available in the VibroSight Vision Time Range tool window in machine states mode, the machine states grid displayed in the VibroSight Vision Time Range tool window can be configured to selectively filter the machine states listed. This is particularly useful when working with larger databases containing many pages of machine states.
- [Switching from a machine state in machine states mode to custom historical mode](#)
When using the machine states historical data mode of the VibroSight Vision Time Range tool window, an individual machine state can be used to switch to the custom historical mode.
- [Displaying additional information about a machine state in machine states mode](#)
When using the machine states historical data mode of the VibroSight Vision Time Range tool window, additional information about an individual machine state can be displayed.
- [Refreshing the machine states grid in machine states mode](#)
When using the machine states historical data mode of the VibroSight Vision Time Range tool window, the machine states listed in the machine states grid can be refreshed.
- [Hiding and showing machine states in machine states mode](#)
When using the machine states historical data mode of the VibroSight Vision Time Range tool window, the types of machine state listed in the machine states grid can be hidden or shown.

Parent topic: [VibroSight Vision Time Range tool window and historical data](#)

Related concepts

[VibroSight Vision Time Range tool window historical data and alarms](#)

Related tasks

[Lesson 5 - Viewing plotted data as a single curve or separate curves for a single measurement](#)

Using VibroSight Vision in machine states mode

Historical data can be used in a VibroSight Vision project to display the measurement data stored in a VibroSight Server database for a time range defined in terms of the machine states (machine operating conditions) that the machinery being monitored has experienced.

1. To work with historical data in a VibroSight Vision project in machine states mode, select Machine states using the drop-down list box at the top of the VibroSight Vision Time Range tool window.

The VibroSight Vision project immediately switches to machine states mode and the VibroSight Vision Time Range tool window displays a machine states grid that lists the most recent 100 machine states that are available in the VibroSight Server database for the selected machine.

To improve functionality, the machine states displayed in the machine states grid are listed as pages, with each page containing 100 machine states. The 100 most recent machine states are displayed first (reverse chronological order) and other pages can be accessed using buttons at the bottom of the VibroSight Vision Time Range tool window.

Note:

As machine operating conditions (machine states) are configured for the machinery being monitored at the machine level (in the Machinery View of the configuration using VibroSight Configurator), a machine must be selected in the Machinery View or Hardware View, either directly or indirectly, in order for the machine states experienced by that machine to be listed.

2. To see the machine states available for different machines (if used in the VibroSight configuration), use the drop-down list box near the top of the VibroSight Vision Time Range tool window in machine states mode to select a different machine.

The VibroSight Vision Time Range tool window displays a machine states grid that lists the 100 most recent machine states that are available in the VibroSight Server database for the selected machine.

Note:

A machine can be selected directly in the Time Range tool window using the drop-down list box near the top of the VibroSight Vision Time Range tool window in machine states mode, can be selected directly in the Machinery View tool window by selecting a machine unit node or can be selected indirectly in the Hardware View or Machinery View tool windows by selecting other nodes, such as a measurement, that belong to a particular machine.

It is only possible to work with machine states from a single machine, at any one time.

3. Select a machine state or machine states displayed in the machine states grid as the time range for the VibroSight Vision project in one of the following ways:
 - a. To select a single machine state, double-click it.

- b. To select a discontinuous range of machine states, double-click on the first machine state of interest, then CTRL+double-click on any other machine states of interest.
- c. To select a continuous range of machine states, double-click on the first machine state of interest, then SHIFT+double-click on the last machine state of interest.

Note:

Selected machine states are indicated by bold black text in the VibroSight Vision Time Range tool window.

The plots displayed in the main working area as tabbed document windows update to use the data from the VibroSight Server database for the time range corresponding to the selected machine state or states.

Note:

Plots display no measurement data for the time range corresponding to the gaps left by selecting a discontinuous range of machine states.

Parent topic: [VibroSight Vision Time Range tool window historical data and machine states](#)

Selectively filtering machine states in machine states mode

Using parameters available in the VibroSight Vision Time Range tool window in machine states mode, the machine states grid displayed in the VibroSight Vision Time Range tool window can be configured to selectively filter the machine states listed. This is particularly useful when working with larger databases containing many pages of machine states.

When More options is selected in the VibroSight Vision Time Range tool window in machine states mode, additional controls become available that allow the machine states listed in the machine states grid to be selectively filtered. These additional controls operate in parallel, that is, the machine states listed in the machine states grid are selectively filtered by the types of machine state defined and the time range defined.

When Fewer options is selected in the VibroSight Vision Time Range tool window in machine states mode, the additional controls are hidden, although they still selectively filter the machine states listed in the machine states grid.

Note:

The Fewer options / More options button is displayed in bold black text to indicate when the additional controls are not using the default settings, that is, not all types of machine state and not all data (time range) in the VibroSight Server database are selected.

1. To selectively filter the types of machine state by the type of machine state, click the drop-down list box that lists the selected machine states (default: *all types of machine state*), then clear or select individual machine states by name (or clear or select Select All) by clicking their check boxes. Click outside the drop-down list box to confirm any changes.

The drop-down list box displays the selected types of machine state in a comma separated list. The machine states grid displayed by the VibroSight Vision Time Range tool window lists the most recent 100 machine states of the types selected and with the time range defined, that are available in the VibroSight Server database for the selected machine unit.

Note:

The names of the machine states in the drop-down list box are taken from the machine operating conditions (machine states) configured (in the Machinery View) of the configuration using VibroSight Configurator.

2. To selectively filter the types of machine state by time, one of the Relative, Absolute or All Time option buttons can be selected:
 - a. If Relative is selected, controls appears that allow a relative time range (working backwards from now) to be defined by specifying the Last *n* minutes, hours, days, months or years.
 - b. If Absolute is selected, controls appears that allow an absolute time range to be defined by specifying From and To dates and times.

Note:

When changing from Relative time to Absolute time, the relative time settings are converted automatically to the corresponding absolute time settings.

- c. If All is selected, all of the measurement data stored in the VibroSight Server database is used.

The machine states grid displayed by the VibroSight Vision Time Range tool window lists the most recent 100 machine states of the type selected and with the time range defined, that are available in the VibroSight Server database for the selected machine unit.

The selectively filtered machine states displayed in the machine states grid can be used to select the time range for the VibroSight Vision project by double-clicking on one or more machine states.

Parent topic: [VibroSight Vision Time Range tool window historical data and machine states](#)

Switching from a machine state in machine states mode to custom historical mode

When using the machine states historical data mode of the VibroSight VisionTime Range tool window, an individual machine state can be used to switch to the custom historical mode.

This is particularly useful when a machine state of interest is found and the user then wants to view measurement data around the time of this machine state.

To switch from a machine state in machine state mode to custom historical mode, right-click on the machine state in the machine states grid and click Convert to custom historical.

The VibroSight Vision Time Range tool window switches from the machine states mode to custom historical mode with the Time set to Absolute, and with the From and To dates and times automatically set to the dates and times corresponding to the machine state.

For example, the From date and time can be manually set 5 minutes earlier and the To date and time can be set 5 minutes later to see what happened immediately before and after the machine state of interest.

Parent topic: [VibroSight Vision Time Range tool window historical data and machine states](#)

Displaying additional information about a machine state in machine states

mode

When using the machine states historical data mode of the VibroSight VisionTime Range tool window, additional information about an individual machine state can be displayed.

The information displayed for a machine state in the machine states grid consists of the type of the machine state (taken from the machine operating conditions configured in the VibroSight configuration using VibroSight Configurator), the start date and time of the machine state and its duration.

The additional information displayed for a machine state in the on-screen tip includes the finish date and time.

To display additional information about a machine state in machine states mode, move the pointer over the machine state in the machine states grid.

An on-screen tip appears displaying additional information about the machine state.

Parent topic: [VibroSight Vision Time Range tool window historical data and machine states](#)

Refreshing the machine states grid in machine states mode

When using the machine states historical data mode of the VibroSight VisionTime Range tool window, the machine states listed in the machine states grid can be refreshed.

When working in machine states mode, changes to the Time Range tool window settings automatically and immediately affect the contents of the tool window, that is, the machine states listed in the machine states grid.

However, if new measurement and machine state data has been added to the VibroSight Server database since the Time Range tool window settings were last changed, the new machine state information is not included in the machine states grid.

Refreshing the machine states grid ensure that the most recent machine state information is included. When the machine states grid is refreshed, VibroSight Vision communicates with the VibroSight Server database and reloads the machine states defined by the controls in the VibroSight Vision Time Range tool window in machine states mode.

To refresh the machine states listed in the machine states mode, right-click on the machine states grid and click Refresh.

The machine states grid is updated with the most up-to-date machine state information available from the VibroSight Server database defined by the controls in machine states mode.

Parent topic: [VibroSight Vision Time Range tool window historical data and machine states](#)

Hiding and showing machine states in machine states mode

When using the machine states historical data mode of the VibroSight VisionTime Range tool window, the types of machine state listed in the machine states grid can be hidden or shown.

When the types of machine state listed in the machine states grid are hidden or shown, VibroSight Vision does not communicate with the VibroSight Server database and retrieve measurement data based on these changes. It simply hides or shows the machine states previously retrieved from the VibroSight Server database.

1. To hide a type of machine state, right-click on the type of machine state in the machine states grid and click Hide:

The machine states grid is updated with all instances of the selected type of machine state hidden.

2. To show a type of machine state that was previously hidden, right-click on the machine states grid and click Show: ... , selecting the name of the type of machine state to show.

The machine states grid is updated with all instances of the selected type of machine state shown.

Parent topic: [VibroSight Vision Time Range tool window historical data and machine states](#)

VibroSight Vision Time Range tool window historical data and alarms

When using the alarms historical data mode of the VibroSight Vision Time Range tool window, the measurement data stored in the VibroSight Server database can be accessed, retrieved and displayed in terms of the severity states (alarms) that the machinery being monitored has experienced.

Note:

Alarms (severity limits and states) must have been configured (in the Hardware View of the configuration using VibroSight Configurator) and these severity states must have been experienced by the machinery being monitored in order for them to be available for use in the alarms mode of the VibroSight Vision Time Range tool window.

When the alarms historical data mode is used with Trend, Bode, Polar Correlation or Shaft centerline plots, a single measurement (extracted data entity) can be displayed as either:

- A single curve with one entry in the plot legend
- Separate curves based on alarms, with one entry in the plot legend per curve.

- [Using VibroSight Vision in alarms mode](#)

Historical data can be used in a VibroSight Vision project to display the measurement data stored in a VibroSight Server database for a time range defined in terms of the severity states (alarms) that the machinery being monitored has experienced.

- [Selectively filtering severity states in alarms mode](#)

Using parameters available in the VibroSight Vision Time Range tool window in alarms mode, the severity states grid displayed in the VibroSight Vision Time Range tool window can be configured to selectively filter the severity states listed. This is particularly useful when working with larger databases containing many pages of severity states.

- [Switching from a severity state in alarms mode to custom historical mode](#)

When using the alarms historical data mode of the VibroSight VisionTime Range tool window, an individual severity state can be used to switch to the custom historical mode.

- [Displaying additional information about a severity state in alarms mode](#)

When using the alarms historical data mode of the VibroSight VisionTime Range tool window, additional information about an individual severity state can be displayed.

- [Refreshing the severity states grid in alarms mode](#)

When using the alarms historical data mode of the VibroSight VisionTime Range tool window, the severity states listed in the severity states grid can be refreshed.

- [Hiding and showing severity states in alarms mode](#)

When using the alarms historical data mode of the VibroSight VisionTime Range tool window, the types of severity level listed in the severity states grid can be hidden or shown.

Parent topic: [VibroSight Vision Time Range tool window and historical data](#)

Related concepts

[VibroSight Vision Time Range tool window historical data and machine states](#)

Related tasks

[Lesson 5 - Viewing plotted data as a single curve or separate curves for a single measurement](#)

Using VibroSight Vision in alarms mode

Historical data can be used in a VibroSight Vision project to display the measurement data stored in a VibroSight Server database for a time range defined in terms of the severity states (alarms) that the machinery being monitored has experienced.

1. To work with historical data in a VibroSight Vision project in alarms mode, select Alarms using the drop-down list box at the top of the VibroSight Vision Time Range tool window.

The VibroSight Vision project immediately switches to alarms mode and the VibroSight Vision Time Range tool window displays a severity states grid that lists the most recent 100 severity states that are available in the VibroSight Server database for the selected machine, measurement point (processing block) or measurement.

To improve functionality, the severity states displayed in the severity states grid are listed as pages, with each page containing 100 severity states. The 100 most recent severity states are displayed first (reverse chronological order) and other pages can be accessed using buttons at the bottom of the VibroSight Vision Time Range tool window.

Note:

As alarms (severity limits and states) are configured for the machinery being monitored at the measurement level (in the Hardware View of the configuration using VibroSight Configurator), a machine must be selected in the Machinery View or Hardware View, either directly or indirectly, in order for the severity states experienced by that machine to be listed.

2. To see the severity states available for different machines (if used in the VibroSight configuration), use the drop-down list box near the top of the VibroSight Vision Time Range tool window in alarms mode to select a different machine.

The VibroSight Vision Time Range tool window displays a severity states grid that lists the 100 most recent severity states that are available in the VibroSight Server database for the selected machine.

Note:

A machine can be selected directly in the Time Range tool window using the drop-down list box near the top of the VibroSight Vision Time Range tool window in alarms mode, can be selected directly in the Machinery View tool window by selecting a machine unit node or can be selected indirectly in the Hardware View or Machinery View tool windows by selecting other nodes, such as a measurement, that belong to a particular machine.

It is only possible to work with severity states from a single machine, at any one time.

3. Select a severity state or severity states displayed in the severity states grid as the time range for the VibroSight Vision project in one of the following ways:
 - a. To select a single severity state, double-click it.
 - b. To select a discontinuous range of severity states, double-click on the first severity state of interest, then CTRL+double-click on any other severity states of interest.
 - c. To select a continuous range of severity states, double-click on the first severity state of interest, then SHIFT+double-click on the last severity state of interest.

Note:

Selected severity states are indicated by bold black text in the VibroSight Vision Time Range tool window.

The plots displayed in the main working area as tabbed document windows update to use the data from the VibroSight Server database for the time range corresponding to the selected severity state or states.

Note:

Plots display no measurement data for the time range corresponding to the gaps left by selecting a discontinuous range of severity states.

Parent topic: [VibroSight Vision Time Range tool window historical data and alarms](#)

Selectively filtering severity states in alarms mode

Using parameters available in the VibroSight Vision Time Range tool window in alarms mode, the severity states grid displayed in the VibroSight Vision Time Range tool window can be configured to selectively filter the severity states listed. This is particularly useful when working with larger databases containing many pages of severity states.

Note:

The severity states displayed in the severity states grid depend on the settings of all of the controls in the VibroSight Vision Time Range tool window in alarms mode:

- When selective filtering is not used, that is, the drop-down list boxes for measurement points and the measurements are both set to Any ..., then the severity states grid provides an overall (merged) view that includes the severity states for all measurements, for the selected machine unit.

If some measurements have severity states with different severity levels occurring at the same time, then the overall view shows the highest severity level that occurred during that time (Danger being higher than Alert, and so on).

- When selective filtering is used at measurement point level only, that is, the drop-down list box for measurement points selects a particular measurement point (but the drop-down list box for measurements is set to Any ...), then the severity states grid provides an overall (merged) view that includes the severity states for all measurements under that measurement point, for the selected machine unit.

If there are multiple measurements under the measurement point and some measurements have severity states with different severity levels occurring at the same time, then the overall view shows the highest severity level that occurred during that time.

- When selective filtering is used at measurement level only, that is, the drop-down list box for measurements selects a particular measurement (but the drop-down list box for measurement points is set to Any ...), then the severity states grid provides an overall (merged) view that includes the severity states for that measurement under all measurement points, for the selected machine unit.

If there are multiple measurements under the measurement point and some measurements have severity states with different severity levels occurring at the same time, then the overall view shows the highest severity level that occurred during that time.

- When selective filtering is used at both measurement point and measurement level, that is, the drop-down list boxes for measurement points and the measurements are both not set to Any ..., then the severity states grid provides a view of the severity states for that measurement under that measurement point, for the selected machine unit.

When More options is selected in the VibroSight Vision Time Range tool window in alarms mode, additional controls become available that allow the severity states listed in the severity states grid to be selectively filtered. These additional controls operate in parallel, that is, the severity states listed in the severity states grid are selectively filtered by the measurement point (processing block) defined, the measurement defined, the types of severity level defined and the time range defined.

When Fewer options is selected in the VibroSight Vision Time Range tool window in alarms mode, the additional controls are hidden, although they still selectively filter the severity states listed in the severity states grid.

Note:

The Fewer options / More options button is displayed in bold black text to indicate when the additional controls are not using the default settings, that is, not all measurement points, not all measurements, not all types of severity level and not all data (time range) in the VibroSight Server database are selected.

1. To selectively filter the types of severity state by measurement point, click the drop-down list box that lists the measurement points (default: Any points) and click a measurement point of interest to select it.

The drop-down list box displays the selected measurement point. The severity states grid displayed by the VibroSight Vision Time Range tool window lists the most recent 100 severity states for the measurements under this measurement point with the types of severity level defined and time range defined, that are available in the VibroSight Server database for the selected machine unit.

Note:

The names of the measurement points in the drop-down list box are taken from the measurement points configured (in the Machinery View) of the configuration using VibroSight Configurator.

2. To selectively filter the types of severity state by measurement, click the drop-down list box that lists the measurements (default: Any measurements) and click a measurement of interest to select it.

The drop-down list box displays the selected measurement. The severity states grid displayed by the VibroSight Vision Time Range tool window lists the most recent 100 severity states for the measurement with the types of severity level defined and time range defined, that are available in the VibroSight Server database for the selected machine unit.

Note:

The names of the measurements in the drop-down list box are taken from the measurements configured (in the Hardware View) of the configuration using VibroSight Configurator.

3. To selectively filter the types of severity state by the type of severity level, click the drop-down list box that lists the selected severity levels, then clear or select individual severity levels by name (or clear or select Select All) by clicking their check boxes. Click outside the drop-down list box to confirm any changes.

The drop-down list box displays the selected types of severity level in a comma separated list. The severity states grid displayed by the VibroSight Vision Time Range tool window lists the most recent 100 severity states for the measurement with the types of severity level defined and time range defined, that are available in the VibroSight Server database for the selected machine unit.

Note:

The names of the severity levels in the drop-down list box are the predefined severity levels implemented by VibroSight.

4. To selectively filter the types of severity state by time, one of the Relative, Absolute or All Time option buttons can be selected:
 - a. If Relative is selected, controls appears that allow a relative time range (working backwards from now) to be defined by specifying the Last n minutes, hours, days, months or years.
 - b. If Absolute is selected, controls appears that allow an absolute time range to be defined by specifying From and To dates and times.

Note:

When changing from Relative time to Absolute time, the relative time settings are converted automatically to the corresponding absolute time settings.

- c. If All is selected, all of the measurement data stored in the VibroSight Server database is used.

The severity states grid displayed by the VibroSight Vision Time Range tool window lists the most recent 100 severity states for the measurement with the types of severity level defined and time range defined, that are available in the VibroSight Server database for the selected machine unit.

The selectively filtered severity states displayed in the severity states grid can be used to select the time range for the VibroSight Vision project by double-clicking on one or more severity states.

Parent topic: [VibroSight Vision Time Range tool window historical data and alarms](#)

Switching from a severity state in alarms mode to custom historical mode

When using the alarms historical data mode of the VibroSight VisionTime Range tool window, an individual severity state can be used to switch to the custom historical mode.

This is particularly useful when a severity state of interest is found and the user then wants to view measurement data around the time of this severity state.

To switch from a severity state in alarms mode to custom historical mode, right-click on the severity state in the severity states grid and click Convert to custom historical.

The VibroSight Vision Time Range tool window switches from the alarms mode to custom historical mode with the Time set to Absolute, and with the From and To dates and times automatically set to the dates and times corresponding to the severity state.

For example, the From date and time can be manually set 5 minutes earlier and the To date and time can be set 5 minutes later to see what happened immediately before and after the severity state of interest.

Parent topic: [VibroSight Vision Time Range tool window historical data and alarms](#)

Displaying additional information about a severity state in alarms mode

When using the alarms historical data mode of the VibroSight VisionTime Range tool window, additional information about an individual severity state can be displayed.

The information displayed for a severity state in the severity states grid consists of the colour associated with the type of the severity level and the type of severity level (taken from the predefined severity levels implemented by VibroSight), the start date and time of the severity state and its duration.

The additional information displayed for a severity state in the on-screen tip includes the finish date and time.

To display additional information about a severity state in alarms mode, move the pointer over the severity state in the severity states grid.

An on-screen tip appears displaying additional information about the severity state.

Parent topic: [VibroSight Vision Time Range tool window historical data and alarms](#)

Refreshing the severity states grid in alarms mode

When using the alarms historical data mode of the VibroSight VisionTime Range tool window, the severity states listed in the severity states grid can be refreshed.

When working in alarms mode, changes to the Time Range tool window settings automatically and immediately affect the contents of the tool window, that is, the severity states listed in the severity states grid.

However, if new measurement and severity state data has been added to the VibroSight Server database since the Time Range tool window settings were last changed, the new severity state information is not included in the severity states grid.

Refreshing the severity states grid ensure that the most recent severity state information is included. When the severity states grid is refreshed, VibroSight Vision communicates with the VibroSight Server database and reloads the severity states defined by the controls in the VibroSight Vision Time Range tool window in severity states mode.

To refresh the severity states listed in the alarms mode, right-click on the severity states grid and click Refresh.

The severity states grid is updated with the most up-to-date severity state information from the VibroSight Server database defined by the controls in alarms mode.

Parent topic: [VibroSight Vision Time Range tool window historical data and alarms](#)

Hiding and showing severity states in alarms mode

When using the alarms historical data mode of the VibroSight VisionTime Range tool window, the types of severity level listed in the severity states grid can be hidden or shown.

When the types of severity level listed in the severity states grid are hidden or shown, VibroSight Vision does not communicate with the VibroSight Server database and retrieve measurement data based on these changes. It simply hides or shows the severity states previously retrieved from the VibroSight Server database.

1. To hide a type of severity level, right-click on the type of severity level in the severity states grid and click Hide:

The severity states grid is updated with all instances of the selected type of severity level hidden.

2. To show a type of severity level that was previously hidden, right-click on the severity states grid and click Show: ... , selecting the name of the type of severity level to show.

The severity states grid is updated with all instances of the selected type of severity level shown.

Parent topic: [VibroSight Vision Time Range tool window historical data and alarms](#)

VibroSight Vision Time Range tool window historical data and custom historical

When using the custom historical historical data mode of the VibroSight Vision Time Range tool window, the measurement data stored in the VibroSight Server database can be accessed, retrieved and displayed in terms of different custom historical time ranges (absolute or relative).

Note:

Different custom historical time ranges can be defined by the user based on absolute or relative periods of time, up to and including all of the data stored in the VibroSight Server database.

- [Using VibroSight Vision in custom historical mode](#)

Historical data can be used in a VibroSight Vision project to display the measurement data stored in a VibroSight Server database for a time range defined in terms of different custom historical time ranges (absolute or relative).

- [Applying and cancelling time range settings in custom historical mode](#)

When working in custom historical mode, changes to the Time Range tool window settings only affect the contents of the tool window and the VibroSight Vision project, after they have been manually applied.

- [Navigating backwards and forwards using time range settings in custom historical mode](#)

When working in custom historical mode and changes to the Time Range tool window settings have been manually applied, it is possible to navigate backwards and forwards through the measurement data.

Parent topic: [VibroSight Vision Time Range tool window and historical data](#)

Using VibroSight Vision in custom historical mode

Historical data can be used in a VibroSight Vision project to display the measurement data stored in a VibroSight Server database for a time range defined in terms of different custom historical time ranges (absolute or relative).

When working in custom historical mode, changes to the Time Range tool window settings only affect the contents of the tool window and the VibroSight Vision project, after they have been manually applied using the Apply button.

1. To work with historical data in a VibroSight Vision project in custom historical mode, select Custom historical using the drop-down list box at the top of the VibroSight Vision Time Range tool window.

The VibroSight Vision project immediately switches to custom historical mode and Relative time is selected by default.

Note:

In custom historical mode, any changes to the settings in the Time Range tool window do not affect the tool window or the VibroSight Vision project until the Apply button (available in the Time Range tool window in custom historical mode) is clicked.

2. To define the customer historical time range for which VibroSight Vision should communicate with the VibroSight Server database and retrieve measurement data, one of the Relative, Absolute or All Time option buttons can be selected:
 - a. If Relative is selected, controls appears that allow a relative time range (working backwards from now) to be defined by specifying the Last n minutes, hours, days, months or years.
 - b. If Absolute is selected, controls appears that allow an absolute time range to be defined by specifying From and To dates and times.

Note:

When changing from Relative time to Absolute time, the relative time settings are converted automatically to the corresponding absolute time settings.

- c. If All is selected, all of the measurement data stored in the VibroSight Server database is used.

Note:

The Apply button is displayed in bold black text to indicate when the settings defined in the VibroSight Vision Time Range tool window in custom historical mode have changed since they were last applied.

3. Click the Apply button to apply the settings in the Time Range tool window in custom historical mode as the time range for the VibroSight Vision project.

VibroSight Vision communicates with the VibroSight Server database and retrieves measurement data based on the settings in the Time Range tool window.

The Loading data progress indicator is displayed in the status bar of the VibroSight Vision project user interface when large quantities of measurement data are being retrieved by a VibroSight Vision project from a VibroSight Server database.

The plots displayed in the main working area as tabbed document windows update to use the data from the VibroSight Server corresponding to the applied custom historical time range.

Parent topic: [VibroSight Vision Time Range tool window historical data and custom historical](#)

Applying and cancelling time range settings in custom historical mode

When working in custom historical mode, changes to the Time Range tool window settings only affect the contents of the tool window and the VibroSight Vision project, after they have been manually applied.

This is unlike the other modes of operation (machine states mode, alarms mode and live data mode) of the VibroSight Vision Time Range tool window in which changes to the Time Range tool window settings automatically and immediately affect the contents of the tool window and the VibroSight Vision project.

1. Click the Apply button to apply the settings in the Time Range tool window in custom historical mode to the VibroSight Vision project.

VibroSight Vision starts communicating with the VibroSight Server database and retrieving measurement data based on the settings in the Time Range tool window and the Apply button becomes a Cancel button.

The Loading data progress indicator is displayed in the status bar of the VibroSight Vision project user interface when large quantities of measurement data are being retrieved by a VibroSight Vision project from a VibroSight Server database.

2. Click the Cancel button to stop the communications between VibroSight Vision and the VibroSight Server database and any subsequent updates to the VibroSight Vision project.

Alternatively, the user must wait until the current application of the Time Range tool window settings is completed before the settings in the Time Range tool window can be modified and applied.

Note:

The Apply button is displayed in bold black text to indicate when the settings defined in the VibroSight Vision Time Range tool window in custom historical mode have changed since they were last applied.

Parent topic: [VibroSight Vision Time Range tool window historical data and custom historical](#)

Navigating backwards and forwards using time range settings in custom historical mode

When working in custom historical mode and changes to the Time Range tool window settings have been manually applied, it is possible to navigate backwards and forwards through the measurement data.

After settings defined in the Time Range tool window have been applied to a VibroSight Vision project, additional controls become available in the Time Range tool window in custom historical mode that allow the measurement data to be navigated in periods of time that are the same size as the applied time range setting.

Note:

It is only possible to navigate backwards and forwards through the measurement data in this way for time range settings that have been defined in relative time or

absolute time.

Note:

When using the Back and Forward buttons in the Time Range tool window in custom historical mode, changes to the settings are automatically applied, so there is no need to use the Apply button.

After Time Range tool window settings have been defined in relative time or absolute time and have been applied:

1. Click the Back button to navigate backwards in time through the measurement data.

Note:

The Time Range tool window automatically resolves the time range (relative or absolute) to a new absolute time range that corresponds to the previous adjacent time range that is the same size as currently defined and applies it.

The previous adjacent time range is displayed in the From and To dates and times. Then VibroSight Vision starts communicating with the VibroSight Server database and retrieving the measurement data for the time range.

2. Click the Forward button to navigate forwards in time through the measurement data.

Note:

The Time Range tool window automatically resolves the time range (relative or absolute) to a new absolute time range that corresponds to the next adjacent time range that is the same size as currently defined and applies it.

The next adjacent time range is displayed in the From and To dates and times. Then VibroSight Vision starts communicating with the VibroSight Server database and retrieving the measurement data for the time range.

The plots displayed in the main working area as tabbed document windows update to use the data from the VibroSight Server corresponding to the applied custom historical time range (next or previous).

Parent topic: [VibroSight Vision Time Range tool window historical data and custom historical](#)

VibroSight Vision Time Range tool window and live data

When using the live data mode of the VibroSight Vision Time Range tool window, the size and the update rate of the buffer used for measurement data can be configured, the data acquisition by the VibroSight Vision project can be paused and the buffer can be cleared.

- [Using VibroSight Vision in live data mode](#)
Live data can be used in a VibroSight Vision project to display the measurement data being streamed directly from XMx16 condition monitoring cards.
- [Configuring the buffer used in live data mode](#)
Using parameters available in the VibroSight Vision Time Range tool window in live data mode, the size and the update rate of the VibroSight Vision buffer used for live measurement data are configured.
- [Pausing and resuming the buffer used in live data mode](#)
Using a button available in the VibroSight Vision Time Range tool window in live data mode, the VibroSight Vision buffer used for live measurement data can be paused or resumed.
- [Clearing the buffer used in live data mode](#)
Using a button available in the VibroSight Vision Time Range tool window in live data mode, the VibroSight Vision buffer used for live measurement data can be cleared.

Parent topic: [Working with the VibroSight Vision Time Range tool window](#)

Using VibroSight Vision in live data mode

Live data can be used in a VibroSight Vision project to display the measurement data being streamed directly from XMx16 condition monitoring cards.

To work with live data in a VibroSight Vision project, select Live data using the drop-down list box at the top of the VibroSight Vision Time Range tool window.

The VibroSight Vision project immediately switches to live data mode and starts acquiring data in the VibroSight Vision buffer used for live measurement data, using the parameters (Duration and Interval) configured for the live data mode. That is, live data acquisition by VibroSight Vision is started.

The plots displayed in the main working area as tabbed document windows update to use the data from the VibroSight Vision buffer used for live measurement data.

Note:

When a historical data mode is selected using the drop-down list box at the top of the VibroSight Vision Time Range tool window, the VibroSight Vision buffer used for live measurement data stops acquiring measurement data and is cleared (emptied).

Parent topic: [VibroSight Vision Time Range tool window and live data](#)

Configuring the buffer used in live data mode

Using parameters available in the VibroSight Vision Time Range tool window in live data mode, the size and the update rate of the VibroSight Vision buffer used for live measurement data are configured.

The VibroSight Vision buffer used for live measurement data can be thought of a circular buffer, that is, as time passes, the oldest measurements in the buffer are removed to provide space for the new measurements.

When More options (the default) is selected in the VibroSight Vision Time Range tool window in live data mode, the size and the update rate can be configured independently for static measurements (Variables) and for dynamic measurements (Waveforms, Spectra and Orbits).

When Fewer options is selected, a common size and update rate is used for all measurements.

1. To configure the size of the VibroSight Vision buffer, use the Duration drop-down list box to select a predefined duration (in time) or configure a Custom duration (in time or size).

If Last value is selected, then the buffer has a size of one measurement only, so the last (most recent) measurement acquired is always displayed.

2. To configure the update rate of the VibroSight Vision buffer, use the Interval drop-down list boxes to configure the interval in seconds, minutes or hours.

The VibroSight Vision project immediately starts acquiring data with the new buffer settings. The plots displayed in the main working area as tabbed document windows update accordingly.

Parent topic: [VibroSight Vision Time Range tool window and live data](#)

Pausing and resuming the buffer used in live data mode

Using a button available in the VibroSight Vision Time Range tool window in live data mode, the VibroSight Vision buffer used for live measurement data can be paused or resumed.

The VibroSight Vision buffer used for live measurement data can be thought of a circular buffer, that is, as time passes, the oldest measurements in the buffer are removed to provide space for the new measurements.

The acquisition of measurement data by the buffer can also be paused or resumed manually at any time, that is, live data acquisition by VibroSight Vision can be stopped or started.

1. To pause the acquisition of measurement data by the buffer, click the Pause button.

The buffer stops acquiring measurements and the plots displayed in the main working area as tabbed document windows stop being updated.

2. To resume the acquisition of measurement data by the buffer, click the Resume button.

The buffer starts acquiring measurements and the plots displayed in the main working area as tabbed document windows start being updated again.

When paused, the VibroSight Vision buffer used for live measurement data stops acquiring measurement data, so when resumed and the displayed plots start updating again, there are no measurements to display for the duration of the pause.

Parent topic: [VibroSight Vision Time Range tool window and live data](#)

Clearing the buffer used in live data mode

Using a button available in the VibroSight Vision Time Range tool window in live data mode, the VibroSight Vision buffer used for live measurement data can be cleared.

The VibroSight Vision buffer used for live measurement data can be thought of a circular buffer, that is, as time passes, the oldest measurements in the buffer are removed to provide space for the new measurements.

The contents of the buffer can also be cleared (emptied) manually at any time.

To clear the contents of the VibroSight Vision buffer, click the Clear data button.

The contents of the buffer is immediately cleared.

The VibroSight Vision buffer used for live measurement data continues to acquire data using the parameters (Duration and Interval) configured for the live data mode.

Parent topic: [VibroSight Vision Time Range tool window and live data](#)

Working with the VibroSight Vision Project Explorer tool window

The VibroSight Vision Project Explorer tool window displays the structure of a VibroSight Vision project in terms of its project views and document windows (plots). It also allows the active project view and the active plot to be selected and displayed in VibroSight Vision.

The Project Explorer tool window is on the right of the VibroSight Vision project user interface beside the Time Range tool window (by default).

- [VibroSight Vision Project Explorer tool window and the docking framework](#)
VibroSight implements a flexible docking framework that allows the user to change the default arrangement and behaviour of tool windows such as the VibroSight Vision Project Explorer.
- [Renaming a VibroSight Vision project using the VibroSight Vision Project Explorer tool window](#)
A VibroSight Vision project can be renamed using the VibroSight Vision Project Explorer tool window.
- [Adding a project view using the VibroSight Vision Project Explorer tool window](#)
A project view can be added to a VibroSight Vision project using the VibroSight Vision Project Explorer tool window.
- [Renaming a project view using the VibroSight Vision Project Explorer tool window](#)
A project view in a VibroSight Vision project can be renamed using the VibroSight Vision Project Explorer tool window.
- [Selecting a project view using the VibroSight Vision Project Explorer tool window](#)
A project view is selected as the active project view in a VibroSight Vision project using the VibroSight Vision Project Explorer tool window.
- [Reordering project views using the VibroSight Vision Project Explorer tool window](#)
Project views in a VibroSight Vision project can be reordered using the VibroSight Vision Project Explorer tool window.
- [Deleting a project view using the VibroSight Vision Project Explorer tool window](#)
A project view can be deleted from a VibroSight Vision project using the VibroSight Vision Project Explorer tool window.
- [Adding a plot using the VibroSight Vision Project Explorer tool window](#)
A plot can be added to a VibroSight Vision project using the VibroSight Vision Project Explorer tool window.
- [Renaming a plot using the VibroSight Vision Project Explorer tool window](#)
A plot in a VibroSight Vision project can be renamed using the VibroSight Vision Project Explorer tool window.
- [Selecting a plot using the VibroSight Vision Project Explorer tool window](#)
A plot can be selected as the active plot in a VibroSight Vision project using the VibroSight Vision Project Explorer tool window.
- [Reordering plots using the VibroSight Vision Project Explorer tool window](#)
Plots in a VibroSight Vision project can be reordered using the VibroSight Vision Project Explorer tool window.
- [Deleting a plot using the VibroSight Vision Project Explorer tool window](#)
A plot can be deleted from a VibroSight Vision project using the VibroSight Vision Project Explorer tool window.

VibroSight Vision Project Explorer tool window and the docking framework

VibroSight implements a flexible docking framework that allows the user to change the default arrangement and behaviour of tool windows such as the VibroSight Vision Project Explorer.

The Project Explorer tool window is on the right of the VibroSight Vision project user interface beside the Time Range tool window (by default).

Parent topic: [Working with the VibroSight Vision Project Explorer tool window](#)

Related tasks

[Hiding and displaying tool windows](#)

[Docking and floating tool windows](#)

[Auto-hiding tool windows](#)

[Selecting a tool window](#)

[Moving a tool window](#)

[Resizing windows](#)

[Saving VibroSight Vision window layouts](#)

Renaming a VibroSight Vision project using the VibroSight Vision Project Explorer tool window

A VibroSight Vision project can be renamed using the VibroSight Vision Project Explorer tool window.

When a VibroSight Vision project is created, the default name of the project view is *New Project*.

To rename a VibroSight Vision project using the Project Explorer tool window, right-click the project node (the root node in the hierarchical tree structure), click Rename and use the dialog box that appears to give a new name to the VibroSight Vision project.

The new name for the VibroSight Vision project is used in the Project Explorer tool window and in the title bar of the VibroSight Vision user interface.

Parent topic: [Working with the VibroSight Vision Project Explorer tool window](#)

Adding a project view using the VibroSight Vision Project Explorer tool window

A project view can be added to a VibroSight Vision project using the VibroSight Vision Project Explorer tool window.

When a VibroSight Vision project is created, it contains one empty project view (*Default View*) to which document windows (plots) are added. To help organize the plots in a VibroSight Vision project, additional views can be added as containers for additional plots (like folder and files in a Windows Explorer).

1. Add a new project view to a VibroSight Vision project using the Project Explorer tool window in one of the following ways:
 - a. Right-click the project node (the root node in the hierarchical tree structure) and click New View.

If the project node is not selected, the New View command will be unavailable (greyed out) as project views can only exist under the project node.

- b. Click the New View button on the Project Explorer's tool window's local toolbar.

A new empty project view is added to the project node. It becomes the active project view (as indicated by bold black text in the Project Explorer) and is displayed at the front of the main working area. However, since a new project view is empty, the main working area is displayed as empty (that is, no tabbed document windows).

2. Copy an existing project view to a VibroSight Vision project using the Project Explorer tool window in one of the following ways:
 - a. Right-click an existing project view under the project node (the root node in the hierarchical tree structure) and click Copy. Alternatively, select an existing project view and use the CTRL+C shortcut key.
 - b. Right-click the project node and click Paste. Alternatively, select the project node and use the CTRL+V shortcut key.

A copy of the existing project view (with the name *Copy of ...*) is added to the project node. It becomes the active project view (as indicated by bold black text in the Project Explorer) and is displayed at the front of the main working area.

Parent topic: [Working with the VibroSight Vision Project Explorer tool window](#)

Renaming a project view using the VibroSight Vision Project Explorer tool window

A project view in a VibroSight Vision project can be renamed using the VibroSight Vision Project Explorer tool window.

When a project view is added to a VibroSight Vision project, the default name of the project view is *View*. If the name of the project view is already used in the Project Explorer tool window, a number is added to the default name, for example, *View*, *View (2)*, *View (3)* and so on.

To rename a project view in a VibroSight Vision project using the Project Explorer tool window, right-click on the project view, click Rename and use the dialog box that appears to give a new name to the project view.

The new name for the project view is used in the Project Explorer tool window.

Parent topic: [Working with the VibroSight Vision Project Explorer tool window](#)

Selecting a project view using the VibroSight Vision Project Explorer tool window

A project view is selected as the active project view in a VibroSight Vision project using the VibroSight Vision Project Explorer tool window.

The plots contained in the active project view are displayed as tabbed document windows in the main working area in the centre of the VibroSight Vision project user interface. New plots added to a VibroSight Vision project from the Machinery View, Hardware View and the plotting toolbar are added to the active project view.

Select a project view as the active project view in a VibroSight Vision project using the Project Explorer tool window in one of the following ways:

- a. Double-click the project view.
 - b. Right-click the project view and click Open.

The selected project view becomes the active project view and its plots are displayed in the main working area in the centre of the VibroSight Vision project user interface.

Note:

The active project view is indicated by bold black text in the VibroSight Vision Project Explorer tool window.

Parent topic: [Working with the VibroSight Vision Project Explorer tool window](#)

Reordering project views using the VibroSight Vision Project Explorer tool window

Project views in a VibroSight Vision project can be reordered using the VibroSight Vision Project Explorer tool window.

The default order of the project views displayed in the VibroSight Vision Project Explorer tool window is the order in which they were added. However, this order can easily be changed.

Reorder the project views in a VibroSight Vision project using the Project Explorer tool window in one of the following ways:

- a. Right-click a project view and either click Move down or Move up to move the project view down or up under the project node (the root node in the hierarchical tree structure).
- b. Drag a project view either down to the next project view or up to the previous project view under the project node (the root node in the hierarchical tree structure).
- c. Right-click a project view and click Cut, then right-click the project node (the root node in the hierarchical tree structure) and click Paste to move the project view down to the end of the hierarchical tree structure. Alternatively, use the CTRL+X and CTRL+V shortcut keys.

The project view is moved to a new position under the project node of the VibroSight Vision Project Explorer tool window.

Parent topic: [Working with the VibroSight Vision Project Explorer tool window](#)

Deleting a project view using the VibroSight Vision Project Explorer tool window

A project view can be deleted from a VibroSight Vision project using the VibroSight Vision Project Explorer tool window.

The user will be prompted to confirm a deletion before being able to continue.

Delete a project view from a VibroSight Vision project using the Project Explorer tool window in one of the following ways:

- a. Right-click a project view and click Delete.
- b. Click a project view to select it and press the DELETE key.

The project view is deleted from the VibroSight Vision project, along with any plots that it contains, and the active plot reverts to the most recently used plot that is available.

Deleting a project view permanently removes it, along with any plots that it contains, from the VibroSight Vision project. However, this does not delete any measurement data stored in the VibroSight Server data base.

Parent topic: [Working with the VibroSight Vision Project Explorer tool window](#)

Adding a plot using the VibroSight Vision Project Explorer tool window

A plot can be added to a VibroSight Vision project using the VibroSight Vision Project Explorer tool window.

When a plot is added to a VibroSight Vision project, it is always added to the active project view (as indicated by bold black text in the Project Explorer tool window).

1. To add a plot to a VibroSight Vision project using the Project Explorer tool window, right-click on the active project, click Add new plot and select the type of plot required.

Note:

If the project view is not the active project view, the Add new plot command will be unavailable (greyed out).

A new empty VibroSight Vision plot of the type selected is added to the active project view. It becomes the active document window (as indicated by bold black text in the Project Explorer) and is displayed at the front of the main working area as a tabbed document window.

2. Copy an existing plot to a VibroSight Vision project using the Project Explorer tool window in one of the following ways:
 - a. Right-click an existing plot and click Copy. Alternatively, select the existing plot and use the CTRL+C shortcut key.
 - b. Right-click a project view and click Paste. Alternatively, select the project view and use the CTRL+V shortcut key.

A copy of the existing plot (with the name *Copy of...*) is added to the selected project view. It becomes the active plot (as indicated by bold black text in the Project Explorer) and is displayed at the front of the main working area.

If tab groups exist in the window layout project view, then the new plot is added to the tab group that contains the previously active document.

Note:

Both the measurement data to view (the “what”) and the time range to use (the “when”) must be selected in a VibroSight Vision project in order to display data in a VibroSight Vision plot.

Parent topic: [Working with the VibroSight Vision Project Explorer tool window](#)

Renaming a plot using the VibroSight Vision Project Explorer tool window

A plot in a VibroSight Vision project can be renamed using the VibroSight Vision Project Explorer tool window.

When a plot is added to a VibroSight Vision project, the type of plot is used as the default name of the plot, for example, *Bar Chart Plot*, *Table Plot*, *Trend Plot* and so on. If the name of the plot is already used in the Project Explorer tool window, a number is added to the default name, for example, *Trend Plot*, *Trend Plot (2)*, *Trend Plot (2)* and so on.

To rename a plot in a VibroSight Vision project using the Project Explorer tool window, right-click on the plot, click Rename and use the dialog box that appears to give a new name to the plot.

The new name for the plot is used in the Project Explorer tool window and in the title tab of the plot.

Parent topic: [Working with the VibroSight Vision Project Explorer tool window](#)

Selecting a plot using the VibroSight Vision Project Explorer tool window

A plot can be selected as the active plot in a VibroSight Vision project using the VibroSight Vision Project Explorer tool window.

The active plot is displayed at the front of the tabbed document windows in the main working area in the centre of the VibroSight Vision project user interface.

To select a plot as the active plot in a VibroSight Vision project using the Project Explorer tool window, double-click the plot.

The project view containing the selected plot becomes the active project view, the selected plot becomes the active plot and is displayed at the front of the main working area in the centre of the VibroSight Vision project user interface.

Note:

The selected (active) project view and the selected (active) plot in a project view are indicated by bold black text in the VibroSight Vision Project Explorer tool window.

Parent topic: [Working with the VibroSight Vision Project Explorer tool window](#)

Reordering plots using the VibroSight Vision Project Explorer tool window

Plots in a VibroSight Vision project can be reordered using the VibroSight Vision Project Explorer tool window.

The default order of the plots displayed in the VibroSight Vision Project Explorer tool window is the order in which they were added. However, this order can easily be changed.

Reorder the plots in a VibroSight Vision project using the Project Explorer tool window in one of the following ways:

- Right-click a plot and either click Move down or Move up to move the plot down or up under the project view that contains the plot.
- Drag a plot to a new position under a project view: either the project view that contains the plot or a different project view.
- Right-click a plot and click Cut, then right-click a project view and click Paste to move the plot down to the end of the selected project view. Alternatively, use the CTRL+X and CTRL+V shortcut keys.

The plot is moved to a new position under a project view of the VibroSight Vision Project Explorer tool window.

Parent topic: [Working with the VibroSight Vision Project Explorer tool window](#)

Deleting a plot using the VibroSight Vision Project Explorer tool window

A plot can be deleted from a VibroSight Vision project using the VibroSight Vision Project Explorer tool window.

The user will be prompted to confirm a deletion before being able to continue.

Delete a plot from a VibroSight Vision project using the Project Explorer tool window in one of the following ways:

- Right-click a plot and click Delete.
- Click a plot to select it and press the DELETE key.

The plot is deleted from the VibroSight Vision project and the active plot reverts to the most recently used plot that is available.

Deleting a plot permanently removes it from the VibroSight Vision project. However, this does not delete any measurement data stored in the VibroSight Server data base.

Parent topic: [Working with the VibroSight Vision Project Explorer tool window](#)

Working with Plots

VibroSight Vision includes a wide range of plot formats and chart types for you to graphically display data of interest.

The following topics describe how to display, customize, and print plots.

- [Clearing a VibroSight Vision plot](#)
The measurement data can be cleared from a single plot (the active VibroSight Vision plot).
- [Displaying the properties of a VibroSight Vision plot](#)
The properties of a VibroSight Vision plot can be displayed.
- [Hiding and showing the legend in a VibroSight Vision plot](#)
The legend in a VibroSight Vision plot can be either hidden or shown.
- [Exporting a VibroSight Vision plot](#)
A single plot (the active VibroSight Vision plot) can be exported from a VibroSight Vision project in order to share information.
- [Exporting a VibroSight Vision view](#)
Multiple plots (all of the plots in the active VibroSight Vision project view) can be exported from a VibroSight Vision project in order to share information.
- [Generating a VibroSight Vision report](#)
A VibroSight Vision report can be generated in order to share information.
- [Changing the properties of a VibroSight Vision plot](#)
The properties of a VibroSight Vision plot can be changed.
- [Changing the default plot settings of a VibroSight Vision plot](#)
The default plot settings for each type of VibroSight Vision plot can be changed.

- [Creating Plots](#)
VibroSight Vision includes a wide range of plot formats and chart types for you to graphically display data of interest.
- [Selecting Plot Documents](#)
Plot documents are displayed in the central part of the VibroSight Vision window.
- [Creating Custom Plot Layouts](#)
Each plot document can contain one or more charts, arranged in a simple or custom layout that you determine.
- [Zooming In and Out Of Plots](#)
The VibroSight Vision provides a variety of methods to zoom in or out on plots in order to display more or less data.
- [Working with cursors](#)
A main cursor and a delta cursor are available in applicable types of VibroSight Vision plot in order to highlight measurements of interest and allow their values to be reads.
- [Working with Cursors](#)
The VibroSight Vision provides a wide selection of cursors that you can add to charts.
- [Panning, Scrolling and Rotating 3D Charts](#)
You can rotate 3D charts to help better interpret the data.
- [Customizing Plots](#)
You can interact with plots by zooming in and out, panning and scrolling, adding tags to points of particular interest, or hiding points that are not relevant.
- [Printing Plots](#)
You can either print plots directly, or preview a plot before printing.

Clearing a VibroSight Vision plot

The measurement data can be cleared from a single plot (the active VibroSight Vision plot).

The Plot Clear plot command can be used to remove the measurement data from a plot document window, effectively creating a new empty plot to which data can then be added.

1. Select a VibroSight Vision plot, for example, by clicking the title tab at the top of the plot document window or using the VibroSight Vision Project Explorer tool window.
2. Click either the Plot > Clear plot menu command or right-click the plot and click Clear plot.

The measurement data is cleared (removed) from the plot.

Parent topic: [Working with Plots](#)

Displaying the properties of a VibroSight Vision plot

The properties of a VibroSight Vision plot can be displayed.

The Plot Plot Properties command can be used to display the properties of a plot in a Plot Properties window.

Note:

The properties of a a VibroSight Vision plot are organised and displayed as different tabs in the Plot Properties window. These tabs and their parameters are different for the different types of VibroSight Vision plot.

1. Select a VibroSight Vision plot, for example, by clicking the title tab at the top of the plot document window or using the VibroSight Vision Project Explorer tool window.
2. Click either the Plot > Plot Properties menu command or right-click the plot and click Plot Properties.

The Plot Properties window for the plot is displayed.

3. Click each tab of the Plot Properties window to see all of the parameters that have been configured for the plot.

Parent topic: [Working with Plots](#)

Hiding and showing the legend in a VibroSight Vision plot

The legend in a VibroSight Vision plot can be either hidden or shown.

The Plot Hide/Show Legend command can be used to hide or show the legend in a plot document window, for example, to maximise the display area given to the measurement data.

1. Select a VibroSight Vision plot, for example, by clicking the title tab at the top of the plot document window or using the VibroSight Vision Project Explorer tool window.
2. If the legend is displayed in the plot document window, click either the Plot > Hide Legend menu command or right-click the plot and click Hide Legend.

The plot document window updates to display the plot without the legend.

3. If the legend is not displayed in the plot document window, click either the Plot > Show Legend menu command or right-click the plot and click Show Legend.

The plot document window updates to display the plot with a legend.

Parent topic: [Working with Plots](#)

Exporting a VibroSight Vision plot

A single plot (the active VibroSight Vision plot) can be exported from a VibroSight Vision project in order to share information.

The Plot Export command can be used to export a single plot as either an image file (that reflects the contents of the document window) or a data file (the underlying raw data that was used to generate the plot in VibroSight Vision). The plot (image or data) can also be copied to the Clipboard allowing it to be pasted directly into any compatible program.

1. Select a VibroSight Vision plot, for example, by clicking the title tab at the top of the plot document window or using the VibroSight Vision Project Explorer tool window.
2. Click either the Plot > Export menu command or right-click the plot and click Export.

An Export To dialog box is displayed.

3. To export the plot as a image file:
 - a. In the Export To dialog box, click the Image tab to display the image file options.
 - b. Under Format, select the image file format to use (*.bmp, *.gif, *.jpg or *.png).
 - c. Under Size, enter the dimensions of the image file to use (in pixels).

If the linking chain between the Width and Height boxes is connected , then the aspect ratio between the values is maintained. If the linking chain between the Width and Height boxes is broken , then the values can be changed independently.

Note:

Click on the linking chain to switch between its connected  and broken  states.

The dimensions that are displayed by default depend on the size of the plot document window as displayed on the screen.

- d. Then click Save.
- e. Use the Save As dialog box that appears to navigate the folders on the computer and select in which folder and under what file name to save the image file. Then click Save.
4. To copy the plot as an image file to the Clipboard:
 - a. In the Export To dialog box, click the Image tab to display the image file options.
 - b. Click the Copy to clipboard button, then click Cancel to close the dialog box.
5. To export the plot as a data file:
 - a. In the Export To dialog box, click the Data tab to display the data file options.
 - b. Under Format, select the data file format to use (Excel (*.xlsx) or CSV (*.csv)).
 - c. For Excel data files, configure the Options for the data file: either Localtime or UTC can be used for the timestamp of the measurements in the data file.
 - d. For CSV data files, define the Separator to be used between the elements in the data file, using the drop-down list box. If Custom is selected, then the custom character to be used as the separator must be entered in the text box. And configure the Options for the data file: either Localtime or UTC can be used for the timestamp of the measurements in the data file.
 - e. Then click Save.
 - f. Use the Save As dialog box that appears to navigate the folders on the computer and select in which folder and under what file name to save the data file. Then click Save.
6. To copy the plot as a data file to the Clipboard:
 - a. In the Export To dialog box, click the Data tab to display the data file options.
 - b. Click the Copy to clipboard button, then click Cancel to close the dialog box.

Parent topic: [Working with Plots](#)

Related tasks

[Exporting a VibroSight Vision plot or a project view from the Print Preview window](#)

[Exporting a VibroSight Vision view](#)

[Generating a VibroSight Vision report](#)

Exporting a VibroSight Vision view

Multiple plots (all of the plots in the active VibroSight Vision project view) can be exported from a VibroSight Vision project in order to share information.

The Tools Export View command can be used to export all of the plots in a VibroSight Vision project view as image files (that reflect the contents of the plot document windows) and/or as data files (the underlying raw data that was used to generate the plots in VibroSight Vision).

1. Select a VibroSight Vision project view, for example, using the VibroSight Vision Project Explorer tool window.
2. Click the Tools > Export View menu command.

An Export To dialog box is displayed.

3. To export the project view as image files:
 - a. In the Export To dialog box, click the Image tab to display the image file options.
 - b. Under Format, select the image file format to use (*.bmp, *.gif, *.jpg or *.png).
 - c. Under Size, enter the dimensions of the image file to use (in pixels).

If the linking chain between the Width and Height boxes is connected , then the aspect ratio between the values is maintained. If the linking chain between the Width and Height boxes is broken , then the values can be changed independently.

Note:

Click on the linking chain to switch between its connected  and broken  states.

The dimensions that are displayed by default depend on the size of the plot document window as displayed on the screen.

- d. For *.jpg image files, configure the Options for the image file: the image Quality is configurable as a % (the higher the %, the better the image quality and larger the file size).
- e. Under Export to, select Image and Data to export both image files and data files, select Image to export image files only and select Data to export data files only.
- f. Under Location, select in which folder to save the files.
- g. Under Filename prefix, type a text prefix that will be added at the beginning of each file name.

The use of a file name prefix is optional.

The file name used for an exported file consists of the file name prefix (if used) and the name of the plot (as used in the title tab of the plot and the Project Explorer tool window).

- h. Under New folder, type the name of a subfolder that will be used in addition to the folder selected under Location.
- i. Then click Save.
4. To export the project view as data files:
 - a. In the Export To dialog box, click the Data tab to display the data file options.
 - b. Under Format, select the data file format to use (Excel (*.xlsx) or CSV (*.csv)).
 - c. For Excel data files, configure the Options for the data file: either Localtime or UTC can be used for the timestamp of the measurements in the data file.
 - d. For CSV data files, define the Separator to be used between the elements in the data file, using the drop-down list box. If Custom is selected, then the custom character to be used as the separator must be entered in the text box. And configure the Options for the data file: either Localtime or UTC can be used for the timestamp of the measurements in the data file.

- used for the timestamp of the measurements in the data file.
- e. Under Export to, select Image and Data to export both image files and data files, select Image to export image files only and select Data to export data files only.
- f. Under Location, select in which folder to save the files.
- g. Under Filename prefix, type a text prefix that will be added at the beginning of each file name.

The use of a file name prefix is optional.

The file name used for an exported file consists of the file name prefix (if used) and the name of the plot (as used in the title tab of the plot and the Project Explorer tool window).

- h. Under New folder, type the name of a subfolder that will be used in addition to the folder selected under Location.
- i. Then click Save.

Parent topic: [Working with Plots](#)

Related tasks

[Exporting a VibroSight Vision plot or a project view from the Print Preview window](#)

[Exporting a VibroSight Vision plot](#)

[Generating a VibroSight Vision report](#)

Generating a VibroSight Vision report

A VibroSight Vision report can be generated in order to share information.

The Tools Report command can be used to generate a report file (*.rtf) that contains all of the plots in a VibroSight Vision project view. The name of the project view, and the name and image for each plot in the project view are written to separate pages of the report file.

1. Select a VibroSight Vision project view, for example, using the VibroSight Vision Project Explorer tool window.
2. Click the Tools > Report menu command.

A Save As dialog box is displayed.

3. Use the Save As dialog box to navigate the folders on the computer and select in which folder and under what file name to generate and save the report file (*.rtf).

The report file uses frames to contain each part of the document: project view name, plot name, plot image, and so on.

Note:

To remove the frames from the report file (*.rtf) in Microsoft Word, use CTRL+A to select all parts of the document, then use CTRL+Q to remove all paragraph formatting from the document.

Parent topic: [Working with Plots](#)

Related tasks

[Exporting a VibroSight Vision plot or a project view from the Print Preview window](#)

[Exporting a VibroSight Vision plot](#)

[Exporting a VibroSight Vision view](#)

Changing the properties of a VibroSight Vision plot

The properties of a VibroSight Vision plot can be changed.

The Plot Plot Properties command can be used to display the properties of a plot in a Plot Properties window. Using the Plot Properties window, the properties can be modified in order to change how the plot is displayed in the document window.

Note:

The properties of a VibroSight Vision plot are organised and displayed as different tabs in the Plot Properties window. These tabs and their parameters are different for the different types of VibroSight Vision plot.

1. Select a VibroSight Vision plot, for example, by clicking the title tab at the top of the plot document window or using the VibroSight Vision Project Explorer tool window.
2. Click either the Plot > Plot Properties menu command or right-click the plot and click Plot Properties.

The Plot properties window for the plot is displayed.

3. Click each tab of the Plot Properties window to see all of the parameters that have been configured for the plot. Use the controls available on each tab to modify the parameters and change how the plot is displayed.
4. Click Apply to apply any changes to the plot immediately, leaving the the Plot properties window open.

The plot document window updates to display the plot using the modified parameters.

5. Click OK to apply any changes to the plot and close the Plot Properties window.

The plot document window updates to display the plot using the modified parameters.

Parent topic: [Working with Plots](#)

Related tasks

[Changing the default plot settings of a VibroSight Vision plot](#)

Changing the default plot settings of a VibroSight Vision plot

The default plot settings for each type of VibroSight Vision plot can be changed.

The Tools Options command can be used to display the default plot settings for each type of VibroSight Vision plot. Using the Options window, the default plot settings can be modified in order to change how each type of is displayed in the document window by default.

Note:

The default plot settings of a VibroSight Vision plot are organised and displayed under different headings for each type of type of plot. For each type of plot in the Options window, the headings used correspond to the tabs used in the Plot Properties window.

1. Click the Tools > Options menu command.

The Options window for VibroSight Vision is displayed.

2. Under Default Plot Settings in the Options window (left pane), select a type of plot.

The default plot settings for the type of plot selected are displayed in the Options window (right pane), organised under different headings.

3. Use the controls available under each heading to change the default behaviour of each tab to default plot settings as required.
4. Click OK to apply any changes to the default plot settings and close the Options window.

The default settings configured for a VibroSight Vision plot will be used the next time that a plot document window is created for that type of VibroSight Vision plot.

Parent topic: [Working with Plots](#)

Related tasks

[Changing the properties of a VibroSight Vision plot](#)

Creating Plots

VibroSight Vision includes a wide range of plot formats and chart types for you to graphically display data of interest.

The following topics describe the possible methods of creating new plots.

- [Creating a Quick Plot](#)
The Quick Plot window provides the easiest method of creating a plot: you select the data to plot then select the plot type.
- [Creating a Combustion Monitoring Plot](#)
VibroSight Vision provides special Combustion Monitoring plots that provide three complementary views of combustion data.

Parent topic: [Working with Plots](#)

Creating a Quick Plot

The Quick Plot window provides the easiest method of creating a plot: you select the data to plot then select the plot type.

To create a quick plot:

1. Click the Quick Plot button  Quick Plot on the toolbar at the top of the Launch Pad window.
2. In the Data Entity Selection area of window, navigate the tree view of data items available for the currently selected data source and select the data items to plot.
3. In the Data Filter area of the window, click the Time Range field to display the Time Range window. Specify criteria for importing live or historical data. For example, to import all available historical data for the selected data set, select Historical Data and All, then click OK.

Alternatively, if you want to apply an existing data filter containing other selection criteria, select the filter from the Name list in the Data Filter area of the window.

4. Depending on the type of the data you selected, appropriate plot buttons are automatically activated in the Quick Plot controls area of the window. For example, if you selected a spectrum data set, the Spectrum button in the Dynamic Data area of the window is activated. Click the button for the type of plot you wish to create.
5. The Save Data Filter window is displayed. At this point, you can store the criteria currently selected in the Data Filter area of the window as a new filter. Type a filter Name, optional Description and the Folder in which to store the filter and click Yes to create a filter. Otherwise, click No to proceed without creating a filter.

The selected data items are filtered then displayed as a new plot document.

6. Optionally, click the Pin Plot  button on the Standard toolbar to add the plot to the structure displayed on the Project Explorer window and make it persistent.

Parent topic: [Creating Plots](#)

Creating a Combustion Monitoring Plot

VibroSight Vision provides special Combustion Monitoring plots that provide three complementary views of combustion data.

1. On the Quick Plot window, click the Time Range list box, choose Live Data, and click OK.
2. Click the Combustion button  Combustion in the Data Filter area of the window.

The Save Data Filter window is displayed.

3. Click Yes to create a new data filter, or No to proceed without creating a filter.

The Overview combustion plot appears. This plot comprises:

- Top left, a spectrum chart displaying data originating from the selected channel.
- Bottom left, a Patchwork FFT chart. This is a spectrum chart calculated using available data (one for each processing block).
- On the right, a trend chart containing a separate axis system for each frequency band. (The frequency bands are defined in the configuration).
- Across the bottom of the plot, a table displaying numerical values for each defined frequency band.

4. In the Machine list, select the machine from which to display data.
5. Click the Load Data button  Load Data.

Live Data is displayed in the combustion plots.

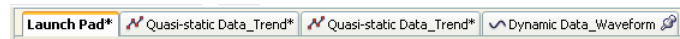
Parent topic: [Creating Plots](#)

Selecting Plot Documents

Plot documents are displayed in the central part of the VibroSight Vision window.

To select a plot document, either:

- a. Click the plot document's tab along the top of the central area of the VibroSight Vision window. Plot document tabs are identified with a Plot icon followed by the name of the plot. For example:



The icon indicates the type of plot, for example  for trend plots.

Or:

- a. If it is not already visible, display the Project Explorer window (View > Project Explorer).
- b. Browse the structure view and select the Plot document  (icons vary depending on the plot type).
- c. Either double-click the Plot icon, or right-click and choose Open from the contextual menu that appears.

Parent topic: [Working with Plots](#)

Related concepts

[Plots](#)

Related reference

[The Project Explorer Window](#)

Creating Custom Plot Layouts

Each plot document can contain one or more charts, arranged in a simple or custom layout that you determine.

There are several steps to adding a chart to an existing plot.

- [Adding Display Areas To Existing Plots](#)
A plot is made up of one or more display areas, each of which can contain a separate chart.
- [Adding Charts to Display Areas](#)
Once you have created your plot layout, you can choose the data to display in each of the display areas on the plot.
- [Adding Data to Plots](#)
VibroSight Vision provides a number of methods for adding data to a plot. With the Quick Plot window, for example, you select the data, time range, and plot type then create a plot directly. Data are automatically imported into the plot.

Parent topic: [Working with Plots](#)

Adding Display Areas To Existing Plots

A plot is made up of one or more *display areas*, each of which can contain a separate chart.

To add display areas to plots:

1. Display an existing plot.
2. Add display areas to achieve the desired layout.

There are two ways to add display areas to a plot:

- [Adding Individual Display Areas](#)
You can add individual display areas to a plot to create a custom layout.
- [Applying a Custom Plot Layout](#)
You can choose a custom plot layout from a list of available custom plot types.

Parent topic: [Creating Custom Plot Layouts](#)

Adding Individual Display Areas

You can add individual display areas to a plot to create a custom layout.

Either:

- Right-click on the plot and choose Add Display Area > Top, Left, Right, or Bottom.

Or:

- Click the Add Display Area button  on the Plot Layout toolbar and choose Add Top, Add Left, Add Right or Add Bottom from the drop-down list.

A new display area is added to the plot and all display areas resized accordingly.

Parent topic: [Adding Display Areas To Existing Plots](#)

Related concepts

[Display Areas](#)

Related reference

[The Plot Layout Toolbar](#)

Applying a Custom Plot Layout

You can choose a custom plot layout from a list of available custom plot types.

1. Click the Modify Plot Layout button  on the Plot Layout toolbar.

The Select Plot Layout window is displayed.

2. Click one of the buttons and choose a custom plot layout from the drop-down lists of layouts.
3. Click OK.

The selected layout is applied to the current plot and all display areas resized accordingly.

Parent topic: [Adding Display Areas To Existing Plots](#)

Related concepts

[Display Areas](#)

Related reference

[The Plot Layout Toolbar](#)

[The Select Plot Layout Window](#)

Adding Charts to Display Areas

Once you have created your plot layout, you can choose the data to display in each of the display areas on the plot.

1. If the Toolbox window is not shown, click View > Toolbox to display it now.
2. If the Toolbox window is currently in *auto hide* state (that is, it appears only as a vertical title bar down the side of the VibroSight Vision window):
 - o Move the mouse over the Toolbox title bar to display the Toolbox window.
 - o Click the Toggle Auto Hide button  on the Toolbox window's title bar. This keeps the Toolbox window open and ensures that the entire plot document is visible.
3. Select the chart type to add from the list in the Toolbox window. You can select the following charts:
 - o 3D Chart. Adds a 3D chart.
 - o Polar Chart. Adds a polar chart.
 - o Trend chart. Adds a 2D chart for a 2-axis system suitable for trends
 - o Spectrum chart. Adds a 2D chart suitable for spectra.
 - o Waveform Chart. Adds a 3D chart for a 3-axis system (suitable for cascade spectra, cascade waveforms, and so on)
4. Drag the chart from the Toolbox window and drop it onto an empty display area. An empty set of axes appear.

Parent topic: [Creating Custom Plot Layouts](#)

Related concepts

[Window States](#)

Adding Data to Plots

VibroSight Vision provides a number of methods for adding data to a plot. With the Quick Plot window, for example, you select the data, time range, and plot type then create a plot directly. Data are automatically imported into the plot.

However, there are also several ways of selecting data to import and adding to either an existing plot or an empty display area:

- [Using the Add Data Window](#)
When you have added a display area to a plot, you can choose the data to display on the chart.

Parent topic: [Creating Custom Plot Layouts](#)

Using the Add Data Window

When you have added a display area to a plot, you can choose the data to display on the chart.

To add data to an empty display area:

1. Right-click on the display area and choose Add Data from the contextual menu that appears.

The Add Data window is displayed.
2. If you have previously applied a chart type to the display area by dragging and dropping it from the Toolbox window, the "Data Type" field is already set to the corresponding data type. For example, if you added a Waveform Chart, the Data Type field is set to "Waveform".

Otherwise, choose the type of data to add in the Data Type list.
3. Select the historical or live data to add to the plot by clicking on the Time Range list box.
4. Use the list boxes in the main area of the Add Data window to select the data items to plot.
5. Click Add Data.

The data is added to the plot.

Related reference

[The Add Data Window](#)

Zooming In and Out Of Plots

The VibroSight Vision provides a variety of methods to zoom in or out on plots in order to display more or less data.

The following types of zoom are available:

- [Vertical Band Zooming](#)
Vertical band zooming allows you to select a vertical band on a plot and expand it to fill the full width of the plot.
- [Horizontal Band Zooming](#)
Horizontal band zooming allows you to select a horizontal band on a plot and expand it to fill the full height of the plot.
- [Frame Zooming](#)
Frame zooming allows you to select a rectangular area on a plot and expand it to fill the full width and height of the plot.
- [Document Zooming](#)
Document zooming allows you to zoom in or out on the complete plot, including axes, labels, cursors, grid-lines, and so on, rather than simply the data displayed on the plot.
- [Cursor-controlled Zooming](#)
Cursor-controlled zooming allows you to automatically zoom in on the shaded area delimited by the lines of a vertical band, horizontal band, or frame cursor.

Parent topic: [Working with Plots](#)

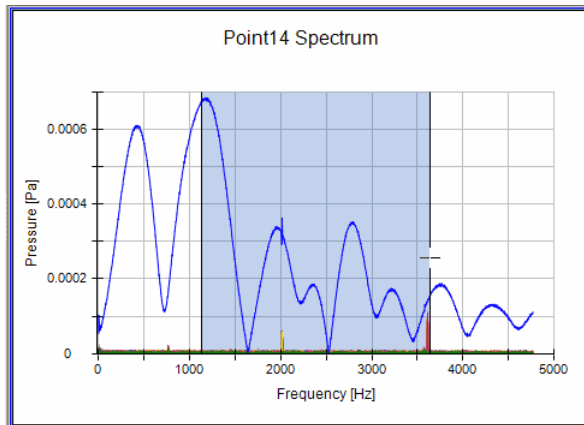
Vertical Band Zooming

Vertical band zooming allows you to select a vertical band on a plot and expand it to fill the full width of the plot.

1. Either:
 - Click the Zoom Types button  on the Zoom toolbar and click the Vertical Band Zoom button .
 - Right-click anywhere on the plot and choose Zoom > Vertical Band.

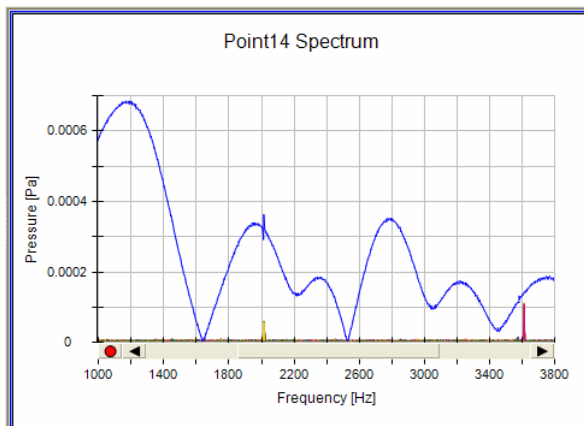
The cursor shape changes to a crosshair .

2. Click on the edge of the area that you want to zoom and drag the mouse to the left or right. A coloured band bordered by two vertical lines is displayed to indicate the area selected:



Vertical Band Zooming

3. Release the mouse button. The selected band expands to occupy the full width of the plot:



After Vertical Zooming

Click the left arrow  and right arrow  buttons (or drag the slider control) on the horizontal axis to scroll the zoomed area left or right.

To reset the zoom level to the default (100%), click the Reset Zoom button  in the bottom left corner of the plot.

Parent topic: [Zooming In and Out Of Plots](#)

Horizontal Band Zooming

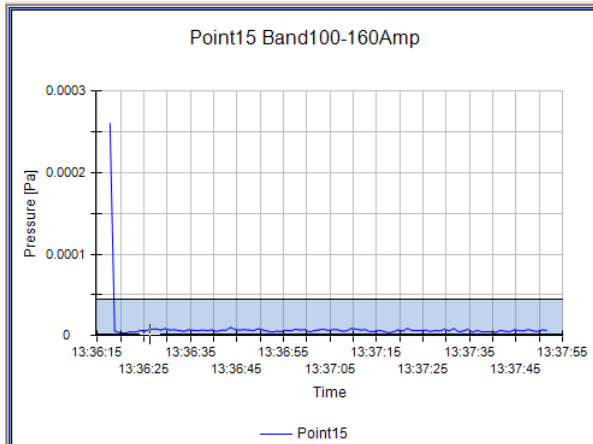
Horizontal band zooming allows you to select a horizontal band on a plot and expand it to fill the full height of the plot.

1. Either:

- Click the Zoom Types button  on the Zoom toolbar and click the Horizontal Zoom mode  button.
- Right-click anywhere on the plot and choose Zoom > Horizontal Band

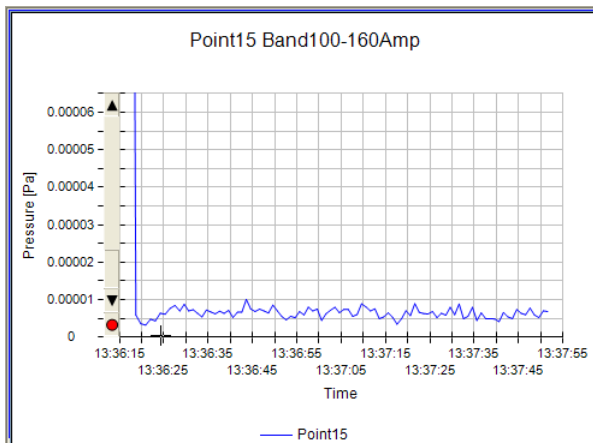
The cursor changes to a crosshair cursor .

2. Click on one edge of the area that you want to zoom and drag the mouse up or down. A coloured band bordered by two horizontal lines are displayed to indicate the area selected:



Horizontal Band Zooming

3. Release the mouse button. The selected band expands to occupy the full height of the plot:



After Horizontal Zooming

Click the up arrow  and down arrow  buttons (or drag the slider control) on the vertical axis to scroll the zoomed area up or down.

To reset the zoom level to the default (100%), click the Reset Zoom button  in the bottom left corner of the plot.

Parent topic: [Zooming In and Out Of Plots](#)

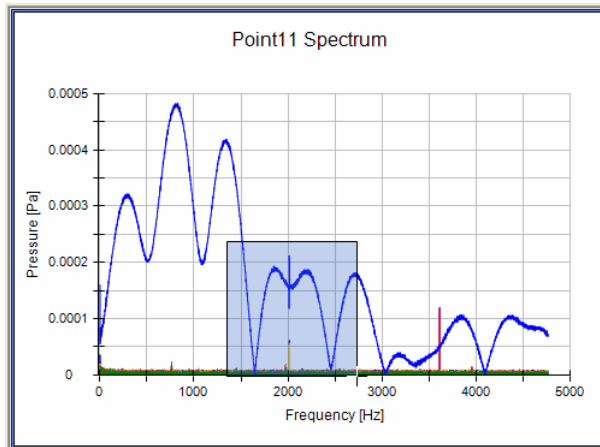
Frame Zooming

Frame zooming allows you to select a rectangular area on a plot and expand it to fill the full width and height of the plot.

1. Either:
 - Click the Zoom mode button  on the Zoom toolbar and click the Frame Zoom mode  button.
 - Right-click anywhere on the plot and choose Zoom > Frame.

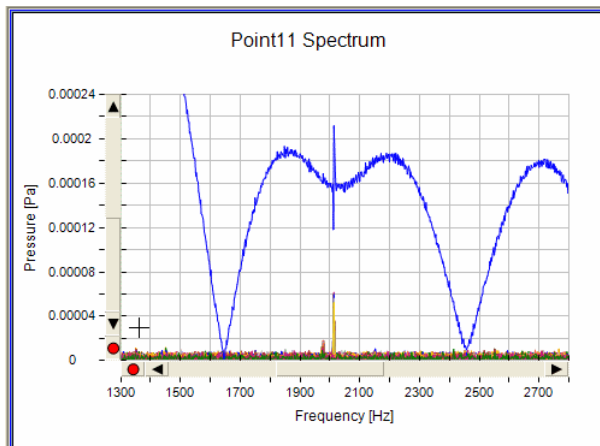
The cursor changes to a crosshair cursor .

2. Click on one corner of the area that you want to zoom and drag the mouse diagonally. A box is displayed to indicate the area selected:



Selecting an Area for Frame Zooming

3. Release the mouse button. The selected area expands to occupy the full width and height of the plot:



After Frame Zooming

Use the up arrow ▲, down arrow ▼, left arrow ◀ and right arrow ▶ buttons (or drag one of the slider controls) on the horizontal and vertical axes to scroll the zoomed area in any direction.

To reset the zoom level to the default (100%), click one of the Reset Zoom buttons (red circle icon) in the bottom left corner of the plot.

Parent topic: [Zooming In and Out Of Plots](#)

Document Zooming

Document zooming allows you to zoom in or out on the complete plot, including axes, labels, cursors, grid-lines, and so on, rather than simply the data displayed on the plot.

1. Click the Zoom Types button (magnifying glass icon) on the Zoom toolbar and click the Document Zoom button (document icon).

The cursor changes to a crosshair cursor +.

2. Click the Zoom In button (plus icon) or Zoom Out button (minus icon) on the document's toolbar.

Alternatively, right-click anywhere on the plot and choose Zoom > Zoom In (+) or Zoom > Zoom Out (-)

The document appears larger or smaller.

To reset the zoom level to the default (100%), either click the Zoom Reset button (circular arrow icon) on the document's toolbar, or right-click anywhere on the plot and choose Zoom > Zoom Off.

Parent topic: [Zooming In and Out Of Plots](#)

Cursor-controlled Zooming

Cursor-controlled zooming allows you to automatically zoom in on the shaded area delimited by the lines of a vertical band, horizontal band, or frame cursor.

Cursor-controlled zooming is not available for other cursor types (harmonic, sideband, or peak cursors).

1. Add a vertical band, horizontal band, or frame cursor to a chart.
2. Click the Cursor-controlled Zoom button (magnifying glass icon) on the Cursor toolbar.

The shaded area of the cursor is zoomed to fill the entire chart.

To cancel the cursor-controlled zoom, click the Reset Zoom button  in the bottom left corner of the chart (both buttons in the case of a frame cursor).

Parent topic: [Zooming In and Out Of Plots](#)

Working with cursors

A main cursor and a delta cursor are available in applicable types of VibroSight Vision plot in order to highlight measurements of interest and allow their values to be reads.

The following topics describe how to work with cursors in applicable types of VibroSight Vision plot.

- [Adding and removing the main cursor in a VibroSight Vision plot](#)
The main cursor in a VibroSight Vision plot can be added or removed.
- [Adding and removing the delta cursor in a VibroSight Vision plot](#)
The delta cursor in a VibroSight Vision plot can be added or removed.

Parent topic: [Working with Plots](#)

Adding and removing the main cursor in a VibroSight Vision plot

The main cursor in a VibroSight Vision plot can be added or removed.

The Main Cursor icon on the VibroSight Vision plot toolbar is used to add or remove the main cursor in a plot.

Note:

The main cursor is enabled by default in all applicable plots.

Removing the main cursor from a plot will also remove the delta cursor from the plot, if it has been added.

1. Select a VibroSight Vision plot, for example, by clicking the title tab at the top of the plot document window or using the VibroSight Vision Project Explorer tool window.
2. If the  Main Cursor icon is displayed against a darker background, then the main cursor is enabled, so click  Main Cursor again to remove it.

The plot document window updates to display the plot without the main cursor (the pair of dashed lines corresponding to the main cursor are removed).

3. If the  Main Cursor icon is displayed against a lighter background, then the main cursor is disabled, so click  Main Cursor again to add it.

The plot document window updates to display the plot with the main cursor (the pair of dashed lines corresponding to the main cursor are displayed).

Parent topic: [Working with cursors](#)

Adding and removing the delta cursor in a VibroSight Vision plot

The delta cursor in a VibroSight Vision plot can be added or removed.

The Delta Cursor icon on the VibroSight Vision plot toolbar is used to add or remove the delta cursor in a plot.

Note:

The delta cursor is not enabled by default.

Removing the delta cursor from a plot will leave the main cursor in the plot.

1. Select a VibroSight Vision plot, for example, by clicking the title tab at the top of the plot document window or using the VibroSight Vision Project Explorer tool window.
2. If the  Delta Cursor icon is displayed against a darker background, then the main cursor is enabled, so click the  Delta Cursor icon again to remove it.

The plot document window updates to display the plot without the delta cursor (the pair of dashed lines corresponding to the delta cursor are removed).

3. If the  Delta Cursor icon is displayed against a lighter background, then the delta cursor is not enabled, so clicking the  Delta Cursor icon again will add the delta cursor to the plot document window.

The plot document window updates to display the plot with the delta cursor (the pair of dashed lines corresponding to the delta cursor are added).

Parent topic: [Working with cursors](#)

Working with Cursors

The VibroSight Vision provides a wide selection of cursors that you can add to charts.

The following topics describe how to add cursors to charts.

- [Inserting a Cursor](#)
You can add multiple cursors of any type to each individual chart in a plot.
- [Binding Cursors to Curves](#)
By default, you can position and move cursors anywhere on a plot or chart. Sometimes, however, it is desirable to bind a cursor to a selected curve on the plot. When bound to a curve, a cursor line automatically tracks particular points on the curve, for example, minimum or maximum values.
- [Moving Cursor Lines](#)
You can change the position of a cursor by dragging cursor lines with the mouse.
- [Moving the Cursor Crosshair](#)
You can change the position of a cursor by dragging the crosshair to a new position.
- [Modifying Cursor Properties](#)
You can modify a number of properties of static cursors, for example, the number of sidebands displayed for a sidebands cursor, or the number and position of harmonics displayed for a harmonics cursor.

- [Removing a Cursor](#)

You can remove existing cursors from plots.

Parent topic: [Working with Plots](#)

Related concepts

[Cursors](#)

Related reference

[The Cursor Coordinates Window](#)

Inserting a Cursor

You can add multiple cursors of any type to each individual chart in a plot.

1. On the toolbar, click the Data Cursors button  and choose a cursor type. For example, click  to create a Vertical Band cursor. The mouse pointer changes to .
2. Click anywhere on the plot to display the cursor.

To add a frame cursor, drag the mouse horizontally, vertically or diagonally to define the cursor's range, then release the mouse button.:

3. Optionally, adjust the properties of the cursor. Right-click on the port and choose Cursor Properties from the menu that appears.

1. Click the Data Cursors button  on the Cursor toolbar.
2. Select the  Frame Cursor item.
3. Click on the plot and drag the mouse diagonally, then release the mouse pointer.

Parent topic: [Working with Cursors](#)

Binding Cursors to Curves

By default, you can position and move cursors anywhere on a plot or chart. Sometimes, however, it is desirable to "bind" a cursor to a selected curve on the plot. When bound to a curve, a cursor line automatically tracks particular points on the curve, for example, minimum or maximum values.

1. Insert a cursor on a plot.
2. Select the cursor (by clicking on one of the cursor lines, for example).
3. Right-click and choose Cursor > Bind cursor to curve, then select the cursor to bind the cursor to from the sub-menu that appears.
4. Optionally, modify the type of binding from the Cursor toolbar:
 - a. Click the Cursor Data Bindings button on the Cursor toolbar.
 - b. Choose a cursor binding type:
 -  Free Cursor
 -  Curve Cursor
 -  Minimum Value Cursor
 -  Maximum Value Cursor

You can also set binding properties on the Plot Properties window:

- a. Select the Cursors tab.
- b. Select the curve to bind the cursor to from the Bound to Curve list.
- c. Choose the binding type from the Binding Type list in the cursor-specific properties area of the window.
- d. Click OK.

The horizontal line of the cursor moves up or down onto the selected curve binding position. As you move the vertical cursor line, the horizontal cursor line automatically tracks the curve.

Parent topic: [Working with Cursors](#)

Moving Cursor Lines

You can change the position of a cursor by dragging cursor lines with the mouse.

1. To move a cursor line, position the mouse over the line. The mouse pointer changes to a double-headed arrow ( or ).
Note:

If the mouse pointer does not change shape, the cursor may currently be bound to the curve. Change the cursor type to "Free Cursor" to remove the binding and allow the cursor line to be moved manually.

2. Drag the cursor line to its new position and release.

Parent topic: [Working with Cursors](#)

Moving the Cursor Crosshair

You can change the position of a cursor by dragging the crosshair to a new position.

1. Move the mouse over the intersection of the two cursor lines. The mouse pointer changes to a crosshair .
Note:

If the mouse pointer does not change shape, the cursor may currently be bound to the curve. Change the cursor type to "Free" to remove the binding and allow the cursor line to be moved manually.

2. Drag the crosshair to the desired new cursor position and release.

Parent topic: [Working with Cursors](#)

Modifying Cursor Properties

You can modify a number of properties of static cursors, for example, the number of sidebands displayed for a sidebands cursor, or the number and position of harmonics displayed for a harmonics cursor.

1. Right-click on the chart and choose Plot Properties.

The Plot Properties window appears.

2. Select the Cursors tab.
3. Modify the cursor's properties as required, then click OK.

Parent topic: [Working with Cursors](#)

Removing a Cursor

You can remove existing cursors from plots.

1. Right-click on the plot and choose Plot Properties.
2. Select the Cursors tab.
3. Click once on the cursor in the list of cursors in the top half of the window.
4. Right-click and choose Delete from the contextual menu that appears.
5. Click Yes to confirm deletion.

The selected cursor is removed from the plot.

Parent topic: [Working with Cursors](#)

Panning, Scrolling and Rotating 3D Charts

You can rotate 3D charts to help better interpret the data.

1. Display a 3D-chart.
2. Click the Rotate button  on the Rotation toolbar.
3. Press and hold down the left mouse button over the chart. The cursor changes to a crosshair .
4. Move the mouse in the desired direction.
5. Release the mouse button.

Parent topic: [Working with Plots](#)

Customizing Plots

You can interact with plots by zooming in and out, panning and scrolling, adding tags to points of particular interest, or hiding points that are not relevant.

You can interact with plots using either the mouse or a contextual menu available within each document window displaying a plot.

The following tasks describe how to customize plots.

- [Displaying a Legend on a Plot](#)
You can customize a plot by displaying a legend. The legend displays information about the plot's content and attributes.
- [Showing Data Points](#)
You can choose to show or hide individual data points on plot curves.
- [Displaying Labels](#)
Labels are small boxes displayed on plots showing the current value of individual measurement points. You can choose to show or hide these data labels.
- [Adding a Comment to a Measurement Point](#)
You can add comments to measurement points of particular interest. These comments appear when you print a plot, and are saved as part of the plot for subsequent viewing.
- [Adding Notes to a Plot](#)
You can add notes to plots. These notes are then included on printouts of the plot and saved with the plot document for subsequent viewing.

Parent topic: [Working with Plots](#)

Related concepts

[Plots](#)

[Display Areas](#)

Related reference

[The Plot Properties Window](#)

Displaying a Legend on a Plot

You can customize a plot by displaying a legend. The legend displays information about the plot's content and attributes.

For example, the legend can display the following information for a plot:

You can choose which attributes to display in the legend from a list of available attributes.

1. Choose View > Plot Properties.

The Plot Properties window is displayed.

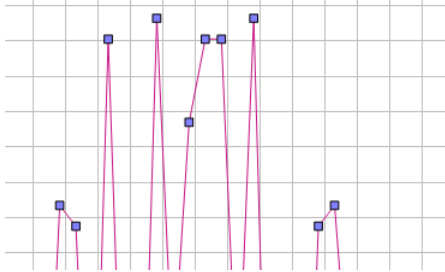
2. Select the Appearance tab.
3. Select the Legend tab at the top of the Appearance tab.

4. Select the Display Legend option.
5. Modify the attributes that are displayed in the Legend tab.
6. Click OK to close the Plot Properties window.

Parent topic: [Customizing Plots](#)

Showing Data Points

You can choose to show or hide individual data points on plot curves.



Data points

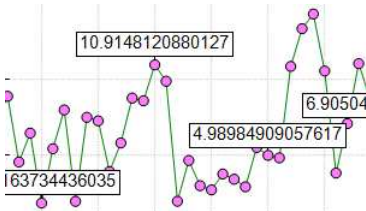
1. Right-click anywhere on the plot.
2. Choose Show Data Points.
3. By default, data points are shown as filled squares. To display a different shape:
 - a. Double-click anywhere on the plot, or right-click and choose Plot Properties. The Plot Properties window appears.
 - b. Select the Curves tab.
 - c. In the Marker field, choose a shape from the Custom Type list, or None to remove all markers from data points.
 - d. Click OK.

To hide data points, right-click and choose Hide Data Points.

Parent topic: [Customizing Plots](#)

Displaying Labels

Labels are small boxes displayed on plots showing the current value of individual measurement points. You can choose to show or hide these data labels.



Data Labels

1. Right-click anywhere on the plot.
2. Choose Display Labels.

If no labels appear, they may have been switched off in the plot properties:

- a. Double-click anywhere on the chart, or right-click and choose Plot Properties.
- b. Select the Curves tab.
- c. If None appears in the Labels column, change it to one of the other values. For example, to display a label for every alternate point, choose Show 1/2.

To hide data labels, right-click anywhere on the plot and choose Hide Labels.

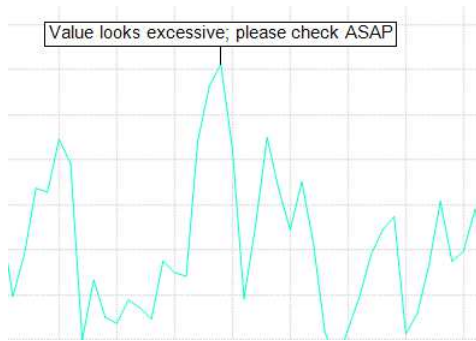
Parent topic: [Customizing Plots](#)

Adding a Comment to a Measurement Point

You can add comments to measurement points of particular interest. These comments appear when you print a plot, and are saved as part of the plot for subsequent viewing.

1. Click the measurement point to add the comment to.
2. Right-click on the measurement point and choose Data Comments > Add.
3. Type your comment, then click OK.

Your comment appears in a text box connected to the measurement point by a line:



A Measurement Point Comment

To remove the tag and comment:

1. Right-click on the measurement point.
2. Choose Un-tag Point from the contextual menu that appears. The tag and comment text are removed from the plot.

Whenever you save a project, tagged points and associated comments are saved on disk or in the database together with the data values.

Parent topic: [Customizing Plots](#)

Adding Notes to a Plot

You can add notes to plots. These notes are then included on printouts of the plot and saved with the plot document for subsequent viewing.

1. Click the point on the plot to add the note to.
2. Right-click on the measurement point and choose Plot Notes > Add.
3. Type your comment, then click OK.

Your comment appears in a text box.

To remove the plot note:

1. Click on the plot note.
2. Right-click and choose Plot Notes > Delete.

Parent topic: [Customizing Plots](#)

Printing Plots

You can either print plots directly, or preview a plot before printing.

1. Choose File > Print.
2. Select a printer and set print preferences.
3. Click OK.

Parent topic: [Working with Plots](#)

Displaying the Properties of a Data Item

You can display the current values of any metadata associated with a data item in the Properties window.

1. If currently hidden, click View > Properties Window to display the Properties window.
2. Click on any item in the Data Pool Explorer window.

The current properties of the selected item are displayed in the Properties window.

VibroSight Vision menus

- [VibroSight Vision File menu](#)
The VibroSight Vision File menu allows the management of VibroSight Vision projects.
- [VibroSight Vision Edit menu](#)
The VibroSight Vision Edit menu supports the modification of elements (nodes) in VibroSight Vision projects.
- [VibroSight Vision View menu](#)
The VibroSight Vision View menu allows the management of the project views created in a VibroSight Vision project and the user interface windows provided by VibroSight Vision.
- [VibroSight Vision Plot menu](#)
The VibroSight Vision Plot menu allows the management of the Views created in a VibroSight Vision project and the user interface windows provided by VibroSight Vision.
- [VibroSight Vision Tools menu](#)
The VibroSight Vision Tools menu allows the export of Views, the generation of reports, and the configuration of options and preferences local to VibroSight Vision (and some common across VibroSight).
- [VibroSight Vision Window menu](#)
The VibroSight Vision Window menu allows the management of the plot documents associated with a View in the main working window of VibroSight Vision.
- [VibroSight Vision Help menu](#)
The VibroSight Vision Help menu allows you to access help, save diagnostic information from a VibroSight system and display information about the version of VibroSight software.

VibroSight Vision File menu

The VibroSight Vision File menu allows the management of VibroSight Vision projects.

Note:

Any command that closes the currently opened project will prompt the user to save any changes (since the project was last saved) before the project is closed.

The following commands are available:

- New Project
Creates a new project by displaying the Data Sources Selection dialog box.
- Open Project
Opens an existing project by displaying the Open dialog box to select a project.
- Save Project
Saves the currently opened project using the current file name.
- Save Project As
Saves the currently opened project by displaying the Save as dialog box in order to allow a different file name to be used for the project. After a Save Project As operation, the currently opened project uses the new file name.
- Link to New Data Source
Opens the Data Sources Selection dialog box, which allows a different data source to be selected for the project.
- Close Project
Closes the currently opened project and returns to the VibroSight Vision Home Page.
- Add new plot
Adds a new (empty) plot document of the type specified to the currently active project.
- Print Preview
Opens the Print Preview window, which allows either the active plot or the active view to be previewed and printed.
- Print
Opens the Print dialog box, which allows either the active plot or the active view to be printed.
- Recent Projects
Opens a submenu that list the six most recently used projects. Clicking on a project will close the currently opened project and open the selected project.
- Exit
Closes the currently opened project and Exits VibroSight Vision.

Parent topic: [VibroSight Vision menus](#)

VibroSight Vision Edit menu

The VibroSight Vision Edit menu supports the modification of elements (nodes) in VibroSight Vision projects.

The following commands are available:

- Cut
Removes the currently selected elements (nodes) from their location and copies them to the clipboard. Also available using the CTRL+X keyboard shortcut.
- Copy
Copies the currently selected elements (nodes) to the clipboard. Also available using the CTRL+C keyboard shortcut.
- Paste
Pastes the contents of the clipboard to the current location. Also available using the CTRL+V keyboard shortcut.

For example, these commands can be used to help create and edit the tree structure in the Project Explorer window.

Note:

If the Edit menu commands are unavailable (greyed out), check that suitable elements (nodes) have been selected in the Project Explorer window.

Parent topic: [VibroSight Vision menus](#)

VibroSight Vision View menu

The VibroSight Vision View menu allows the management of the project views created in a VibroSight Vision project and the user interface windows provided by

VibroSight Vision.

The following commands are available:

- (Default) View (one entry per project view)

Displays the document windows (plots) associated with a project view in the main working window of VibroSight Vision and makes it the active one (setting the focus on it in Project Explorer). There is one entry per project view created in the Project Explorer window for a VibroSight Vision project.

- Hardware View

Displays the Hardware View window if it is currently hidden or closed and makes it the active window (setting the focus on it).

- Machinery View

Displays the Machinery View window if it is currently hidden or closed and makes it the active window (setting the focus on it).

- Time Range

Displays the Time Range window if it is currently hidden or closed and makes it the active window (setting the focus on it).

- Project Explorer

Displays the Project Explorer window if it is currently hidden or closed and makes it the active window (setting the focus on it).

- Full Screen

Maximizes the screen area given to the document windows (plots) contained in the active project view. This command is also available from the F11 keyboard shortcut, which switches the display between maximum screen area for document windows (plots) and the default VibroSight Vision project screen usage.

Parent topic: [VibroSight Vision menus](#)

VibroSight Vision Plot menu

The VibroSight Vision Plot menu allows the management of the Views created in a VibroSight Vision project and the user interface windows provided by VibroSight Vision.

Note:

Not all commands and options are available for each type of plot, so the commands and options displayed will depend on the currently active plot document.

These commands are also available by right-clicking on the plot document.

The following commands are available:

- Clear Plot

Removes all measurement data from the active plot document.

- Plot properties

Displays the plot properties dialog box for the active plot document.

- Hide/Show Legend

Displays or hides the legend on the active plot document. This helps maximise the display area given to the measurement data.

- Export

Exports the active plot document as either an image file (*.bmp, *.gif, *.jpg or *.png) or as a data file (*.xlsx or *.csv).

- Set current values as baseline

TBD.

- Set cursor data as baseline

TBD.

- Set cursor data as slowroll

TBD.

Parent topic: [VibroSight Vision menus](#)

VibroSight Vision Tools menu

The VibroSight Vision Tools menu allows the export of Views, the generation of reports, and the configuration of options and preferences local to VibroSight Vision (and some common across VibroSight).

The following commands are available:

- Export View

Exports all of the plot documents associated with the active View as either image files (*.bmp, *.gif, *.jpg or *.png) or data files (*.xlsx or *.csv). See also the Export command on the Plot menu.

- Report

Generates a report consisting of all of the plot documents associated with the active View as a file (*.rtf).

- Options

Displays the Options window that allows the management of the user configurable options for the VibroSight software. Options available include Environment and Configuration Files variables, Access Rights settings and the Default Plot Settings for each type of plot document supported by VibroSight Vision.

- Unit Preferences

Displays the Unit Preferences window that allows the management of the unit preferences to be used throughout the VibroSight software. Imperial and Metric unit sets are available by default. However, unit sets can be copied, renamed, imported and exported, allowing unit preferences to be quickly customized to meet the needs of an application and shared between VibroSight installations.

Parent topic: [VibroSight Vision menus](#)

VibroSight Vision Window menu

The VibroSight Vision Window menu allows the management of the plot documents associated with a View in the main working window of VibroSight Vision.

The following commands are available:

- (Name of) Plot (one entry per Plot Document)

Displays the selected plot document in the main working window of VibroSight Vision and makes it the active one (setting the focus on it in Project Explorer). There is one entry per plot document associated with the currently active View.

Note:

This command is particularly useful when there are many plot documents associated with the active View as it removes the need to navigate the individual plot document tabs at the top of the main working window of VibroSight Vision in order to jump to a particular plot document. Similarly, the Project Explorer can also be used to jump between plot documents.

Parent topic: [VibroSight Vision menus](#)

VibroSight Vision Help menu

The VibroSight Vision Help menu allows you to access help, save diagnostic information from a VibroSight system and display information about the version of VibroSight software.

The following commands are available:

- Contents

Displays the  VibroSight help that comes with the VibroSight software.

- Save diagnostic information

Allows diagnostic information for the VibroSight system, including log files (*.xlog) for all of the VibroSight software modules, system information and event information to be saved to a file. This information about a VibroSight system can be useful to Meggitt Sensing Systems customer support when investigating certain issues.

- About VibroSight ...

Displays information about the version of VibroSight software being used.

Parent topic: [VibroSight Vision menus](#)

VibroSight Vision toolbars

Note:

The VibroSight Vision toolbar buttons available are updated dynamically depending on the the currently active plot document. Not all toolbar buttons are available for each type of plot.

- [VibroSight Vision Standard toolbar](#)

The VibroSight Vision Standard toolbar contains buttons to help you quickly perform standard operations.

- [VibroSight Vision Plotting toolbar](#)

The VibroSight Vision Plotting toolbar contains buttons to add new plots to the active VibroSight Vision project view.

- [VibroSight Vision Plot toolbar](#)

The VibroSight Vision Plot toolbar contains buttons to perform common operations on the active plot.

VibroSight Vision Standard toolbar

The VibroSight Vision Standard toolbar contains buttons to help you quickly perform standard operations.

The following toolbar buttons are available:

Toolbar button	Description
	New Project (CTRL+N)
	Create a new VibroSight Vision project.
	Open Project (CTRL+O)
	List all VibroSight Vision projects in the current project folder.

	Save Project (CTRL+S)
	Save the current VibroSight Vision project or active document.
	Cut (CTRL+X)
	Cut the selection and copy it to the clipboard.
	Copy (CTRL+C)
	Copy the selection to the clipboard.
	Paste (CTRL+V)
	Paste the contents of the clipboard.
	Full Screen (F11)
	Maximizes the screen area given to the document windows (plots) contained in the active project view. Click Exit Full Screen or press F11 (again) to switch back to the default VibroSight Vision project screen usage.

Parent topic: [VibroSight Vision toolbars](#)

VibroSight Vision Plotting toolbar

The VibroSight Vision Plotting toolbar contains buttons to add new plots to the active VibroSight Vision project view.

The following toolbar buttons are available:

Toolbar button	Description
	Bar Chart Plot
	Add a new Bar Chart Plot to the active View.
	Table Plot
	Add a new Table Plot to the active View.
	Trend Plot
	Add a new Trend Plot to the active View.
	Bode Plot
	Add a new Bode Plot to the active View.
	Polar Plot
	Add a new Polar Plot to the active View.
	Correlation Plot
	Add a new Correlation Plot to the active View.
	Shaft Centerline Plot
	Add a new Shaft Centerline Plot to the active View.
	Waveform Plot
	Add a new Waveform Plot to the active View.
	Orbit Plot
	Add a new Orbit Plot to the active View.
	Spectrum Plot
	Add a new Spectrum Plot to the active View.
	Waterfall/Cascade Plot
	Add a new Waterfall/Cascade Plot to the active View.
	Spectrogram Plot
	Add a new Spectrogram Plot to the active View.

Parent topic: [VibroSight Vision toolbars](#)

VibroSight Vision Plot toolbar

The VibroSight Vision Plot toolbar contains buttons to perform common operations on the active plot.

The following toolbar buttons are available:

Toolbar button	Description
	Clear Plot
	Clear all measurement data from the plot
	Plot Properties
	Display the plot properties window for the plot
	Hide/Show Legend

	Switch between hiding and showing the plot legend information on the plot
	Zoom Mode
	Select the zoom mode to apply when clicking-and-dragging on the plot:  Frame Zoom,  Vertical Zoom or  Horizontal Zoom
	Zoom Reset
	Reset (clear) all zooming that has been applied to the plot
	Panning
	Enable panning for a plot that has been zoomed. The pointer will change to a  when panning is enabled. To disable panning, click this toolbar button again (and the pointer will return to normal).
	Main Cursor
	Add the cursor to the plot. If the cursor has already been added to the plot, clicking this toolbar button will remove the cursor from the plot.
	Delta Cursor
	Add the delta cursor to the plot. If the cursor has already been added to the plot, clicking this toolbar button will remove the cursor from the plot.

Parent topic: [VibroSight Vision toolbars](#)

VibroSight Vision windows

- [VibroSight Vision Home Page](#)
VibroSight Vision can be in two different high level states: displaying the VibroSight Vision Home Page or displaying an opened VibroSight Vision project. Whenever VibroSight Vision does not have a project opened, the VibroSight Vision Home Page is displayed by default.
- [VibroSight Vision project user interface](#)
VibroSight Vision can be in two different high level states: displaying the VibroSight Vision Home Page or displaying an opened VibroSight Vision project. Whenever VibroSight Vision has a project opened, the VibroSight Vision project user interface is displayed.
- [VibroSight Vision Machinery View tool window](#)
The VibroSight Vision Machinery View tool window displays the underlying structure of a VibroSight-based condition monitoring application in terms of the machinery being monitored. It also allows the measurement data (the “what”) to view in a VibroSight Vision plot to be selected.
- [VibroSight Vision Hardware View tool window](#)
The VibroSight Vision Hardware View tool window displays the underlying structure of a VibroSight-based condition monitoring application in terms of the VibroSight-based hardware. It also allows the measurement data (the “what”) to view in a VibroSight Vision plot to be selected.
- [VibroSight Vision Time Range tool window](#)
The VibroSight Vision Time Range tool window allows the time range (the “when”) to use for a VibroSight Vision project to be selected using mutually exclusive modes of operation.
- [VibroSight Vision Project Explorer tool window](#)
The VibroSight Vision Project Explorer tool window displays the structure of a VibroSight Vision project in terms of its project views and document windows (plots). It also allows the active project view and the active plot to be selected and displayed in VibroSight Vision.
- [VibroSight Data Sources Selection dialog box](#)
The VibroSight Data Sources Selection dialog box is used to select a data source to be used by VibroSight clients such as VibroSight Mimic, VibroSight Scope and VibroSight Vision.
- [VibroSight Vision Options window](#)
The VibroSight Vision Options window allows the general options that are user configurable to be displayed and modified.

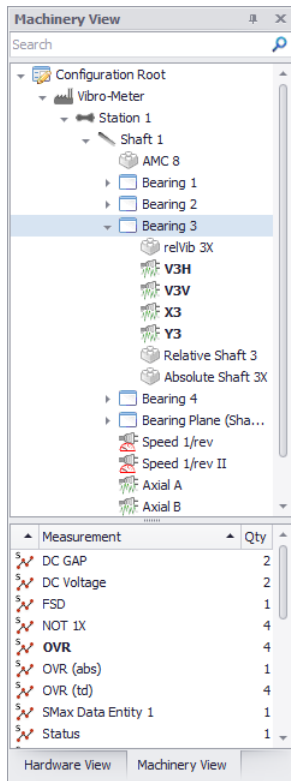
VibroSight Vision Machinery View tool window

The VibroSight Vision Machinery View tool window displays the underlying structure of a VibroSight-based condition monitoring application in terms of the machinery being monitored. It also allows the measurement data (the “what”) to view in a VibroSight Vision plot to be selected.

The Machinery View tool window is on the left of the VibroSight Vision project user interface beside the Hardware View tool window (by default). Both tool windows operate in the same way and either can be used to select the same measurements to view.

As the figure below shows, the hierarchical tree structure displayed in the Machinery View of a VibroSight Vision project corresponds to the Machinery View information entered in VibroSight Configurator. This describes the configuration in terms of the user machinery that is actually being monitored: such as facility units (typically buildings) that house the machinery, machine units (such as a turbine), shafts, stages, bearing planes and ultimately the measurement points.

The Machinery View view is typically more useful when using the VibroSight-based system to perform condition monitoring, so it is displayed when a VibroSight Vision project is created (by default).



VibroSight Vision Machinery View tool window

As the figure above shows, the Machinery View tool window is composed of two panes:

- The top pane displays a hierarchical tree structure from the configuration root (root node) down to the processing block level in terms of the machinery being monitored.

(This corresponds to the Machinery View information entered in VibroSight Configurator.)

When a node or nodes are selected in the top pane, by clicking on them, the bottom pane updates to display the measurements available under these nodes.

- The bottom pane displays the measurements that displays all of the measurements available for the node or nodes selected in the top pane.

(This corresponds to the measurements (extracted data entity) information entered in the Hardware View in VibroSight Configurator.)

When a measurement or measurements are selected in the bottom pane, for example, by double-clicking on them, the measurements are displayed in a compatible VibroSight Vision plot.

The bottom pane of the Machinery View (or Hardware View) tool window contains columns that provide information on the measurements: an icon indicating the type of measurement (data entity), the measurement name (Measurement) and the number of measurements available (Qty). The number of measurements available counts the same types of measurement with the same name that are available in the hierarchical tree structure under the node or nodes selected in the top pane of the Machinery View window. Each of these columns allow the measurements available to be sorted in ascending/descending order by clicking on the title of the column.

The measurements (bottom pane) displayed in the selected (active) plot and the nodes in the hierarchical tree structure (top pane) that contain those measurements are displayed in bold black text in the Machinery View and Hardware View tool windows.

Note:

The Machinery View and the Hardware View tool windows provide two complementary views of the complete system configuration as hierarchical tree structures. And either view can be used to find and specify the same measurements (data entities).

Parent topic: [VibroSight Vision windows](#)

Related reference

[VibroSight Vision Hardware View tool window](#)

[VibroSight measurements](#)

[VibroSight Vision Machinery View and Hardware View keyboard shortcuts and mouse shortcuts](#)

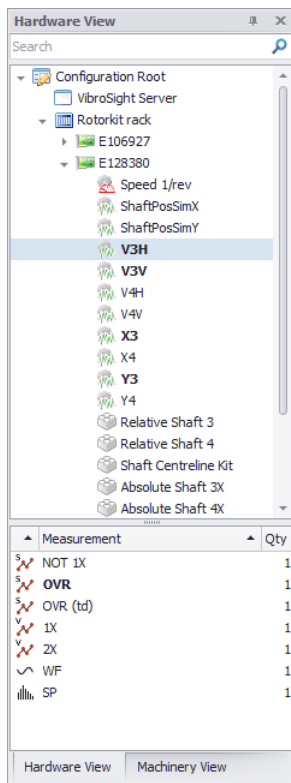
VibroSight Vision Hardware View tool window

The VibroSight Vision Hardware View tool window displays the underlying structure of a VibroSight-based condition monitoring application in terms of the VibroSight-based hardware. It also allows the measurement data (the “what”) to view in a VibroSight Vision plot to be selected.

The Hardware View tool window is on the left of the VibroSight Vision project user interface beside the Machinery View tool window (by default). Both tool windows operate in the same way and either can be used to select the same measurements to view.

As the figure below shows, the hierarchical tree structure displayed in the Hardware View of a VibroSight Vision project corresponds to the Hardware View information entered in VibroSight Configurator. This describes the configuration in terms of the VibroSight-based monitoring equipment deployed: such as the VibroSight Server, VM600 racks and XMx16 cards, and VibroSmart DMS measurement blocks and devices.

The Hardware View is typically more useful when commissioning a VibroSight-based system.



VibroSight Vision Hardware View tool window

As the figure above shows, the Hardware View tool window is composed of two panes:

- The top pane displays a hierarchical tree structure from the configuration root (root node) down to the processing block level in terms of the VibroSight-based hardware.

(This corresponds to the Hardware View information entered in VibroSight Configurator.)

When a node or nodes are selected in the top pane, by clicking on them, the bottom pane updates to display the measurements available under these nodes.

- The bottom pane displays all of the measurements available for the node or nodes selected in the top pane.

(This corresponds to the measurements (extracted data entity) information entered in the Hardware View in VibroSight Configurator.)

When a measurement or measurements are selected in the bottom pane, for example, by double-clicking on them, the measurements are displayed in a compatible VibroSight Vision plot.

The bottom pane of the Hardware View (or Machinery View) tool window contains columns that provide information on the measurements: an icon indicating the type of measurement (data entity), the measurement name (Measurement) and the number of measurements available (Qty). The number of measurements available counts the same types of measurement with the same name that are available in the hierarchical tree structure under the node or nodes selected in the top pane of the Hardware View window. Each of these columns allow the measurements available to be sorted in ascending/descending order by clicking on the title of the column.

The measurements (bottom pane) displayed in the selected (active) plot and the nodes in the hierarchical tree structure (top pane) that contain those measurements are displayed in bold black text in the Hardware View and Machinery View tool windows.

Note:

The Hardware View and the Machinery View tool windows provide two complementary views of the complete system configuration as hierarchical tree structures. And either view can be used to find and specify the same measurements (data entities).

Parent topic: [VibroSight Vision windows](#)

Related reference

[VibroSight Vision Machinery View tool window](#)

[VibroSight measurements](#)

[VibroSight Vision Machinery View and Hardware View keyboard shortcuts and mouse shortcuts](#)

VibroSight Vision Time Range tool window

The VibroSight Vision Time Range tool window allows the time range (the “when”) to use for a VibroSight Vision project to be selected using mutually exclusive modes of operation.

Note:

The selected time range is shared by all plots (and views) in a VibroSight Vision project. That is, when the time range is changed, all of the plots in the project update to use the new time range.

The Time Range tool window is on the right of the VibroSight Vision project user interface beside the Project Explorer tool window (by default).

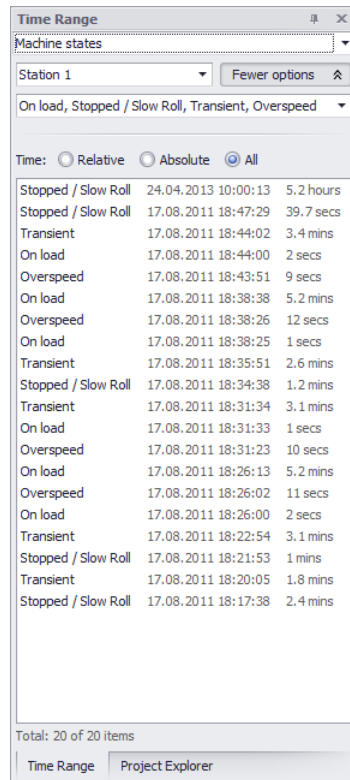
As the figures below show, the Time Range tool window supports different modes of operation that allow the time range to apply to be specified in different ways depending on the data analysis needs of the condition monitoring application.

For work with historical data, the following modes are available: machine states mode, alarms mode and custom historical mode.

For work with live data, the following modes are available: live data mode.

The drop-down list box at the top of the VibroSight Vision Time Range tool window is used to select the mode of operation.

VibroSight Vision Time Range tool window in machine states mode



VibroSight Vision Time Range tool window in machine states mode

Machine states mode is used to specify a time range in terms of the machine states that the machinery being monitored has experienced.

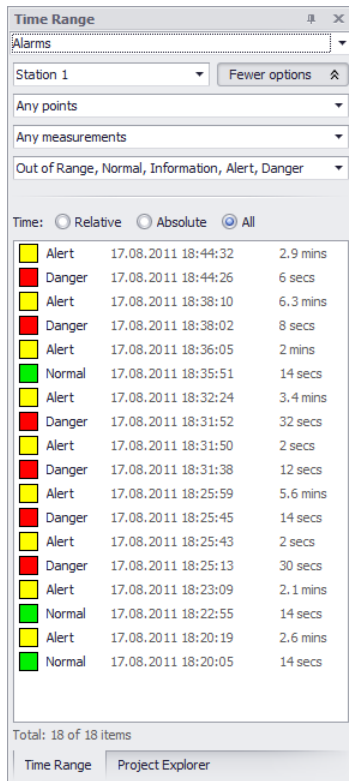
Note:

When working in machine states mode, changes to the Time Range tool window settings automatically and immediately affect the contents of the tool window, that is, the machine states listed in the machine states grid.

A machine state can be used to switch to the custom historical mode, automatically using the dates and times corresponding to the machine state.

The selected machine states (active time range) are indicated by bold black text in the VibroSight Vision Time Range tool window.

VibroSight Vision Time Range tool window in alarms mode



VibroSight Vision Time Range tool window in alarms mode

Alarms mode is used to specify a time range in terms of the severity states (alarms) that the machinery being monitored has experienced.

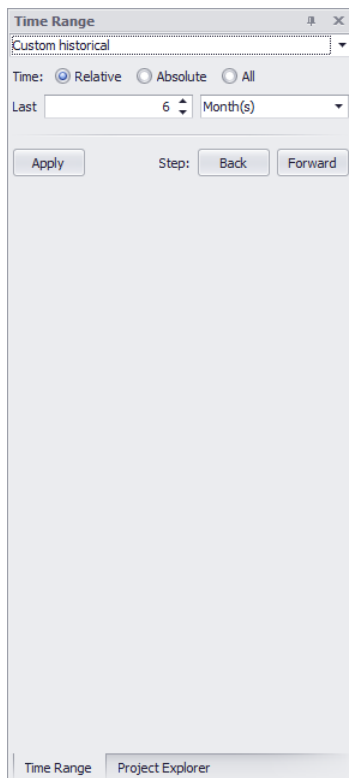
Note:

When working in alarms mode, changes to the Time Range tool window settings automatically and immediately affect the contents of the tool window, that is, the severity states listed in the severity states grid.

A severity state can be used to switch to the custom historical mode, automatically using the dates and times corresponding to the severity state.

The selected severity states (active time range) are indicated by bold black text in the VibroSight Vision Time Range tool window.

VibroSight Vision Time Range tool window in custom historical mode



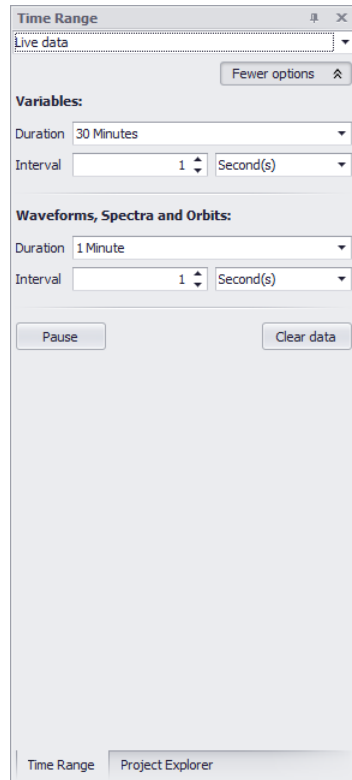
VibroSight Vision Time Range tool window in custom historical mode

Custom historical mode is be used to specify a time range in terms of relative time (from one date and time to another date and time), absolute time (the last x minutes, hours, days, months, or years) or to specify all data.

Note:

When working in custom historical mode, changes to the Time Range tool window settings do not affect the tool window or the VibroSight Vision project until the Apply button is clicked.

VibroSight Vision Time Range tool window in live data mode



VibroSight Vision Time Range tool window in live data mode

Live data mode is used to display the data being streamed directly from the XMx16 condition monitoring cards.

Note:

When working in live data mode, changes to the Time Range tool window settings automatically and immediately affect the VibroSight Vision project.

Parent topic: [VibroSight Vision windows](#)

Related reference

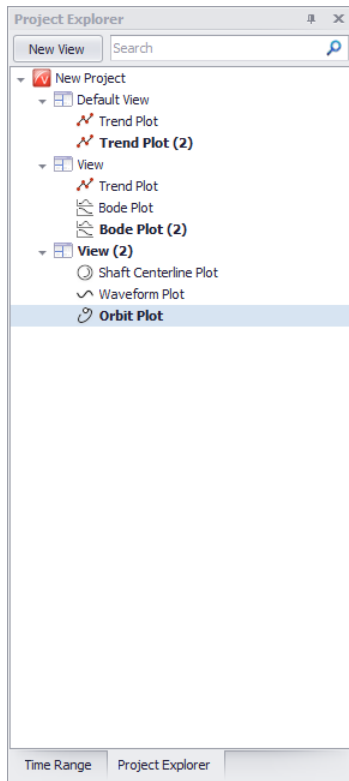
[VibroSight Vision Project Explorer tool window](#)

VibroSight Vision Project Explorer tool window

The VibroSight Vision Project Explorer tool window displays the structure of a VibroSight Vision project in terms of its project views and document windows (plots). It also allows the active project view and the active plot to be selected and displayed in VibroSight Vision.

The Project Explorer tool window is on the right of the VibroSight Vision project user interface beside the Time Range tool window (by default).

As the figure below shows, the Project Explorer tool window displays the views and the plots of a VibroSight Vision project. It also allows the management of the views and the plots, which can be added, renamed, selected, reordered and deleted.



VibroSight Vision Project Explorer tool window

When a VibroSight Vision project is created, it contains one empty project view (Default View) to which plots are added. To help organize the plots in a VibroSight Vision project, additional views can be added as containers for additional plots (like folder and files in a Windows Explorer).

The selected (active) project view and the selected (active) plot in a project view are indicated by bold black text in the VibroSight Vision Project Explorer tool window.

Parent topic: [VibroSight Vision windows](#)

Related reference

[VibroSight Vision Time Range tool window](#)

VibroSight Data Sources Selection dialog box

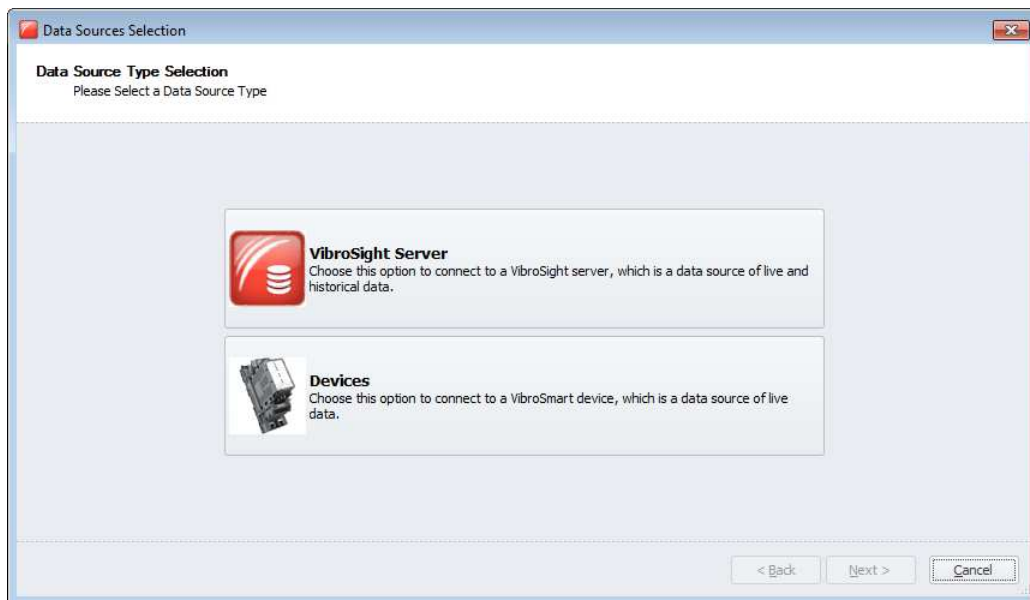
The VibroSight Data Sources Selection dialog box is used to select a data source to be used by VibroSight clients such as VibroSight Mimic, VibroSight Scope and VibroSight Vision.

The VibroSight Data Sources Selection dialog box is automatically displayed in VibroSight clients such as VibroSight Mimic, VibroSight Scope and VibroSight Vision when a new project is being created and the data source must be specified.

The VibroSight Data Sources Selection dialog box is also used in VibroSight clients such as VibroSight Mimic and VibroSight Vision when the data source for a project is changed.

As shown below, a data source can be either:

- A VibroSight Server, that is, measurement data stored in a Sybase SQL Anywhere 11 relational database and accessed via a VibroSight Server.
- VibroSmart DMS devices, that is, live measurement data being streamed directly from DMS modules (such as an VSV300).



VibroSight Data Sources Selection dialog box

Selecting VibroSight Server displays the VibroSight Server Selection page of the Data Sources Selection dialog box, which allows a VibroSight Server to either be selected from the list of VibroSight Servers that the VibroSight software can see on the computer network or specified using an IP address and TCP port number.

Selecting Devices displays the VibroSmart Devices Selection page of the Data Sources Selection dialog box, which allows VibroSmart DMS modules to either be selected from the list of VibroSmart DMS modules that the VibroSight software can see on the computer network or specified using an IP address or host name. Using the Add button displays the VibroSmart Devices Selection dialog box, which allows one or more modules to be selected from the list (Automatic) or specified using an IP address or host name (Manual).

Note:

Data source information is stored in VibroSight client project files, so when a project is opened, it automatically reconnects to the data source that is specified for the project.

Parent topic: [VibroSight Mimic windows](#)

Parent topic: [VibroSight Vision windows](#)

Related concepts

[Data source](#)

Related tasks

[Changing the data source for a VibroSight project](#)

VibroSight Vision Options window

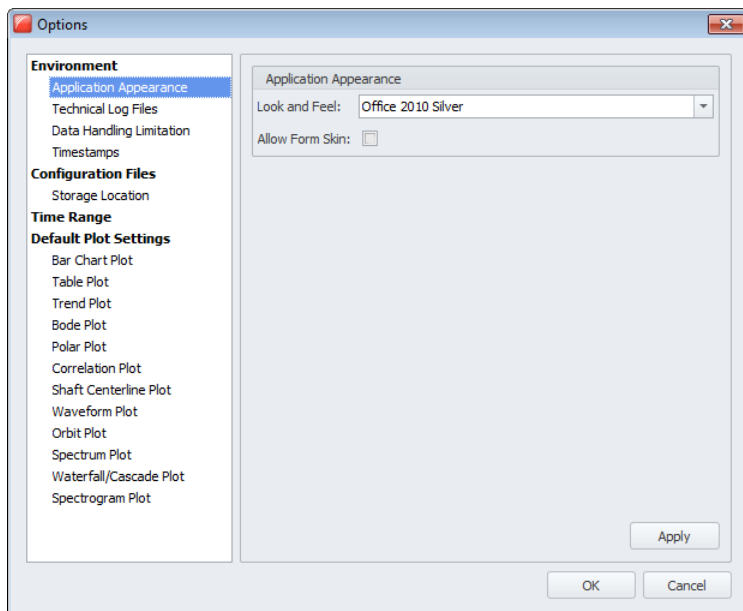
The VibroSight Vision Options window allows the general options that are user configurable to be displayed and modified.

For VibroSight Vision, these general options include some default file locations, data handling display limits for plots, access rights and default plot settings.

Note:

Most of these general options are local to the VibroSight Vision software module, however, the access rights access option is common to all VibroSight software modules that implement access rights.

As the figure below shows, the VibroSight Vision Options window consists of two panes: the left pane organises the options by function and allows a particular option to be selected, while the right pane displays the settings for the option selected in the left pane.



VibroSight Vision Options window

Environment

Application Appearance

Use these controls to change the default appearance of the VibroSight Vision software.

Technical Log Files

Use the Log File Name control to navigate the folders on the computer and select in which folder and under what file name to save the VibroSight Vision log file (*.xlog). However, it is recommended that the default folder and file are used.

Use the Log Level option buttons to select the level of detail that is written to the VibroSight Vision log file:

- Off (no information is written, the least processing overhead)
- Fatal
- Error
- Warning
- Information
- Debug
- Trace (lots of information is written, the most processing overhead).

Data Handling Limitation

Use the Variables control to limit the number of points per measurement to be displayed in a static plot document window.

Use the Dynamic data control to limit the number of waveforms, spectra or orbits per measurement to be displayed in a dynamic plot document window.

Note:

Smaller numbers (lower processing overhead) improve the system response time but reduce the resolution of the plots.

Timestamps

Use the Default time zone drop-down list box to select the default timestamps format (date and time) to be used when displaying timestamps in VibroSight Vision: Site time, UTC or Local computer time.

Configuration Files

Storage Location

Use the Default Storage Location control to navigate the folders on the computer and select in which folder to save configuration files. However, it is recommended that the default folder is used.

Time Range

Time Range

When using the alarms historical data mode of the VibroSight Vision Time Range tool window, select Add data before and after the alarm and use the before and after controls to add fixed periods of time before and/or after the time ranges defined by the severity states (alarms).

This allows the measurement data stored in the VibroSight Server database to be accessed, retrieved and displayed in terms of time ranges defined by the alarms with additional time immediately before and/or after the alarms (rather than in terms of time ranges defined by the duration of the alarms only). For example, this can be used to automatically include the time before an alarm in order to help identify the machinery conditions that caused the alarm.

Note:

By default, the Add data before and after the alarm option is selected to add 5 minutes before an alarm and 5 minutes after an alarm.

A minimum of 0 and a maximum of 24 hours can be added before/after an alarm.

Default Plot Settings

Default Plot Settings

These controls are common to all types of VibroSight Vision plot and change the default plot settings that are common to all types of plot.

Note:

Click Default Plot Settings in the Options window (left pane) to display the common controls available (right pane).

The controls (right pane) are common to all types of VibroSight Vision plot.

For each type of VibroSight Vision plot

Use the controls available for each individual type of VibroSight Vision plot to change the default plot settings for that type of plot.

Note:

For each type of plot in the Options window (left pane), the control headings used (right pane) correspond to the tabs used in the Plot Properties window for the type of plot.

The controls (right pane) are local to each type of VibroSight Vision plot.

Parent topic: [VibroSight Vision windows](#)

Related tasks

[Setting Options](#)

Safety

Important remarks on safety



For the VibroSight-compatible hardware being used, refer to and carefully read each relevant hardware manual and observe the safety instructions before using the equipment. Important safety information is included in the following manuals:

- **VM600 CMS hardware manual (MSS document ref. MACMS-HW).**
- **VM600 MPS hardware manual (MSS document ref. MAMPS-HW).**
- **VibroSmart DMS hardware manual (MSS document ref. MADMS-HW).**

Every effort has been made to include specific safety-related procedures in Meggitt Sensing Systems (Meggitt SA) manuals using the symbols described below. However, operating personnel are expected to follow all generally accepted safety procedures.

Safety procedures should be communicated to all personnel who are liable to operate the equipment described in these manuals.

Meggitt Sensing Systems does not accept any liability for injury or material damage caused by failure to obey any safety-related instructions or due to any modification, transformation or repair carried out on the equipment without written permission from Meggitt SA. Any modification, transformation or repair carried out on the equipment without written permission from Meggitt SA will invalidate any warranty.

Symbols used in Meggitt Sensing Systems manuals

The following symbols are used in manuals from Meggitt SA where appropriate:



The WARNING safety symbol.

This introduces directives, procedures or precautionary measures which must be executed or followed. Failure to obey a warning can result in injury to the operator or third parties.



The CAUTION safety symbol.

This draws the operator's attention to information, directives or procedures which must be executed or followed. Failure to obey a caution can result in damage to equipment.



The ELECTROSTATIC SENSITIVE DEVICE symbol.

This indicates that the device or system being handled can be damaged by electrostatic discharges. Refer to [Handling Precautions for Electrostatic Sensitive Devices](#) for further information.

Note: The NOTE symbol draws the operator's attention to complementary information or advice relating to the subject being treated.

VM600 system introduction

A VM600 machinery monitoring system can be used for two different but complementary purposes in industrial applications: **Machinery Protection Systems (MPSs)** and/or **Condition Monitoring Systems (CMSs)**. Depending on the specific application, different hardware and software will be used.

The VM600 machinery monitoring system is intended primarily for vibration monitoring to ensure the protection of rotating machinery or for monitoring the condition of rotating machinery in order to perform predictive maintenance in, for example, the power generation, petrochemical and petroleum industries as well as marine-related applications.

VM600 racks

Every system is composed of a VM600 rack ([VM600 system rack \(ABE04x\)](#) (6U) or [VM600 slimline rack \(ABE056\)](#) (1U)) with a power supply and one or several processing cards (AMC8, MPC4, XMC16, XMV16), with their corresponding interface cards (IOC8T, IOC4T, XIO16T). Optionally, the system can include relay cards (IRC4, RLC16) and/or a “rack controller” (CPUM) that supports Ethernet-based communications for a networked VM600 system.

The architecture of a VM600 rack is always the same, independent of the specific rack type used. A [backplane](#) in the middle of the rack connects the processing cards in the front card cage and interface cards in the rear card cage. This backplane allows the front card to communicate with its interface card and supports access to the [buses](#) common to all the slots in the rack.

Note:

The bus availability depends on the type of VM600 rack used. Refer to [Bus Availability](#) for more information.

VM600 card suitability

The following table shows which VM600 cards are available according to the application.

Type of system	Available cards
Machinery protection system (MPS)	AMC8/IOC8T, CPUM, IRC4, MPC4/IOC4T, RLC16
Condition monitoring system (CMS)	CPUM/IOCN, CMC16/IOC16T, XMV16/XIO16T, XMC16/XIO16T

VM600 rack suitability

Not all of the VM600 cards can be used in any VM600 rack and there are some restrictions that must be respected. The following table shows which cards can go into which rack.

Card	ABE04x system rack	ABE056 slimline rack
AMC8 / IOC8T	√	√
CMC16 / IOC16T	√	

CPUM / IOCN	√	
IRC4	√	√
MPC4 / IOC4T	√	√
RLC16	√	√
RPS1U		√
RPS6U	√	
XMC16 / XIO16T	√	√
XMV16 / XIO16T	√	√

VM600 slimline rack (ABE056)

The VM600 slimline rack (ABE056) is a smaller rack used to house hardware from the VM600 series of machinery protection systems (MPSs) or condition monitoring systems (CMSs), for applications where only one processing card is required.

The ABE056 is a 19" rack with a height of 1U and can contain one type of processing card depending on the application. There is one slot in the front cage for a processing card and two slots in the rear card cage: one for the input/output card associated with the processing card and one for an optional relay card.

Note:

As the CMC16 / IOC16T pair requires a CPUM to support Ethernet-based communications, these CMS cards cannot be used with an ABE056 rack.

However, the XMC16 / XIO16T and XMV16 / XIO16T card pairs can be used in an ABE056 rack as they have direct (on-board) gigabit Ethernet communications.

The following figure shows an example of a VM600 slimline rack (ABE056) containing a single processing card in order to provide either machinery protection or condition monitoring capabilities.



VM600 system in an ABE056 slimline rack (1U)

- [**RPS1U rack power supply**](#)

The ABE056 slimline rack is equipped with an RPS1U power supply. Versions adapted to AC and DC mains supply are available.

Related reference

[Attribution of slots in a VM600 rack](#)
[VM600 system rack \(ABE04x\)](#)

RPS1U rack power supply

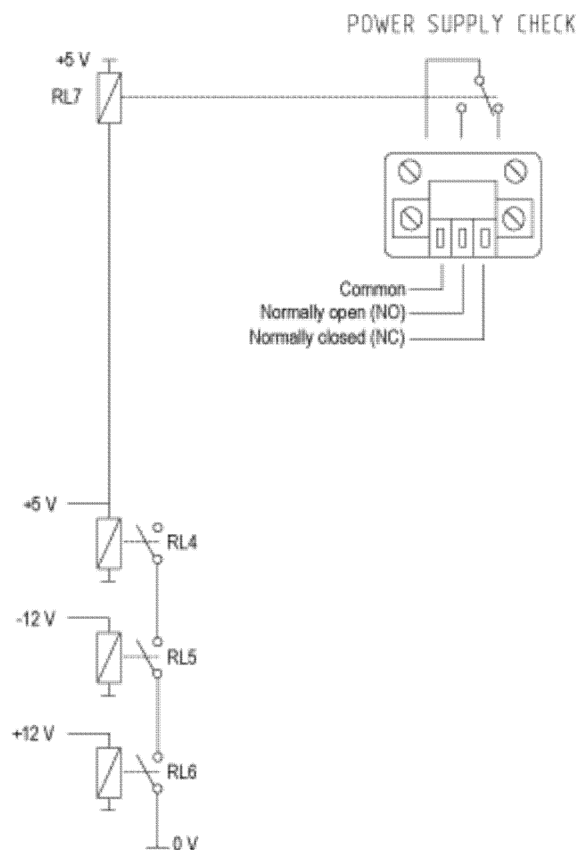
The ABE056 slimline rack is equipped with an RPS1U power supply. Versions adapted to AC and DC mains supply are available.

The RPS1U rack power supply is used with an appropriate connection panel mounted at the rear of the rack to allow the connection of AC and/or DC mains power to the rack.

Note: Unlike the RPS6U rack power supply, the RPS1U is integrated into the [VM600 slimline rack \(ABE056\)](#) and cannot be sold separately.

Power supply check relay

The POWER SUPPLY CHECK relay on the rear panel provides an indication that the +5V, +12V and -12V supplies are being correctly delivered by the RPS1U rack power supply to the backplane. The relay has three terminals, defined from left to right as Common, NO and NC, as shown on the following figure. The other components shown in the diagram are mounted on the rack backplane.



RPS1U rack power supply check relay

Parent topic: [VM600 slimline rack \(ABE056\)](#)

VM600 system rack (ABE04x)

The VM600 system rack (ABE04x) is the standard rack used to house hardware from the VM600 series of machinery protection systems (MPSs) and/or condition monitoring systems (CMSs).

The ABE04x is a 19" rack with a height of 6U and can contain various types of processing cards depending on the application.

The following figure shows an example of a VM600 system rack (ABE04x) containing a combination of processing cards in order to provide both machinery protection and condition monitoring capabilities.



VM600 system in an ABE04x system rack (6U)

- [**RPS6U rack power supply**](#)

The ABE04x system rack must be equipped with either one or two RPS6U rack power supplies. If two are present, this is known as a redundant configuration. Versions for AC input and DC input mains power are available.

Related reference

[Attribution of slots in a VM600 rack](#)
[VM600 slimline rack \(ABE056\)](#)

RPS6U rack power supply

The ABE04x system rack must be equipped with either one or two RPS6U rack power supplies. If two are present, this is known as a *redundant* configuration. Versions for AC input and DC input mains power are available.

A RPS6U rack power supply must be used with the appropriate connection panel mounted at the rear of the rack. Several types of these associated rear panels exist. They allow the connection of AC input and DC input mains power to the rack. The following figure shows the front panel of an RPS6U rack power supply and the corresponding connection rear panel for a non-redundant AC input version.



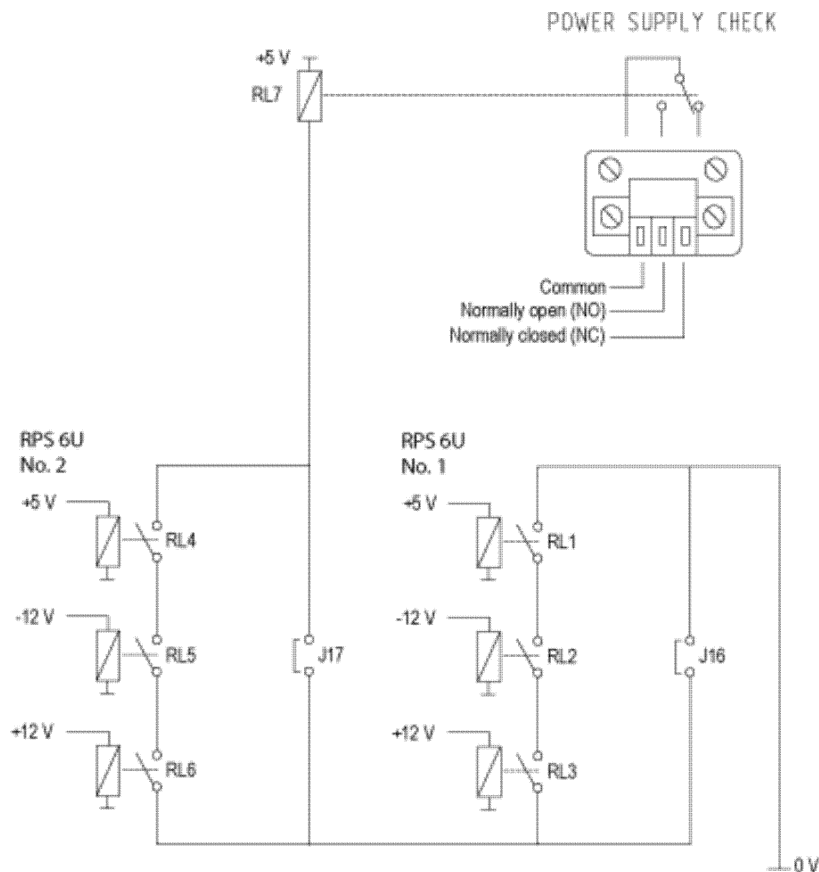
front view (left) and rear view (right) of an RPS6U rack power supply

Power supply with an AC input

With reference to the image above, LED 1 shows green when the RPS6U input voltage is OK (that is, the external mains supply is OK) and LEDs 2-4 show orange when the output voltages indicated are correctly produced.

Power supply check relay

The POWER SUPPLY CHECK relay on the rear panel provides an indication that the +5V, -12V and +12V supplies are being correctly delivered by the RPS6U rack power supply or supplies to the backplane. The relay has three terminals, defined from left to right as Common, NO and NC. The other components shown in the diagram are mounted on the rack backplane.



RPS6U rack power supply check relay

Note:

1. General remarks:

Jumpers 16 and 17 have to be set according to which RPS6U units are used (No. 1, No. 2 or both).

Relays RL1 to RL6 are closed when the corresponding supply voltage (+5V, +12V or -12V) is present and correct.

When no problem is detected, relay R7 is energised and contact is made between the common and NO contacts.

If a problem is detected, relay R7 is de-energised and contact is made between the Common and NC contacts.

2. When only RPS6U number 1 is installed (slots 15-17):

Jumpers 16 must be closed

Jumpers 17 must be left open.

3. When only RPS6U number 2 is installed (slots 18-20):

Jumpers 16 must be closed

Jumpers 17 must be left open.

4. When both RPS6U (numbers 1 and 2) units are installed:

umper 16 must be left open

umper 17 must be left open.

- [ASPS auxiliary sensor power supply](#)

The auxiliary sensor power supply (ASPS) has two 24 VDC outputs for use with a VM600 system rack (ABE04x), from Meggitt Sensing Systems Vibro-Meter product line.

Parent topic: [VM600 system rack \(ABE04x\)](#)

ASPS auxiliary sensor power supply

The auxiliary sensor power supply (ASPS) has two 24 V_{DC} outputs for use with a VM600 system rack (ABE04x), from Meggitt Sensing Systems Vibro-Meter product line.

The ASPS is mounted in the rear of a VM600 system rack (ABE04x), adjacent to the rear panel of an AC input RPS6U rack power supply from which it takes an AC mains supply. Internally, each 24 V_{DC} output consists of two AC-DC converters wired in parallel to ensure high availability, while the dual independent outputs can provide redundancy.

The ASPS is designed to power external hardware such as front-end transducers and signal conditioners, SI-type galvanic separation units and other hardware requiring a + 24 V_{DC} power supply.

Installed in a VM600 system rack (ABE04x), the ASPS can replace an AC-DC converter mounted externally, thereby reducing wiring and simplifying the installation.

Parent topic: [RPS6U rack power supply](#)

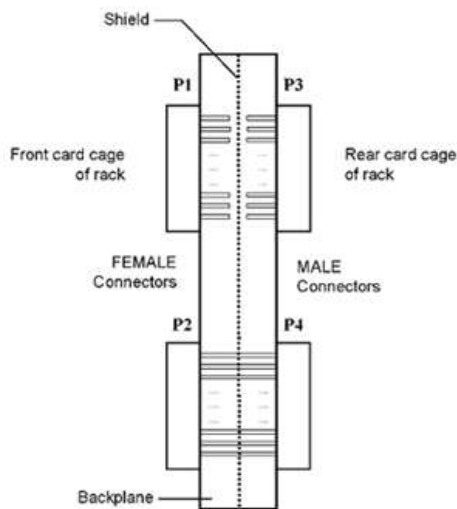
VM600 rack backplane

The VM600 system rack (ABE04x) and the VM600 slimline rack (ABE056) implement a custom-designed backplane combining features of a VME backplane and features special to Meggitt Sensing Systems.

Connectors

The backplane consists of three different systems. The following figure shows a cross-section of the backplane illustrating the system features supported by each connector:

- A VME bus on connector P1
- Through connections between connectors P2 and P4
- An analog bus on connector P3.



VM600 rack backplane (cross-sectional view)

The P1 connector, on the front of the backplane (in the front card cage), supports the standard VME bus. This bus corresponds to the VME 16 specifications and allows 24-bit address and 16-bit data transfers between cards in the VM600 rack.

The P2 connector is used to connect the card in the front card cage to the card immediately behind it in the rear card cage. That is, there are direct connections between connectors P2 and P4 for slots 0 to 14 in the VM600 system rack (ABE04x).

However, slot 15 and slot 18 of the VM600 system rack (ABE04x) are reserved for RPS6U rack power supplies. The backplane in these slots is equipped with special high-current connectors (type H15) specifically for these power supplies.

Buses

The P3 connector incorporates the following three buses:

1. Tacho Bus

This is composed of 6 lines. These lines have passive terminations.

The Tacho Bus is common to all slots in a VM600 rack. It is intended for the transfer of tacho and phase reference signals between cards.

2. Raw Bus

This is composed of 32 x 2 lines. These lines do not have terminations.

The Raw Bus is common to all slots in a VM600 rack.

3. Open Collector Bus

This is composed of 96 open collector ("ground/open") lines. These lines do not have terminations.

The Open Collector Bus is sub-divided into six buses each having 16 lines (called OC Bus A, OC Bus B, OC Bus C, OC Bus D, OC Bus E, and OC Bus F). Each of these six buses is

associated with three slots (with each slot associated with only one bus).

Note:

The Tacho Bus, Raw Bus and Open Collector Bus are all available on the VM600 system rack (ABE04x) but only the Open Collector Bus is available on the VM600 slimline rack (ABE056).

The Tacho Bus, Raw Bus and Open Collector Bus are not "buses" in the computing sense of the term (that is, there is no protocol, handshaking, timing and so on). They should be thought of as groups of lines that can be used to transmit signals.

Related reference

[Bus availability](#)

Bus availability

Up to three different buses are used in the VM600 racks from Meggitt Sensing SystemsMeggitt Sensing Systems Vibro-Meter product line the Tacho Bus, the Raw Bus and the Open Collector Bus.

However, each bus is not always implemented or required. The accessibility depends on the specific type of VM600 racks and the type of VM600 cards used. The following table shows which buses are available in the different VM600 racks.

Bus	VM600 system racks (ABE04x)	VM600 slimline rack (ABE056)
Tacho Bus	√	Not supported
Raw Bus	√	Not supported
Open Collector Bus	√	√

The following table shows the access possibilities to the different VM600 buses for the different VM600 cards available. Depending on the type of card, signals can be routed *to* and/or *from* a particular bus:

Bus	VM600 CMS / CMC16 card	VM600 MPSx / AMC8 card	VM600 MPSx / MPC4 card	VibroSight / XMV16 or XMC16 card	VibroSight / XMVS16 card
Tacho Bus	rom	To/ rom	To/ rom	To/ rom	To/ rom
Raw Bus	rom	To	To	To/ rom	No access possible
Open Collector Bus	Not supported	To	To	Not supported	Not supported

- [Tacho Bus](#)

The Tacho Bus has six lines and is common to all slots in the rack. It is intended for the transfer of tachometer (speed) signals between cards. A signal on a given Tacho Bus line may be used by more than one card.

- [Raw Bus](#)

The Raw Bus is a flexible bus that contains 64 parallel bus lines allowing the transfer of data between various cards in a VM600 rack.

- [Open Collector Bus](#)

The Open Collector (OC) Bus is reserved for sending alarm signals from a processing card

pair such as an MPC4 / IOC4T or AMC8 / IOC8T to a relay card such as an IRC4 or RLC16.

Related reference

[VM600 rack backplane](#)

[Tacho Bus](#)

[Raw Bus](#)

[Open Collector Bus](#)

Tacho Bus

The Tacho Bus has six lines and is common to all slots in the rack. It is intended for the transfer of tachometer (speed) signals between cards. A signal on a given Tacho Bus line may be used by more than one card.

Tachometer signals may be put onto the Tacho Bus from XMV16 or XMC16 cards. This is done using multiplexers under software control (software configurable).

or each XMV16 / XIO16T or XMC16 / XIO16T card pair, up to four tachometer channels can be routed as a TTL-signal (after analog pulse processing on the board) to any of the Tacho Bus lines from 1 to 6.

Note:

or information on which VM600 racks and cards support the Tacho Bus, see the [Bus availability](#) topic in this help.

Parent topic: [Bus availability](#)

Related reference

[Bus availability](#)

[Raw Bus](#)

[Open Collector Bus](#)

Raw Bus

The Raw Bus is a flexible bus that contains 64 parallel bus lines allowing the transfer of data between various cards in a VM600 rack.

The VM600 system rack (ABE04x) contains a single bus of this type while the VM600 slimline rack (ABE056) does not support this bus (as it can only contain one processing card).

The principal applications of the Raw Bus are:

- Send raw analog input signals to other cards in the VM600 rack, either condition monitoring or machinery protection cards.
- Supplement the Open Collector Bus by allowing additional alarm signals to be routed to the relay cards. (The Raw Bus is common to all cards at the back of the VM600 rack located in slots 1 to 18.)

Signals can be placed on or taken from the Raw Bus. This can be configured in the software.

Note:

or information on which VM600 racks and cards support the Raw Bus, see the [Bus availability](#) topic in this help.

Parent topic: [Bus availability](#)

Related reference

[Bus availability](#)

[Tacho Bus](#)

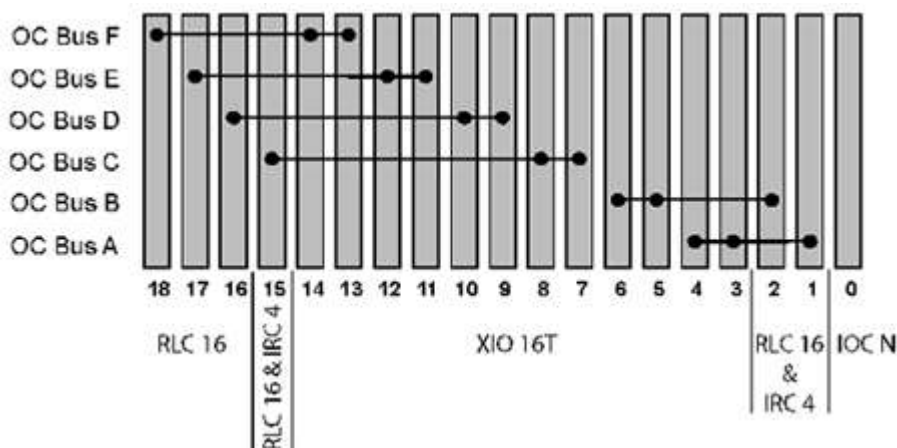
[Open Collector Bus](#)

Open Collector Bus

The Open Collector (OC) Bus is reserved for sending alarm signals from a processing card pair such as an MPC4 / IOC4T or AMC8 / IOC8T to a relay card such as an IRC4 or RLC16.

Each Open Collector Bus, named OC Bus A to OC Bus F, contains 16 parallel bus lines and is a dedicated bus linking one specific relay card to two specific processing cards. These signals are then used to switch relays on the relay card.

The following figure shows the six Open Collector Buses (OC Bus A to OC Bus F) and the slots from which they are accessible:



Open Collector Bus access (rear panel view)

The attribution of a specific alarm signal (for example, generated by an MPC4 / IOC4T or AMC8 / IOC8T card pair) to an Open Collector Bus line (OC Bus x) is done using the VibroSight Configurator software.

Note:

or information on which VM600 racks and cards support the Open Collector (OC) Bus, see the [Bus availability](#) topic in this help.

Parent topic: [Bus availability](#)

Related reference

[Bus availability](#)

[Tacho Bus](#)

[Raw Bus](#)

Attribution of slots in a VM600 rack

Not every VM600 card is compatible with every slot of a VM600 rack.

Some cards require more than a single slot width and certain restrictions apply to the VM600 racks:

- A VM600 system rack (ABE04x) has all slots available (that is, from slot 0 to 20).
- A VM600 slimline rack (ABE056) has one front slot (slot 3) and 2 rear slots available.

Attribution of slots in a VM600 system rack (ABE04x)

The table below shows the installation restrictions that apply to the ABE040 and ABE042 racks.

VME slot no.	Card/system component accepted in front card cage	Card/system component accepted in rear card cage
0	Reserved for CPUM (width of component 2 slots) or CPUR (width of component 1 slot)	Reserved for associated IOCN or IOCR
1		Reserved for associated IOCR. Or RLC16 or IRC4.
2	Reserved for VME 32 card	RLC16 or IRC4
3 - 14	MPC4, AMC8, CMC16, XMV16 or XMC16	Associated IOC4T, IOC8T, IOC16T or XIO16T. Or RLC16 or IRC4.
15	Reserved for RPS6U (power supply 2, PS2, width of component 3 slots)	RLC16 or IRC4
16		RLC16
17		RLC16
18	Reserved for RPS6U (power supply 1, PS1, width of component 3 slots)	RLC16
19		Reserved for rear panel associated with the rack power supply (one or two RPS6Us)
20		

Notes:

- A CPUM card can have an IOCN card installed directly behind it in the rack.
- An CPUR card must have an IOCR card installed directly behind it in the rack.
- An MPC4 card must have an IOC4T card installed directly behind it in the rack.
- An AMC8 card must have an IOC8T card installed directly behind it in the rack.
- A CMC16 card must have an IOC16T card installed directly behind it in the rack.
- An XMV16 or XMC16 card must have an XIO16T card installed directly behind it in the rack.

- One or two RPS6U rack power supplies can be installed in a VM600 system rack. A rack can have two RPS6U rack power supplies installed for different reasons: in order to support rack power supply redundancy or in order to supply power to the cards. Contact Meggitt Sensing Systems for further information.

Attribution of slots in a VM600 slimline rack (ABE056)

The table below shows the installation restrictions that apply to the ABE056 rack.

VME slot no.	Card/system component accepted in front card cage	Card/system component accepted in rear card cage
1	None	RLC16
3	MPC4, AMC8, XMV16 or XMC16	Associated IOC4T, IOC8T or XIO16T

Notes:

- An MPC4 card must have an IOC4T card installed directly behind it in the rack.
- An AMC8 card must have an IOC8T card installed directly behind it in the rack.
- An XMV16 or XMC16 card must have an XIO16T card installed directly behind it in the rack.
- A single RPS1U rack power supply is integrated in a VM600 slimline rack.

Related reference

[VM600 system rack \(ABE04x\)](#)

[VM600 slimline rack \(ABE056\)](#)

General networking aspects

A number of possibilities exist for communicating with a VM600 rack.

The exact method that you choose depends on your application and the actual rack and cards from the Meggitt Sensing Systems Vibro-Meter product line that you have specified.

For example, the XMV16 / XIO16T and XMC16 / XIO16T card pairs support gigabit Ethernet communications directly using on-board Ethernet controllers.

Older VM600 cards, such as the CMC16 and the MPC4 require the CPUM card in order to support Ethernet communications.

Network types

The two principal network types, LAN and WAN, are presented here.

Local area network

A local area network (LAN) is a computer network that is usually limited to short distances, such as home or office networks. They are owned by the organization that uses them. The characteristics of

such networks include their high data transfer rates, small physical area and lack of need for leased telecommunication lines.

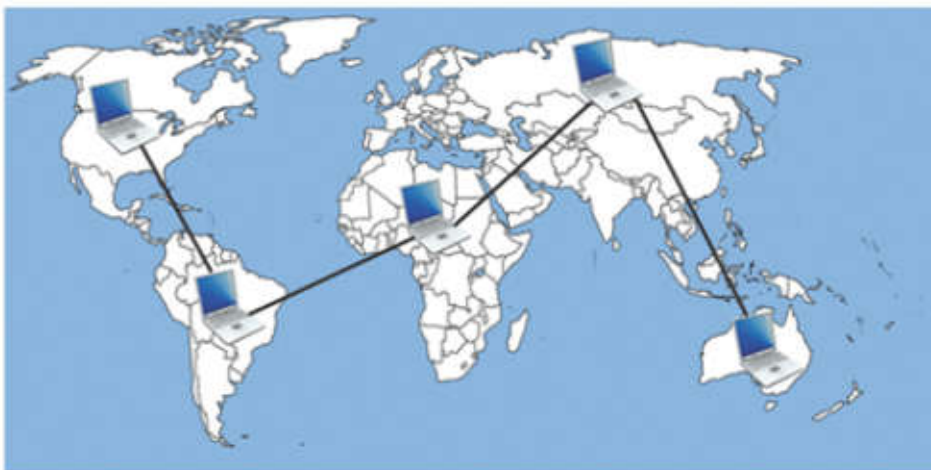


A local area network

Wide area network

A wide area network (WAN) is a computer network that cover extremely large areas (the link can cross different cities, regions, countries or continents). They are owned by major communication companies. The largest and most well-known example of a WAN is the Internet.

WANs are used to connect LANs and other types of network together, so that computers in one location can communicate with another computer in another location. The most common protocol in WANs is TCP/IP.



A wide area network

Connectivity within networks

Devices such as hubs, switches, routers and gateways can be found in networks.

- **Hub**

A common connection point for devices in a network. Hubs are commonly used to connect segments of a LAN. A hub contains multiple ports. When a packet arrives at one port, it is

copied to the other ports so that all segments of the LAN can see all packets. The availability of low-cost network switches has largely made hubs obsolete but they are still seen in older installations and more specialized applications.

- **Switch**

A network device that cross-connects clients, servers and network devices. Also known as a "frame switch", stand-alone LAN switches are common in all Ethernet networks. A four-port switch is also typically built into a wired or wireless router for homes and small businesses.

- **Router**

A router is a network device that forwards packets from one network to another. Based on internal routing tables, routers read each incoming packet and decide how to forward it.

Most routers in homes and small offices do nothing more than direct Web, email and other Internet transactions from the local network to the cable or DSL modem, which is connected to the internet service provider and to the internet.

In larger companies, routers are also used to separate local area networks (LANs) into subnetworks (subnets) in order to balance traffic within workgroups and to filter traffic for security purposes and policy management.

- **Gateway**

A network gateway converts packets from one protocol to another. A protocol translation/mapping gateway interconnects networks with different network protocol technologies by performing the required protocol conversions.

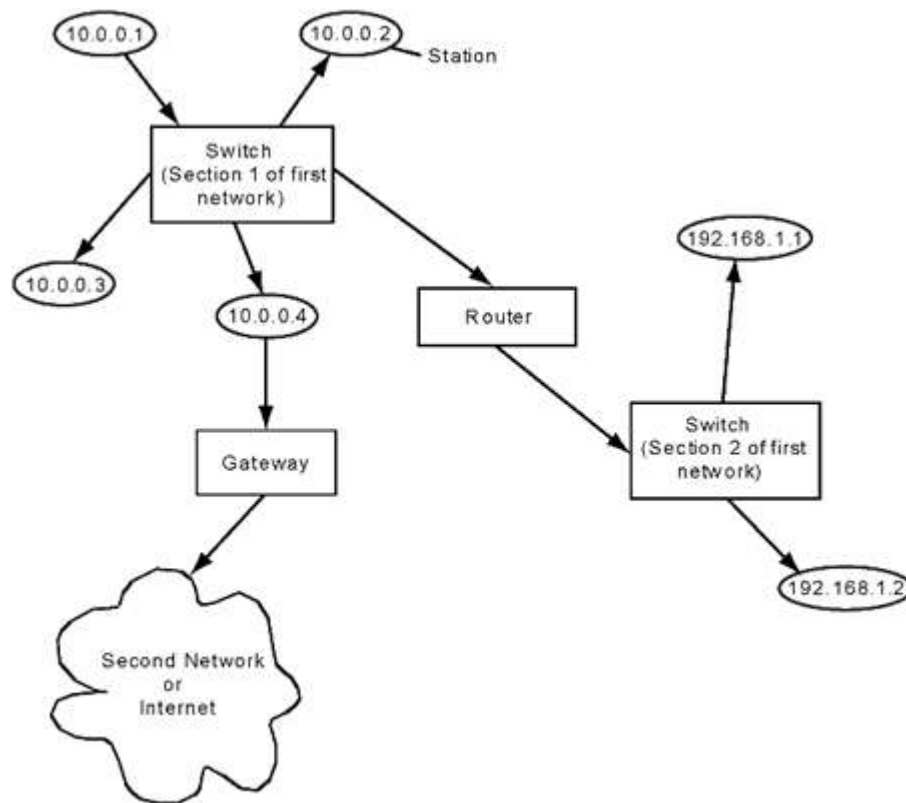
A device that acts as an intermediary between two or more networks using the same protocols. In this case, the gateway functions as an entry/exit point to the network. Transport protocol conversion may not be required, but some form of processing is typically performed.

A router is an example of a special type of gateway.

- **Firewall**

A firewall filters (allows or blocks) traffic into and out of a private network or the user's computer. Firewalls are widely used to give users secure access to the Internet as well as to separate a company's public Web server from its internal network. Firewalls are also used to keep internal network segments secure. For example, the accounting network might be vulnerable to snooping from within the enterprise.

In homes, a personal firewall is typically software that is installed on the user's computer. In organizations, a firewall can be a stand-alone machine or software in a router or server. It can be as simple as a single router that filters out unwanted packets, or it may comprise a combination of routers and servers each performing some type of firewall processing.



A typical network using various network devices

Ethernet

Ethernet provides a method for high-bandwidth communication between devices on a LAN. It is presently the most commonly used protocol.

The original Ethernet specification served as a basis for the IEEE 802.3 standard. This designates both physical transmission media and the method of transmission along the media.

Over 20 variations of Ethernet are presently available. The ones most applicable to the Meggitt Sensing Systems VM600 product line are:

- 10BASE-T

Operates at 10 Mbps and uses baseband transmission methods

Uses the least expensive cable type, that is, shielded twisted pair (STP) or unshielded twisted pair (UTP) cable. Most networks use UTP

Maximum cable segment length is 100 meters

Cables use RJ-45 connectors

Star or star-bus topology is created, with systems connected to each other using hubs

Easy to expand.

- 100BASE-T (Fast Ethernet)

Operates at 100 Mbps and uses baseband transmission methods

Variants depending on physical transmission media are:

100BASE-TX (2 pairs of high-quality twisted pairs, allowing full duplex transmission)

100BASE-T4 (4 pairs of normal-quality twisted pairs)

100BASE-X (2 multimode fiber optic cables)

Star topology, therefore requires a hub.

- 1000BASE-T (1 Gbit Ethernet)

Operates at 1000 Mbps (1 Gbps) and uses baseband transmission methods

Used mainly for network backbones or server-to-server connections (clustering)

Variants depending on physical transmission media are:

1000BASE-X used in industry to refer to gigabit Ethernet transmission over fiber

1000BASE-T is a standard for gigabit Ethernet over copper wiring

1000BASE-CX is an initial standard for gigabit Ethernet connections over copper cabling with maximum distances of 25 meters using balanced shielded twisted pair

The transmission distance depends on the physical transmission media.

Note: The Ethernet interfaces used by the VM600 product line are as follows:

- 100BASE-T: on older cards such as the CPUM
- 1000BASE-T: on newer cards such as the XMV16, XMC16 and XIO16T.

Network protocols

There are two important network protocols when it comes to the VM600: TCP/IP (Transmission Control Protocol / Internet Protocol) and the PPP (Point-to-Point Protocol).

The TCP/IP protocol

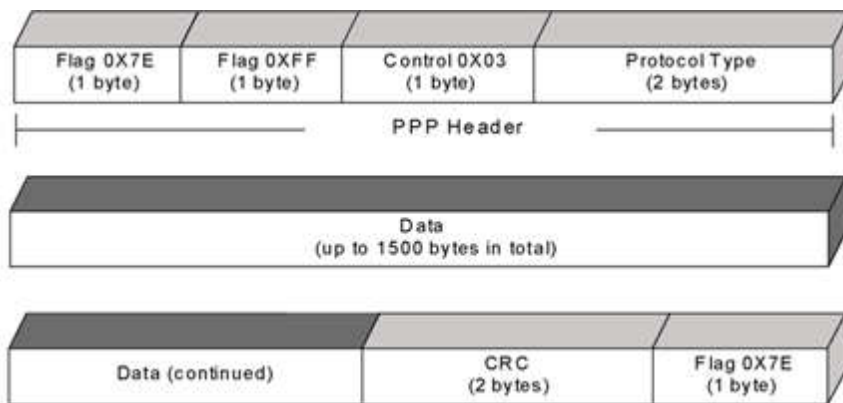
- The most widely used protocol suite in the world (as used on the Internet)
- Most major network operating systems (NOSs) support the use of TCP/IP
- Originally designed for WAN use and now commonly used for LANs as well
- Routable protocol that offers true internetworking and interoperability between disparate NOSs
- Dynamic Host Configuration Protocol (DHCP) allows automatic IP address assignment
- Not as fast as NetBEUI (a proprietary Microsoft networking protocol) on small networks
- Provides full internetwork routing support.

The PPP protocol

- Developed in the early 1990s

- Designed to overcome the problems with Serial Line Internet Protocols (SLIP)
- Can be used with Internet Protocols (IP), Internetwork Packet Exchange (IPX) protocol and NetBEUI
- Includes cyclic redundancy check (CRC) for error checking
- Includes compression so it does not have to rely on hardware compression.

The structure of a PPP frame is shown in the following figure:



The PPP frame format

IP addressing

Internet Protocol (IP) addresses can be of three different types and they must respect several rules.

Basic rules

- Each network must have a unique network address
- Each computer on a network must have a unique host address
- Your IP address must be unique to the rest of the network
- Never use an IP address not assigned to you if you are going to be connected to a network, such as the Internet.

IP addressing and address classes

Internet Protocol (IP) addressing uses a 32-bit (4-byte) address that consists of two parts:

- Network number
- Host number.

Each byte is converted into a decimal number between 1 and 255 that is separated by dots (periods). This is known as dot-decimal notation. For example, 100.100.100.100 is an IP address.

Three common IP address classes exist and they have the following characteristics:

IP Address Class	Supports	Address Format
Class A	Approximately 16 million hosts on each of 127 networks	Network.Host.Host.Host
Class B	Approximately 65 000 hosts on	Network.Network.Host.Host

	each of approximately 16 000 networks	
Class C	Supports 254 hosts on each of approximately 2 million networks	Network.Network.Network.Host

Subnets and subnet masks

Subnets allow you to subdivide a larger network into smaller, more manageable units. You must provide a subnet mask (also known as a netmask).

Benefits of subnetting include:

- Reduced network traffic by selecting the path any information has to be sent to
- Optimised network performance
- Simplified management
- Facilitates spanning large geographical distances.

The default subnet masks (also known as "natural masks") are:

Default Subnet Mask	Decimal	Hexadecimal	Binary
Class A	255.0.0.0	.00.00.00	11111111.00000000.00000000.00000000
Class B	255.255.0.0	. . .00.00	11111111.11111111.00000000.00000000
Class C	255.255.255.0	00	11111111.11111111.11111111.00000000

Network time protocol (NTP)

The network time protocol (NTP) provides a mechanism to ensure that computer clocks stay accurate.

The internal clock that a computer uses may drift over time. However, many computer services, for example, the accurate recording of when a file is created, depend on computer clocks being accurate. In a networked environment, this becomes even more important as computers sharing files from a common server must have consistent timestamps.

About NTP

NTP is a protocol for synchronising clocks over a network where:

- An NTP server, typically a computer, transmits its own time as a reference time for NTP clients.
- The NTP clients, such as VM600 cards or a VibroSight Server, receive the reference time from the NTP server.

Used correctly, NTP implements a hierarchical system of clock sources. This layered system of clock sources are called stratum levels (a measure of synchronisation distance) in NTP terminology.

About NTP stratum levels

Stratum 0 devices are reference clocks, which exist at the top of the hierarchy and are usually connected to a computer (not a network). So a reference clock itself appears at stratum 0, while the closest NTP servers are at stratum 1. Stratum 2 devices receive their reference time from stratum 1 devices, while stratum 3 devices receive their reference time from stratum 2 devices and so on.

Note:

An NTP server's stratum level is always one level below the level of its reference time source.

VibroSight and time references (NTP)

Note:

Starting with VibroSight 2.11.1, a VibroSight Server can use either the local clock on the host computer that is running the VibroSight Server or an NTP server as its reference clock. (That is, the use of a network time protocol (NTP) server is no longer a mandatory requirement for a VibroSight machinery monitoring system.)

A VibroSight machinery monitoring system can use either the local clock on the host computer that is running the VibroSight Server or a network time protocol (NTP) server as its reference clock.

Note:

By default, a VibroSight machinery monitoring system uses the local clock of the host computer running the VibroSight software as the time reference, that is, an NTP server is not required (NTP-free).

The deployment of a VibroSight monitoring system without an NTP server is recommended for the vast majority of machinery monitoring applications. For example, when working with long-term historical trends.

NTP-free operation is characterised by:

- Easier to deploy as no NTP server required.
- Synchronisation:

Data correlation 100 ms for data from the same VM600 XMx16 card.

Data correlation 1 s for data from different VM600 XMx16 cards.

Related concepts

[Dynamic host configuration protocol \(DHCP\)](#)

[Auto IP](#)

Related tasks

[Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

[Setting the reference clock for a VibroSight server](#)

[Setting up the Meinberg NTP package on a Windows computer](#)

[Setting up an NTP server on a Windows 7 computer](#)

Related reference

[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)

[VibroSmart VSV30x module / VSB300 terminal base factory assigned defaults](#)
[VibroSmart VSI010 module / VSB010 terminal base factory assigned defaults](#)

GSD

A general station description (GSD) file is a device description file provided with PRO IBUS and PRO INET devices.

A GSD file is a text file that contains information about the basic capabilities and characteristics of a PRO IBUS or PRO INET device, and must be provided with the device.

With a GSD file, system integrators can determine basic data such as the communications options and the available diagnostics, and the supervision software (PRO IBUS or PRO INET “master” device) can plan the configuration of the system.

A SE file is an English language specific version of a GSD file.

Related tasks

[Obtaining a GSD file for a VibroSmart VSI010 module](#)

[Obtaining a GSD file for a VM600 CPUR card](#)

XMC16 / XIO16T card pair introduction

The XMC16 / XIO16T extended combustion monitoring card pair is an advanced condition monitoring system (CMS) designed for industrial applications.

The system is intended primarily for extended combustion monitoring applications and measures the dynamic pressure levels in gas turbine combustors. This helps ensure the efficient operation and reliable protection of combustor cans and can be used to schedule and perform predictive maintenance in the power generation industries.

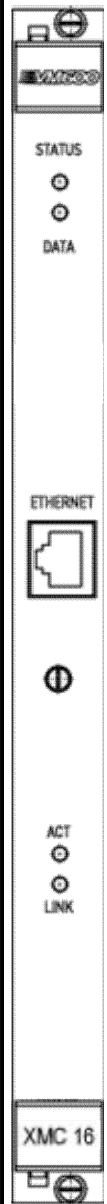
XMC16 front panel

The front panel of the XMC16 card allows you to connect to your computer or network and to check that the system is working properly.

Note: The corresponding XIO16T front panel also has a gigabit Ethernet port that allows you to connect to your computer or network.

The following figure introduces the different elements present on the XMC16 front panel:

	STATUS LED: The STATUS LED and the DATA LED are used to indicate the status of the card. The meaning of the colour (green, orange or red) and state of the LEDs (off, blinking or on) are given in the Card status table below.
	DATA LED: The DATA LED and the STATUS LED are used to indicate the status of the card. The meaning of the colour and state of the LEDs are given in the Card status table below.

	ETHERNET: Use this port to connect the card to your network. It has the same functionality as the port on the XIO16T except that it is more suitable for long distance transmission (over 60 m). Two LEDs show the status of the link: • green LED blinking or on, and yellow LED off indicates a 1 Gbps link • green LED blinking or on, and yellow LED blinking or on indicates a 100 Mbps link • green LED off and yellow LED blinking or on indicates a 10 Mbps link.
	ACT LED: This LED shows green (continuous or blinking) when a link is established at 1 Gbps through the Ethernet port on the XIO16T. It shows red (continuous or blinking) when this link is at 100 Mbps.
	LINK LED: The Ethernet link LED shows green when there is an active connection on the Ethernet port on the XIO16T.

XMC16 front panel

Card status

The STATUS LED and the DATA LED are used to indicate the status of the card. The following table relates the LED activity to the card status.

STATUS LED	DATA LED	Card status
Red blinking	Off	PSUs OK (and card will start soon)
Red on	Off	PSUs not OK
Orange on	Off	Card is starting or Card has started and does not have a configuration and no server is connected
Orange on	Orange on	Card has started and has a configuration but no server is

		connected
reen on	Orange on	One or more servers connected to card and card has a configuration
reen on	Off	One or more servers connected to card but card does not have a configuration
reen on	reen on	One or more servers connected to card and card is acquiring data (by definition, the card has a configuration)
Orange on	reen on	Card is acquiring data (by definition, the card has a configuration) but no servers are connected
Orange blinking	Orange blinking	The VibroSight Configurator software is locating a card
Off	Off	Reserved for future use

Related concepts

[VibroSight software diagnostic information](#)

[VM600 card and VibroSmart DMS device diagnostic logs](#)

Related tasks

[Rebooting a VM600 XMx16 card](#)

[eneral VibroSight monitoring system troubleshooting](#)

Related reference

[XIO16T front panel](#)

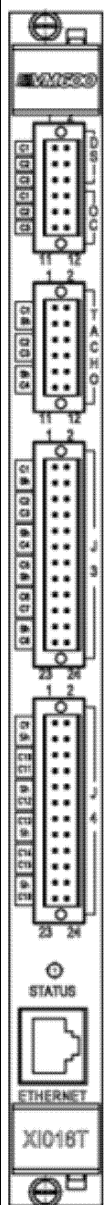
XIO16T front panel

The front panel of the XIO16T card contains the ports to allow you to connect sensors, an Ethernet connection to add your card to your network, and a LED giving information about the validity of the configuration and the transfer of data.

Note: The corresponding XMC16 or XMV16 front panel also has a gigabit Ethernet port that allows you to connect to your computer or network.

The following figure introduces the different elements present on the XIO16T front panel.

	1: Unused (not supported)
	2: This is the TACHO connector, it offers the possibility to connect up to four sensors. All four connectors accept voltage signals and the first two can also accept current signals.
	3: This is the first (of two) connectors for the 16 dynamic channels. Current or voltage signals can be connected.
	4: This is the second (of two) connectors for the 16 dynamic channels. Current or voltage signals can be connected.



STATUS LED: The colour of the LED indicates whether the card is properly configured (continuous green) and whether the card is exchanging data (blinking green).

ETHERNET: The Ethernet port allows you to connect the card to your network. You can use either this port or the Ethernet port on the corresponding XMC16 or XMV16. However, for long distance transmission (over 60 m) it is recommended to use the port on the front panel of the processing card (XMC16 or XMV16). Two LEDs show the status of the link:

- Continuous or blinking green LED indicates a 1 bps link
- Continuous or blinking yellow LED indicates a 100 Mbps link
- Continuous or blinking red LED indicates a 10 Mbps link.

The XIO16T front panel

Connectors

The terminal contact strips 1 to 4 consist of a socket and a mating connector, which contain either 12 or 24 cage clamp terminals. The terminals can accept wires with a cross-section of between 0.08 and 1.0 mm².

- [XIO16T interface connector pinouts](#)

The front panel of the XIO16T card provides all of the I/O connections required for interfacing with an XMC16 / XIO16T or XMV16 / XIO16T pair.

Related reference

[XMC16 front panel](#)

[XMV16 front panel](#)

XIO16T interface connector pinouts

The front panel of the XIO16T card provides all of the I/O connections required for interfacing with an XMC16 / XIO16T or XMV16 / XIO16T pair.

The pinouts for the XIO16T connectors are given below.

Note:

Connector 1 on the XIO16T is unused (not supported).

Note:

For connectors 2, 3 and 4 on the XIO16T, every input channel consists of three signals: differential high (HI) and low (LO) inputs, and a shield (Sh). The pins on the left of the connectors are the HI inputs and the pins on the right of the connector are the LO inputs, except for every third row of pins which is a shield (left and right) for use by the closest pair of differential inputs.

J1 – Digital inputs (DSI) and outputs (OC)

Pin	Label	Direction	Description
1-12			Unused (not supported)

J2 – Speed and phase reference (tachometer) input channels 1 to 4

Pin	Label	Direction	Description
1	CH1 HI	I	Tachometer input channel 1 differential input signal (high)
2	CH1 LO	I	Tachometer input channel 1 differential input signal (low)
3	CHx SHIELD	S	Tachometer input channel shield
4	CHx SHIELD	S	Tachometer input channel shield
5	CH2 HI	I	Tachometer input channel 2 differential input signal (high)
6	CH2 LO	I	Tachometer input channel 2 differential input signal (low)
7	CH3 HI	I	Tachometer input channel 3 differential input signal (high)
8	CH3 LO	I	Tachometer input channel 3 differential input signal (low)
9	CHx SHIELD	S	Tachometer input channel shield
10	CHx SHIELD	S	Tachometer input channel shield
11	CH4 HI	I	Tachometer input channel 4 differential input signal (high)
12	CH4 LO	I	Tachometer input channel 4 differential

			input signal (low)

J3 – Dynamic input channels 1 to 8

Pin	Label	Direction	Description
1	CH1 HI	I	Dynamic input channel 1 differential input signal (high)
2	CH1 LO	I	Dynamic input channel 1 differential input signal (low)
3	CHx SHIELD	S	Dynamic input channel shield
4	CHx SHIELD	S	Dynamic input channel shield
5	CH2 HI	I	Dynamic input channel 2 differential input signal (high)
6	CH2 LO	I	Dynamic input channel 2 differential input signal (low)
7	CH3 HI	I	Dynamic input channel 3 differential input signal (high)
8	CH3 LO	I	Dynamic input channel 3 differential input signal (low)
9	CHx SHIELD	S	Dynamic input channel shield
10	CHx SHIELD	S	Dynamic input channel shield
11	CH4 HI	I	Dynamic input channel 4 differential input signal (high)
12	CH4 LO	I	Dynamic input channel 4 differential input signal (low)
13	CH5 HI	I	Dynamic input channel 5 differential input signal (high)
14	CH5 LO	I	Dynamic input channel 5 differential input signal (low)
15	CHx SHIELD	S	Dynamic input channel shield
16	CHx SHIELD	S	Dynamic input channel shield
17	CH6 HI	I	Dynamic input channel 6 differential input signal (high)
18	CH6 LO	I	Dynamic input channel 6 differential input signal (low)
19	CH7 HI	I	Dynamic input channel 7 differential input signal (high)
20	CH7 LO	I	Dynamic input channel 7 differential input signal (low)
21	CHx SHIELD	S	Dynamic input channel shield

22	CHx SHIELD	S	Dynamic input channel shield
23	CH8 HI	I	Dynamic input channel 8 differential input signal (high)
24	CH8 LO	I	Dynamic input channel 8 differential input signal (low)

J4 – Dynamic input channels 9 to 16

Pin	Label	Direction	Description
1	CH9 HI	I	Dynamic input channel 9 differential input signal (high)
2	CH9 LO	I	Dynamic input channel 9 differential input signal (low)
3	CHx SHIELD	S	Dynamic input channel shield
4	CHx SHIELD	S	Dynamic input channel shield
5	CH10 HI	I	Dynamic input channel 10 differential input signal (high)
6	CH10 LO	I	Dynamic input channel 10 differential input signal (low)
7	CH11 HI	I	Dynamic input channel 11 differential input signal (high)
8	CH11 LO	I	Dynamic input channel 11 differential input signal (low)
9	CHx SHIELD	S	Dynamic input channel shield
10	CHx SHIELD	S	Dynamic input channel shield
11	CH12 HI	I	Dynamic input channel 12 differential input signal (high)
12	CH12 LO	I	Dynamic input channel 12 differential input signal (low)
13	CH13 HI	I	Dynamic input channel 13 differential input signal (high)
14	CH13 LO	I	Dynamic input channel 13 differential input signal (low)
15	CHx SHIELD	S	Dynamic input channel shield
16	CHx SHIELD	S	Dynamic input channel shield
17	CH14 HI	I	Dynamic input channel 14 differential input signal (high)
18	CH14 LO	I	Dynamic input channel 14 differential input signal (low)
19	CH15 HI	I	Dynamic input channel 15 differential input signal (high)

20	CH15 LO	I	Dynamic input channel 15 differential input signal (low)
21	CHx SHIELD	S	Dynamic input channel shield
22	CHx SHIELD	S	Dynamic input channel shield
23	CH16 HI	I	Dynamic input channel 16 differential input signal (high)
24	CH16 LO	I	Dynamic input channel 16 differential input signal (low)

Parent topic: [XIO16T front panel](#)

VM600 XMx16 / XIO16T card pair factory assigned defaults

A VM600 XMx16 / XIO16T card pair (XMC16 / XIO16T, XMV16 / XIO16T or XMVS16 / XIO16T) is supplied by Meggitt Sensing Systems with the following factory assigned defaults.

Ethernet ports (IP and DHCP)

By default, for the Ethernet ports of a VM600 XMx16 / XIO16T card pair:

- The XMx16 Ethernet port, available at the front of a VM600 rack, is configured as enabled using static addressing (Use static IP) with the following Static IP settings:

IP address: 10.10.57.57

Subnet mask: 255.255.0.0

Default gateway:

Note:

By default, the Default gateway is not configured (that is, the field is left empty).

- The XIO16T Ethernet port, available at the rear of a VM600 rack, is configured as enabled using dynamic addressing (Use DHCP), and the Static IP settings are not configured (that is, the fields are left empty).

Note:

When dynamic addressing using the dynamic host configuration protocol (DHCP) is used, a DHCP server must be available on the same network as the VibroSight system, in order for XMx16 and/or XIO16T cards to be automatically assigned an IP address.

Note:

Contact your IT department or network administrator for information on whether a DHCP server is available on your network.

If no DHCP server is available on the network, XMx16 and/or XIO16T cards will use auto IP to assign itself a link-local IP address in the range 169.254.1.0 to 169.254.254.255. (However, this can be a relatively slow process, as address resolution protocol (ARP) probes using a random candidate address within the reserved link-local IP address range are used to ensure that the IP address is not in use on the network.)

It is important to consider these factory assigned default Ethernet port settings when connecting an XMx16 / XIO16T card pair to a network for the first time and/or when reconfiguring or replacing a card in an application.

Using VibroSight System Manager, the Ethernet port settings for a VM600 XMx16 / XIO16T card pair can be changed as required using the IP settings command. For example, to use static addressing instead of dynamic addressing (that is, to use fixed IP addresses). Depending on whether a DHCP server is available on your network, it may be easier to connect to the XMx16 Ethernet port (as it uses static addressing) in order to change the Ethernet port settings of an XMx16 / XIO16T card pair.

Time reference (NTP)

By default, a VM600 XMx16 / XIO16T card pair uses the local clock on the host computer that is running the VibroSight Server as its time reference. That is, by default, the use of an NTP (network time protocol) server as a time reference is configured as disabled (NTP-free operation).

Note:

A VibroSight / VM600 system can be deployed for operation either without an NTP server (NTP-free) or with an NTP server. If an NTP server is being used, contact your IT department or network administrator for information on the NTP server available on your network.

It is important to consider this factory assigned default time reference setting when connecting a VM600 XMx16 / XIO16T card pair to a network for the first time and/or when reconfiguring or replacing a card in an application.

Using VibroSight System Manager, the time reference settings for a VM600 XMx16 / XIO16T card pair can be changed as required using the NTP settings command.

Firmware

VM600 XMx16 card pairs are supplied with the latest versions of firmware. For VibroSight 3.6.0, the recommended firmware versions are:

- Base System firmware: 640-003-000-016
- Applications firmware: 640-010-000-016.

It is strongly recommended to use the most recent version of the XMx16 card firmware that is compatible with the version of VibroSight software being used.

The versions of firmware running on a card can be changed if necessary, for example, so that all cards of the same type in a VM600 rack are running the same version of firmware.

Related concepts

[Dynamic host configuration protocol \(DHCP\)](#)

[Auto IP](#)

Related tasks

[Setting up an Ethernet connection](#)

[Enabling and disabling Ethernet ports for a VM600 card pair](#)

[Enabling and disabling Ethernet ports for a VM600 card pair](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a DHCP server](#)

[Configuring IP settings for a VM600 XMx16/XIO16T card pair using a static IP address](#)

[Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

[Checking the firmware](#)

[Changing firmware](#)

[Setting up an Ethernet connection](#)

Related reference

[VibroSight software and VM600 XMx16 card firmware compatibility](#)

[VibroSmart VSV30x module / VSB300 terminal base factory assigned defaults](#)

[VibroSmart VSI010 module / VSB010 terminal base factory assigned defaults](#)

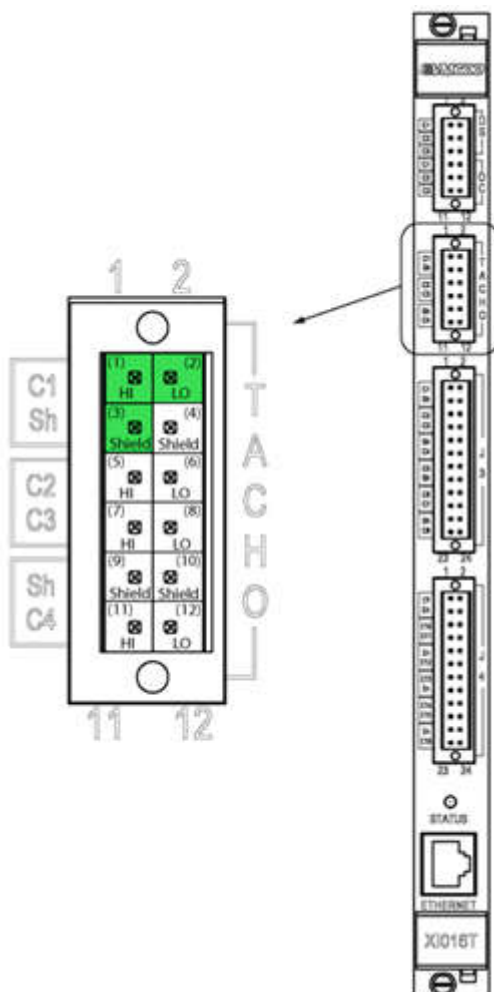
[Network time protocol \(NTP\)](#)

Related information

[Network connections](#)

Connecting tachometer sensors to an XIO16T

The XIO16T has four tachometer channels, identified as TACHO, allowing you to connect up to four speed (tachometer) sensors.



The XIO16T tachometer connector

Each of the four tachometer channels has three terminals, as follows:

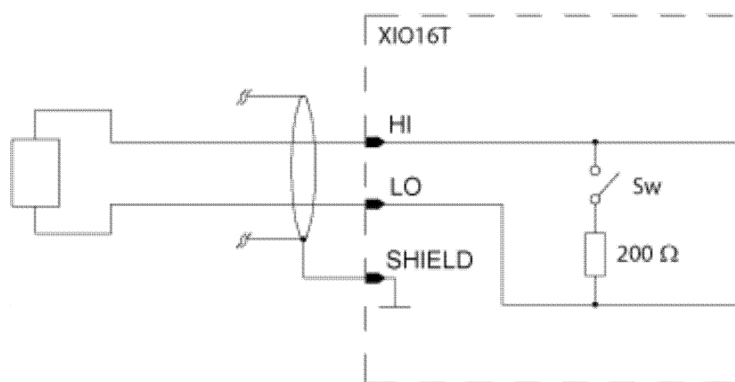
- HI, along with the LO terminal, constitutes the differential input for the signal
- LO, along with the HI terminal, constitutes the differential input for the signal
- SHIELD, referred to as Sh is the terminal for connecting the shield of the transmission cable.

Note:

The XIO16T does not provide a power supply for external transducers or signal conditioners, so an external power supply must be used (if required).

The first two of the four tachometer channels (C1 and C2) accept either voltage or current signals, the last two (C3 and C4) accept only voltage signals. The choice between voltage or current is made during the configuration using VibroSight Configurator.

The following figure shows a connection diagram for the tachometer channels:



A tachometer channel connection diagram

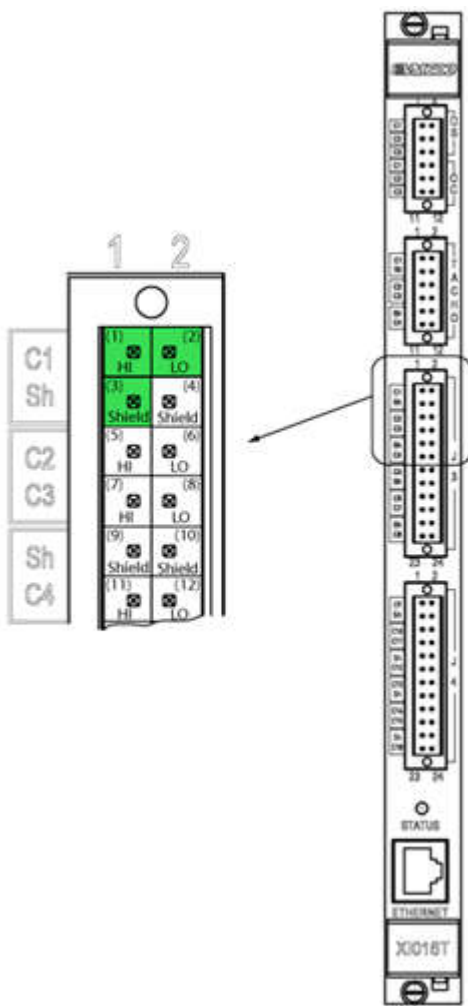
Depending on the configuration, the switch (Sw in the figure) is either open for voltage-modulated signals, or closed for current-modulated signals, in this last case the current measuring resistor has a value of 200 ohms.

Related reference

[XIO16T interface connector pinouts](#)

Connecting dynamic sensors to an XIO16T

The XIO16T has 16 dynamic channels, allowing you to connect up to 16 dynamic sensors (vibration, pressure, air gap and so on).



The XIO16T dynamic sensor connectors

There are three screw terminals for each of the 16 channels, they are as follows:

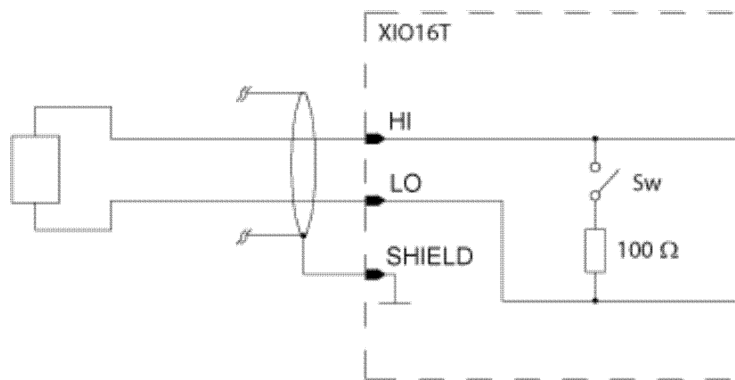
- HI, along with the LO terminal, constitutes the differential input for the signal
- LO, along with the HI terminal, constitutes the differential input for the signal
- SHIELD, referred to as Sh is the terminal for connecting the shield of the transmission cable.

Note:

The IOC16T does not provide a power supply for external transducers or signal conditioners, so an external power supply must be used.

All dynamic channels accept either voltage or current signals. The choice between the two is made during the configuration using VibroSight Configurator.

The following figure shows a connection diagram for the dynamic channels:



A dynamic channel connection diagram

Depending on the configuration, the switch (Sw in the figure) is either open for voltage-modulated signals, or closed for current-modulated signals. In this last case, the current measuring resistor has a value of 100 ohms.

XMC16 / XIO16T card pair communication possibilities

In general, VM600-based systems offer several possibilities for communications, including Ethernet and Modbus. For example, each VibroSight software module communicates with the VM600 cards over an Ethernet connection.

Unlike previous VM600 cards that required a CPUM in order to connect to an Ethernet network, the XMC16 / XIO16T extended combustion monitoring card pair and XMV16 / XIO16T extended vibration monitoring card pair connect to a network directly.

Either the Ethernet port on the front panel of the XMC16 and XMV16 cards (the front of the VM600 rack) or the Ethernet port on the front panel of the XIO16T (the rear of the VM600 rack) can be used. All these communication ports have the same functionality, that is, all support gigabit Ethernet connections using the TCP / IP protocol. The only difference between the ports is that the XMC16 and XMV16 cards guarantee gigabit transmission for cable lengths up to 100 meters, while the XIO16T cannot guarantee gigabit transmission for cable lengths greater than 60 meters.

XMV16 / XIO16T card pair introduction

The XMV16 / XIO16T extended vibration monitoring card pair is an advanced condition monitoring system (CMS) designed for industrial applications.

The system is intended primarily for extended vibration monitoring applications: to ensure the protection of rotating machinery and for monitoring the condition of rotating machinery in order to perform predictive maintenance.

Related reference

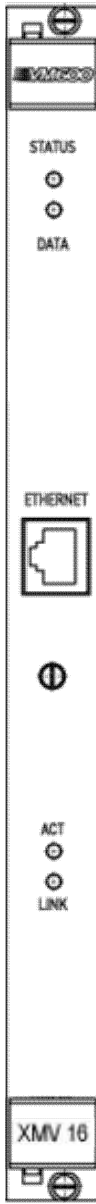
[XMVS16 / XIO16T card pair introduction](#)

XMV16 front panel

The front panel of the XMV16 card allows you to connect to your computer or network and to check that the system is working properly.

Note: The corresponding XIO16T front panel also has a gigabit Ethernet port that allows you to connect to your computer or network.

The following figure introduces the different elements present on the XMV16 front panel:

	STATUS LED: The STATUS LED and the DATA LED are used to indicate the status of the card. The meaning of the colour (green, orange or red) and state of the LEDs (off, blinking or on) are given in the Card status table below.
	DATA LED: The DATA LED and the STATUS LED are used to indicate the status of the card. The meaning of the colour and state of the LEDs are given in the Card status table below.
	ETHERNET: Use this port to connect the card to your network. It has the same functionality as the port on the XIO16T except that it is more suitable for long distance transmission (over 60 m). Two LEDs show the status of the link: • green LED blinking or on, and yellow LED off indicates a 1 Gbps link • green LED blinking or on, and yellow LED blinking or on indicates a 100 Mbps link • green LED off and yellow LED blinking or on indicates a 10 Mbps link.
	ACT LED: This LED shows green (continuous or blinking) when a link is established at 1 Gbps through the Ethernet port on the XIO16T. It shows red (continuous or blinking) when this link is at 100 Mbps.
	LINK LED: The Ethernet link LED shows green when there is an active connection on the Ethernet port on the XIO16T.
XMV16 front panel	

Card status

The STATUS LED and the DATA LED are used to indicate the status of the card. The following table relates the LED activity to the card status.

STATUS LED	DATA LED	Card status
Red blinking	Off	PSUs OK (and card will start soon)
Red on	Off	PSUs not OK

Orange on	Off	Card is starting or Card has started and does not have a configuration and no server is connected
Orange on	Orange on	Card has started and has a configuration but no server is connected
Green on	Orange on	One or more servers connected to card and card has a configuration
Green on	Off	One or more servers connected to card but card does not have a configuration
Green on	Green on	One or more servers connected to card and card is acquiring data (by definition, the card has a configuration)
Orange on	Green on	Card is acquiring data (by definition, the card has a configuration) but no servers are connected
Orange blinking	Orange blinking	The VibroSight Configurator software is locating a card
Off	Off	Reserved for future use

Related concepts

[VibroSight software diagnostic information](#)

[VM600 card and VibroSmart DMS device diagnostic logs](#)

Related tasks

[Rebooting a VM600 XMx16 card](#)

[General VibroSight monitoring system troubleshooting](#)

Related reference

[XIO16T front panel](#)

XMVS16 / XIO16T card pair introduction

The XMVS16 / XIO16T extended vibration monitoring card pair is an advanced condition monitoring system (CMS) designed for industrial applications.

The XMVS16 card has the same capabilities and features as the XMV16 card, except for the following:

- The XMVS16 card cannot access and therefore cannot configure anything on the VM600 Raw bus.

This means that all of the dynamic input channel signals for an XMVS16 card must be wired to the connectors on the front panel of the associated XIO16T card (rear of the VM600 rack).

Like the XMV16 card, the XMVS16 card uses the XIO16T input/output card to form a card pair.

Note:

For further information, refer to the XMV16 / XIO16T topics in this help.

Related reference

[XMV16 / XIO16T card pair introduction](#)

[Raw Bus](#)

CPUR / IOCR central processing unit card pair

The CPUR/IOCR central processing unit card pair is designed for use in the VM600 series of machinery protection systems and condition monitoring systems, from Meggitt Sensing Systems Vibro-Meter product line.

CPUR central processing unit card

The CPUR central processing unit card acts as a “rack controller” in a VM600 system rack (ABE04x) and provides various system functions:

- VibroSight compatible hardware from the Vibro-Meter product line.
- Configuration of other cards in the VM600 rack.
- Two communications interfaces for industry standard fieldbuses: PRO IBUS.
- VM600 rack security CPUR access lock (mechanical lock and key) and VM600 MPS software password validation.
- Alarm reset (AR) button to reset all latched alarms and associated relays in the VM600 rack.
- Front-panel LEDs to indicate the status of the card pair and its communications interfaces (fieldbuses and Ethernet).
- Comprehensive diagnostic logs to support system maintenance.

IOCR input / output card

The IOCR input/output card acts as a signal and communications interface for the CPUR card and must be installed directly behind its CPUR. It also protects all inputs against electromagnetic interference (EMI) and signal surges to meet electromagnetic compatibility (EMC) standards.

A CPUR/IOCR central processing unit card pair can be installed in a VM600 system rack (ABE04x). The CPUR card is installed in the front of the rack and the associated IOCR input/output card is installed in the rear of the rack. Both cards connect directly to the rack backplane using two connectors.

A CPUR/IOCR card pair is used in conjunction with the VibroSight software. VibroSight Configurator is used to configure a CPUR/IOCR card pair and associate it with any XMC16/XIO16T card pairs that it is managing. VibroSight System Manager is used for standard configuration and maintenance operations such as configuring IP settings and changing firmware.

- Communication between an CPUR/IOCR card pair and a host computer running the VibroSight software is via a dedicated Ethernet link on the IOCR card.
- Communication between an CPUR/IOCR card pair and any XMC16/XIO16T card pairs that it is managing is via a dedicated Ethernet link on the IOCR card.

Note:

In a VM600 system rack (ABE04x), communication between the CPUR/IOCR card pair and XMC16/XIO16T cards takes place over a direct Ethernet connection.

- Communication between an CPUR/IOCR card pair and a host computer running the VM600 MPS and/or VM600 CMS software, when the CPUR/IOCR card pair is acting as a “rack controller” in a VM600 system rack (ABE04x), is via a dedicated Ethernet link on the IOCR card. This is the same Ethernet link used for communication with the VibroSight software.

Note:

In a VM600 system rack (ABE04x), communication between the CPUR/IOCR card pair and MPC4/IOC4T, AMC8/IOC8T and CMC16/IOC16T cards takes place over a VME bus on the rack backplane.

- Communication between an CPUR/IOCR card pair and third party devices such as a DCS or PLC is via industry standard fieldbuses (PRO IBUS).

The CPUR/IOCR card pair is fully software configurable using the VibroSight software.

CPUR front panel

The front panel of the CPUR card allows you to monitor the status of the card and its communications links, reset alarms in the VM600 rack and control VM600 rack (CPUR) security.

The following figure introduces the different elements present on the CPUR front panel:

	DIA MODE LEDs: The MODE1 and MODE2 LEDs are used to indicate the mode of operation of the CPUR card. Refer to the Card mode of operation table below.
	DIA STATUS LEDs: The STATUS1 and STATUS2 LEDs are used to indicate the status of the CPUR card. Refer to the Card status table below.
	ALARM RESET: Button used to reset all latched alarms and relays for the machinery protection cards (MPC4 and AMC8) in a VM600 rack.
	Serial number label: Label (sticker) with the factory assigned serial number (xxxxxxx) that is used to uniquely identify the CPUR card.
	Note: The VibroSight software uses serial numbers to identify and work with VM600 cards.
	Security key lock: Lock used to enable or disable VM600 rack (CPUR) security, that is, limit the VM600 MPS software to “read only” operations.
	ADMIN: Button (recessed) used to reset the VM600 rack (CPUR) security password used by the CPUR card for “MPS password validation”.
	ETHERNET LINK/ACT LEDs: The ETHERNET LINK/ACT1 and LINK/ACT2 LEDs are used to indicate the status of the system Ethernet ports available on the IOCR card. Refer to the system Ethernet port table below.

	IELDBUS LINK/ACT LEDs: The IELDBUS LINK/ACT1 and LINK/ACT2 LEDs are used to indicate the status of the fieldbus Ethernet ports available on the IOCR card. Refer to the fieldbus Ethernet port table below. IELDBUS STATUS A LEDs: The IELDBUS STATUS A1 and STATUS A2 LEDs are used to help indicate the status of the fieldbus interfaces available on the IOCR card. Refer to the fieldbus interface status table below. IELDBUS STATUS B LEDs: The IELDBUS STATUS B1 and STATUS B2 LEDs are used to help indicate the status of the fieldbus interfaces available on the IOCR card. Refer to the fieldbus interface status table below.
CPUR front panel	

Card mode of operation

The DIA MODE1 and MODE2 LEDs on the CPUR are used to indicate the mode of operation of the CPUR card.

DIAG MODE1 LED state	DIAG MODE2 LED state	Card status
Off	Off	Not powered or external power supply out of normal range
reen	reen	CPUR is operating as a VME bus master
reen	Off	CPUR is operating as a VME bus slave
Off	reen	CPUR does not have a VME bus interface

Card status

The DIA STATUS1 and STATUS2 LEDs on the CPUR are used to indicate the status of the card.

DIAG STATUS1 LED state	DIAG STATUS2 LED state	Card status
Off	Off	Not powered or external power supply out of normal range
reen	---	CPUR has started and is operating normally (booted and firmware is running)
reen blinking quickly for five seconds	---	CPUR is resetting to its default security settings. That is, VM600 MPS rack (CPUR) security will not be used.
Orange	---	CPUR is starting (second phase of booting)
Red	---	There is a hardware problem such as an internal power supply failure
Red blinking	---	CPUR is either starting (first phase of booting) <i>or</i> it is being held in reset
---	reen	CPUR has a valid configuration for all of the MPC4 cards in the VM600 rack <i>and</i> all of the XMx16 cards whose configuration it is managing are running
---	Red	CPUR does not have a valid configuration for one or more of the MPC4 cards in the VM600 rack <i>or</i> one or more of the XMx16 cards whose configuration it is managing is not running

Note: --- is used in the above table to indicate no change in the state of an LED.

System Ethernet ports

The ETHERNET LINK/ACT LEDs on the CPUR are used to indicate status of the system Ethernet ports available on the IOCR card:

- The ETHERNET LINK/ACT1 LED corresponds to the ETHERNET1 port available on 6 of the IOCR card.
- The ETHERNET LINK/ACT2 LED corresponds to the ETHERNET2 port available on 7 of the IOCR card.

ETHERNET LINK/ACTn LED state (ETHERNET1 or ETHERNET2)	System Ethernet port status
Off	No link established
reen	Link established at 1 bps with no traffic on the link

Green blinking	Link established at 1 Mbps with traffic on the link
Yellow	Link established at 100 Mbps with no traffic on the link
Yellow blinking	Link established at 100 Mbps with traffic on the link
Red	Link established at 10 Mbps with no traffic on the link
Red blinking	Link established at 10 Mbps with traffic on the link

Fieldbus Ethernet ports

The IELDBUS LINK/ACT LEDs on the CPUR are used to indicate status of the fieldbus Ethernet ports available on the IOCR card:

- The IELDBUS LINK/ACT1 LED corresponds to the IELDBUS1 Ethernet port available on 2 of the IOCR card.
- The IELDBUS LINK/ACT2 LED corresponds to the IELDBUS2 Ethernet port available on 5 of the IOCR card.

FIELDBUS LINK/ACT_n LED state (FIELDBUS1 or FIELDBUS2)	Fieldbus Ethernet port status
TBD	TBD

Fieldbus interface status

The IELDBUS STATUS A and STATUS B LEDs on the CPUR are used to indicate the status of the fieldbus interfaces:

- The IELDBUS STATUS A1 and STATUS B1 LEDs correspond to the IELDBUS 1 interface available on 1 and 2 of the IOCR card.
- The IELDBUS STATUS A2 and STATUS B2 LEDs correspond to the IELDBUS 2 interface available on 4 and 5 of the IOCR card.

FIELDBUS STATUS A_n LED state (FIELDBUS1 or FIELDBUS2)	FIELDBUS STATUS B_n LED state (FIELDBUS1 or FIELDBUS2)	Fieldbus interface status
Off	Off	ieldbus not configured
Green	Off	ieldbus server (slave) has started and is operating normally communication with all PRO IBUS slaves is established
Green blinking cyclically	Off	PRO IBUS “PRO IBUS is configured but bus communication is not yet released from the application”

reen blinking a acyclically	Off	PRO IBUS “No configuration or stack error”
Red	Off	PRO IBUS “Communication to at least one slave is disconnected”
Red blinking	Off	PRO IBUS “Communication to one/all slaves is disconnected or other serious error has ocured”

Related concepts

[VibroSight software diagnostic information](#)

[VM600 card and VibroSmart DMS device diagnostic logs](#)

Related tasks

[eneral VibroSight monitoring system troubleshooting](#)

Related reference

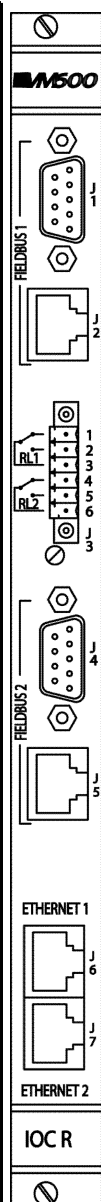
[IOCR front panel](#)

IOCR front panel

The front panel of the IOCR card contains system Ethernet connectors to add your CPUR/IOCR card pair to your network and optionally, to connect the CPUR/IOCR to a XMx16/XIO16T card pair whose configuration it is managing. It also contains fieldbus connectors that connect the CPUR/IOCR to industry standard fieldbuses (PRO IBUS).

The following figure introduces the different elements present on the IOCR front panel.

	1 (IELDBUS1): 9-pin D-sub connector (DCE), female, connector. Connector for communication between the CPUR/IOCR card pair (fieldbus server) and a fieldbus master using serial-based protocols on fieldbus 1.
	2 (IELDBUS1): 8P8C (R 45) modular jack, female, connector. Connector for communication between the CPUR/IOCR card pair (fieldbus server) and a fieldbus master using Ethernet-based protocols on fieldbus 1. Two separate LEDs on the connector indicate the status of the communications link: • Link TBD • Activity TBD.
	3 (RL1 and RL2): 6-contact screw-terminal connector. Connector for relay outputs with 1x COM, 1x NC and 1x NO contact per relay. Note: Reserved for future use.
	4 (IELDBUS2): 9-pin D-sub connector (DCE), female, connector. Connector for communication between the CPUR/IOCR card pair (fieldbus server) and a fieldbus master using serial-based protocols on fieldbus 2.
	5 (IELDBUS2): 8P8C (R 45) modular jack, female, connector. Connector for communication between the CPUR/IOCR card pair (fieldbus server) and a fieldbus master using Ethernet-based protocols on fieldbus 2. Two



separate LEDs on the connector indicate the status of the communications link:

- Link TBD
- Activity TBD.

6 (ETHERNET1): 8P8C (R 45) modular jack, female, connector.

Connector for communications either between the CPUR/IOCR card pair and a host computer running Meggitt Sensing Systems' software, such as VM600 MPS, VM600 CMS and/or VibroSight *or* between the CPUR/IOCR card pair and a VM600 XMx16 card pair whose configuration it is managing. One combined LED on the connector indicates the status of the communications link:

- Continuous green and yellow indicates a 1 bps, 100 Mbps or 10 Mbps link with no traffic
- Blinking green and yellow indicates a 1 bps, 100 Mbps or 10 Mbps link with traffic.

Note:

ETHERNET1 and ETHERNET2 implement the same functionality and are interchangeable.

If both system Ethernet ports of a CPUR/IOCR card pair are required by an application, then a different subnet mask must be used for each system Ethernet port in order to partition the networks used and ensure that the communications on each system Ethernet port are kept separate from one another. Any unused Ethernet port should be disabled.

7 (ETHERNET2): 8P8C (R 45) modular jack, female, connector.

Connector for communications either between the CPUR/IOCR card pair and a host computer running Meggitt Sensing Systems' software, such as VM600 MPS, VM600 CMS and/or VibroSight *or* between the CPUR/IOCR card pair and a VM600 XMx16 card pair whose configuration it is managing. One combined LED on the connector indicates the status of the communications link:

- Continuous green and yellow indicates a 1 bps, 100 Mbps or 10 Mbps link with no traffic
- Blinking green and yellow indicates a 1 bps, 100 Mbps or 10 Mbps link with traffic.

Note:

ETHERNET1 and ETHERNET2 implement the same functionality and are interchangeable.

If both system Ethernet ports of a CPUR/IOCR card pair are required by an application, then a different subnet mask must be used for each system Ethernet port in order to partition the networks used and ensure that the communications on each system Ethernet port are kept separate from one another. Any unused Ethernet port should be disabled.

IOCR front panel

Related reference

[CPUR front panel](#)

MPC4 / IOC4T machinery protection card pair

The MPC4/IOC4T machinery protection card pair is designed for use in the VM600 series of machinery protection systems, from Meggitt Sensing Systems Vibro-Meter product line.

MPC4 machinery protection card

The MPC4 machinery protection card is the central element in the VM600 series of machinery protection systems (MPSs). This very versatile card is capable of measuring and monitoring up to four dynamic signals and up to two tachometer signals simultaneously.

IOC4T input / output card

The IOC4T input/output card acts as a signal interface for the MPC4 card.

An MPC4/IOC4T machinery protection card pair can be installed in a VM600 system rack (ABE04x) or a VM600 slimline rack (ABE056). The MPC4 card is installed in the front of the rack and the associated IOC4T input/output card is installed in the rear of the rack. Both cards connect directly to the rack backplane using two connectors.

An MPC4/IOC4T card pair is used in conjunction with the VM600 MPS software in order to configure the cards and to acquire, analyse and transmit measurement data to a host computer. Communication between an MPC4/IOC4T card pair and a host computer can be via either:

- A serial link directly with the MPC4/IOC4T card pair.
- An Ethernet link with a CPUM card or CPUM/IOCN card pair acting as a “rack controller” in a VM600 system rack (ABE04x).

Note:

In a VM600 system rack (ABE04x), communication between the CPUM card or CPUM/IOCN card pair and MPC4/IOC4T cards takes place over a VME bus on the rack backplane.

AMC8 / IOC8T analog monitoring card pair

The AMC8/IOC8T analog monitoring card pair is designed for use in the VM600 series of machinery protection systems, from Meggitt Sensing Systems Vibro-Meter product line.

AMC8 analog monitoring card

The AMC8 analog monitoring card is a central element in the VM600 series of machinery protection systems (MPSs) and condition monitoring systems (CMSs). This very versatile card is capable of measuring and monitoring up to eight process signals simultaneously.

The AMC8 card provides eight highly-configurable channels that can accept resistance temperature

detector (RTD) and thermocouple (TC) temperature inputs, as well as other process value inputs. The functions for each channel are selected during the configuration of the cards.

IOC8T input / output card

The IOC8T input/output card acts as a signal interface for the AMC8 card.

An AMC8/IOC8T analog monitoring card pair can be installed in a VM600 system rack (ABE04x) or a VM600 slimline rack (ABE056). The AMC8 card is installed in the front of the rack and the associated IOC8T input/output card is installed in the rear of the rack. Both cards connect directly to the rack backplane using two connectors.

An AMC8/IOC8T card pair is used in conjunction with the VM600 MPS software in order to configure the cards and to acquire, analyse and transmit measurement data to a host computer. Communication between an AMC8/IOC8T card pair and a host computer can be via either:

- A serial link directly with the AMC8/IOC8T card pair.
- An Ethernet link with a CPUM card or CPUM/IOCN card pair acting as a “rack controller” in a VM600 system rack (ABE04x).

Note:

In a VM600 system rack (ABE04x), communication between the CPUM card or CPUM/IOCN card pair and AMC8/IOC8T cards takes place over a VME bus on the rack backplane.

CMC16 / IOC16T condition monitoring card pair

The CMC16/IOC16T condition monitoring card pair is designed for use in the VM600 series of condition monitoring systems, from Meggitt Sensing Systems Vibro-Meter product line.

CMC16 condition monitoring card

The CMC16 condition monitoring card is the central element in the VM600 series of condition monitoring systems (CMSs). This very versatile card is capable of measuring and monitoring up to sixteen dynamic signals simultaneously.

The CMC16 card provides sixteen highly-configurable channels that can accept signals representing speed, phase reference, vibration (acceleration, velocity or displacement), dynamic pressure, air-gap rotor and pole profile, any dynamic signals or any quasi-static signals. The first four channels also configurable as tacho inputs and the last twelve channels also configurable as process values.

IOC16T input / output card

The IOC16T input/output card acts as an signal interface for the CMC16 card.

A CMC16/IOC16T condition monitoring card pair can be installed in a VM600 system rack (ABE04x). The CMC16 card is installed in the front of the rack and the associated IOC16T input/output card is installed in the rear of the rack. Both cards connect directly to the rack backplane

using two connectors.

A CMC16/IOC16T card pair is used in conjunction with the VM600 CMS software in order to configure the cards and to acquire, analyse and transmit measurement data to a host computer. Communication between an CMC16/IOC16T card pair and a host computer can be via either:

- A multi-drop (daisy-chained) serial link with CMC16/IOC16T card pairs.
- An Ethernet link with a CPUM card or CPUM/IOCN card pair acting as a “rack controller” in a VM600 system rack (ABE04x).

Note:

In a VM600 system rack (ABE04x), communication between the CPUM card or CPUM/IOCN card pair and CMC16/IOC16T cards takes place over a VME bus on the rack backplane.

RLC16 relay card

The RLC16 relay card is designed for use in the VM600 series of machinery protection and condition monitoring systems, from Meggitt Sensing Systems Vibro-Meter product line.

It is an optional card, for use when the four relays on the IOC4T input/output card are insufficient for the application and additional relays are required.

CPUM modular CPU card

The CPUM modular central processing unit (CPU) card is designed for use in the VM600 series of machinery protection systems and condition monitoring systems, from Meggitt Sensing Systems Vibro-Meter product line.

The modular and highly versatile design of the CPUM results in a single card that can be used with a VM600 system rack (ABE04x) to act as a “rack controller” and perform all of the following functions:

- rack configuration
- information display
- communications.
- [IOCN network communications card](#)

The IOCN network communications card is designed for use in the VM600 series of machinery protection and condition monitoring systems, from Meggitt Sensing Systems Vibro-Meter product line.

IOCN network communications card

The IOCN network communications card is designed for use in the VM600 series of machinery protection and condition monitoring systems, from Meggitt Sensing Systems Vibro-Meter product line.

The IOCN includes two pairs of R 11 connectors (labelled A and B) for configuring multi-drop RS-485 networks of VM600 racks, and another R 45 connector for a redundant Ethernet connection.

These extra connectors may be used if the optional Ethernet and RS-485 (RS-422) PC/104 modules have been installed on the CPUM.

Parent topic: [CPUM modular CPU card](#)

RPS1U rack power supply

The RPS1U rack power supply is designed for use in the VM600 series of machinery protection systems (MPSs) and condition monitoring systems (CMSs), from Meggitt Sensing Systems Vibro-Meter product line.

Related reference

[RPS1U rack power supply](#)

RPS6U rack power supply

The RPS6U rack power supply is designed for use in the VM600 series of machinery protection systems (MPSs) and condition monitoring systems (CMSs), from Meggitt Sensing Systems Vibro-Meter product line.

Related reference

[RPS6U rack power supply](#)

Firmware used by VM600 XMx16 cards (1 of 2)

The firmware that runs on the VM600 XMx16 cards includes open source software. To acknowledge the work of others, the relevant open source software licences are included here.

Note:

The open source software used by the VM600 XMx16 cards is divided into two lists 1 (this list) and 2.

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Parent topic: [firmware used by VM600 XMx16 cards \(1 of 2\)](#)

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loginrec.c

loginrec.h

atomicio.h

atomicio.c

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29. 32 Louis A. Mamakos louie ni.umd.edu MD5-based authentication
30. 33 Lars H. Mathiesen thorinn diku.dk adaptation of foundation code for Version 3 as specified in R C-1305
31. 34 Danny Mayer mayer ntp.org Network I/O, Windows Port, Code Maintenance
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35. 38 Tom Moore tmoore fievel.daytonoh.ncr.com i386 svr4 port
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42. 46 ack Sasportas jack innovativeinternet.com Saved a Lot of space on the stuff in the html/pic/ subdirectory
43. 47 Ray Schnit ler schnit unipress.com Unixware1 port
44. 48 Michael Shields shields tembel.org USNO clock driver
45. 49 eff Steinman jss pebbles.jpl.nasa.gov Datum PTS clock driver
46. 50 Harlan Stenn harlan pfcs.com NU automake/autoconfigure makeover, various other bits (see the ChangeLog)
47. 51 Kenneth Stone ken sdd.hp.com HP-UX port
48. 52 Ajit Thyagarajan ajit ee.udel.edu IP multicast/anycast support
49. 53 Tomoaki TSURUOKA tsuruoka nc.fukuoka-u.ac.jp TRAK clock driver
50. 54 Paul A Vixie vixie vix.com TrueTime PS driver, generic TrueTime clock driver
51. 55 Ulrich Windl Ulrich.Windl r .uni-regensburg.de corrected and validated HTML documents according to the HTML DTD.

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Parent topic: [firmware used by VM600 XMx16 cards \(2 of 2\)](#)

VibroSmart DMS introduction

The VibroSmart DMS (distributed monitoring system) can be used for two different but complementary purposes in industrial applications: **Machinery Protection Systems (MPSs)** and **Condition Monitoring Systems (CMSs)**. That is, multiple VibroSmart DMS modules can be used as part of a comprehensive CMS/MPS using the VibroSight software or as a simple stand-alone MPS (without VibroSight).

VibroSmart DMSs are intended primarily for vibration monitoring of critical assets such as gas or steam turbines, motors, compressors, generators, feed pumps, fans or other rotating and reciprocating equipment, for example, in the power generation, petro-chemical and petroleum industries.

The modular and scalable nature of VibroSmart DMSs means that they can be used to provide a versatile and cost-effective monitoring system for balance of plant equipment in industrial applications.

Having been designed to meet the requirements of IEC 61508 “Functional Safety of Electrical/Electronic/Programmable Electronic Safety-related Systems” and including support for PROIsafe, the VibroSmart DMS can also be suitable for use in safety applications.

VibroSmart DMS

A VibroSmart DMS is a network of one or more VibroSmart DMS modules (such as the VSV30x) on their corresponding terminal bases logically grouped together in a measurement block with a power supply. That is, one or more measurement blocks and an optional host computer form a VibroSmart DMS.

Depending on the requirements of an application, multiple VibroSmart DMS modules can be grouped together in a measurement block in order to allow the sharing of alarm, tachometer and some trigger type messages. (A module can only exist in a measurement block, which contains anywhere between 1 and 16 modules). This has the added advantage of reducing external wiring requirements.

Note:

A VibroSmart DMS is limited to a maximum of 8 measurement blocks without VibroSmart VSN010 real-time Ethernet switches but if each measurement block contains a VSN010, then a higher number of measurement blocks can be achieved, limited only by overall system performance (network traffic, VibroSight computer configuration and so on).

VibroSmart DMS suitability

The following table shows which VibroSmart DMS modules are available according to the application.

Type of system	Suitable VibroSmart DMS modules
Machinery protection system (MPS)	VSI010 and VSV30x
Condition monitoring system (CMS)	VSI010 and VSV30x

VSI010 introduction

The VibroSmart VSI010 module is a flexible communications interface module that acts as a data communications bridge and allows a measurement block to communicate with a range of external industrial networks.

The VibroSmart VSI010 is an optional communications module, that is, it is not required by stand-alone VibroSmart DMSs that do not communicate with external systems.

The VibroSmart VSI010's main function is to capture data and events from other VibroSmart DMS modules, in the same measurement block as the VSI010 module, and make this data available to third-party fieldbus master devices, such as a DCS or PLC. To do this, it implements two flexible fieldbus communications channels that can be configured for either serial-based or Ethernet-based protocols.

Note:

Refer to the VibroSmart VSI010 data sheet for further information and detailed specifications.

The VSI010 module:

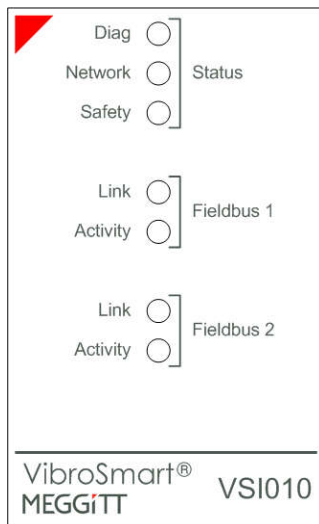
- communicates with the VibroSight software (for configuration and data transfer)
- captures data and events from modules of the same measurement block
- makes data available to third party devices, such as a DCS, through its flexible communications interfaces
- establishes safe data transmission through the fieldbus channel, by implementing data and link protection protocols as defined in the PRO Isafe standard
- provides four physical Ethernet ports, of which two are selected by user configuration
- has two relay outputs that are suitable for safety applications

- can be used in standard configurations and safety related configurations.

VSI010 front panel

The front panel of the VSI010 module allows you to view the status of the module and its communication ports, in order to check that the DMS is working properly.

The following figure shows the different LED indicators present on the VSI010 module's front panel.



VSI010 front panel

VSI010 module status

The following table relates the LED activity on the front panel of a VSI010 module to its status.

LED	LED state	VSI010 module status	Description	Monitoring status
Diag (Status)	The Diag (Status) LED indicates the status of the VSI010 module, such as normal operation, configuration status or internal hardware or firmware failures			
	Off	No power supply	Not powered or external power supply out of normal range	Not running
	Green	Normal operation	Operating normally	Running
	Green blinking	On hold	Configured and temporarily in the Stabilisation operating mode	Not running
	Yellow blinking	Firmware update	Firmware is being updated	Not running
	Red	Hardware or software failure	Internal power supply failure, memory failure (flash or RAM), watchdog timer failure, software failure or internal firmware version incompatibility	Not running

	Red blinking	Configuration error	Not configured yet. If this status persists, it suggests that the configuration is either incompatible with the VSI010 module s firmware or is invalid (for example, an integrity check of the configuration found a problem).	Not running
LED	LED state	VSI010 module status	Description	Monitoring status
Network (Status)	The Network (Status) LED indicates Ethernet link activity and network time server synchronisation			
	Off	No link	No link	Running
	reen	Sync	Link is active on at least one Ethernet port and either the local clock is synchronised with the PTP master module in the measurement block or the module is the PTP master module	Running
	reen blinking	Link	Link is active on at least one Ethernet port but the local clock is not synchronised with the PTP master module in the measurement block	Running
	Yellow	Real-time network error	The real-time network has experienced an error (the VSI010 module s real-time network status is bad)	Running
	Red	Network redundancy error	The network redundancy firmware experienced an error and stopped running (the VSI010 module s Ethernet port Eth2/ 10 is disabled)	Not running
	Red blinking	Link quality error	Data reception errors are higher than normal	Not running
	Note: Data reception errors are typically caused by a bad physical link, for example, Ethernet cables that are faulty, of poor quality or too long			
LED	LED state	VSI010 module status	Description	Monitoring status
	The Safety (Status) LED indicates the status of the VSI010 module s safety function and any active adaptive monitoring functions (AB or TM)			
	reen	Normal operation of safety function	Safety function operating normally (without any failure)	Running
	Yellow	Trip multiply	Trip multiply (TM) function is active	Running
			Performing a safety test (the	

Safety (Status)	Yellow blinking	Safety test	VSI010 module is in the fail-safe operating mode)	Not running
	Red	Alarm bypass	Alarm bypass (AB) function is active	Running
	Red blinking	Failure of safety function	The safety function is affected by one of the following failures: safety microcontroller independent watchdog timer timeout, internal processor to safety microcontroller communications failure, safety microcontroller failure, internal processor failure, test pattern failure, safety function run due to the configured signal processing	Not running
LEDs and states		VSI010 fieldbus status	Description	Monitoring status
Link (Fieldbus 1 or Fieldbus 2)	Activity (Fieldbus 1 or Fieldbus 2)	The Link and Activity LEDs indicate the status for each fieldbus (Fieldbus 1 or Fieldbus 2)		
Off	Off	Fieldbus not configured	The fieldbus is disabled or not configured	---
Green	Green blinking	Normal operation of fieldbus	The fieldbus is enabled and configured, and the fieldbus client (master) is communicating the VSI010 server (slave)	---
Yellow	Off	No fieldbus link	The fieldbus is enabled and configured but the fieldbus client (master) is not communicating the VSI010 server (slave). For example, the fieldbus client (master) is not present or not using the communications settings configured for the fieldbus port of the VSI010 server (slave).	---
Yellow blinking	Off	Fieldbus auto-negotiation	The fieldbus is enabled and configured, and the fieldbus client (master) is negotiating with the VSI010 server (slave)	---
Red blinking	Off	Fieldbus auto-negotiation error	The fieldbus is enabled and configured but the negotiation between the fieldbus client (master) and the VSI010 server (slave) failed. For example, due to mismatch of PROFINET slot mapping.	---

Related concepts

[VibroSight software diagnostic information](#)
[VM600 card and VibroSmart DMS device diagnostic logs](#)

Related tasks

[Rebooting a VibroSmart DMS module](#)
[Viewing VibroSmart DMS device information](#)
[Viewing VibroSmart DMS device information](#)
[General VibroSight monitoring system troubleshooting](#)

Related reference

[VSB010 terminal base](#)

VSB010 terminal base

The VSB010 terminal base associated with the VSI010 module provides all of the I/O connections required for interfacing with the module. It also includes a DIP switch to select the Ethernet connectors used by the module and LED indicators to show the status of the Ethernet communication ports on the terminal base.

VibroSmart DMS terminal bases incorporate mechanical key coding, embedded buses, auto-detection and auto-configuration to produce a system that is simple to operate and use.

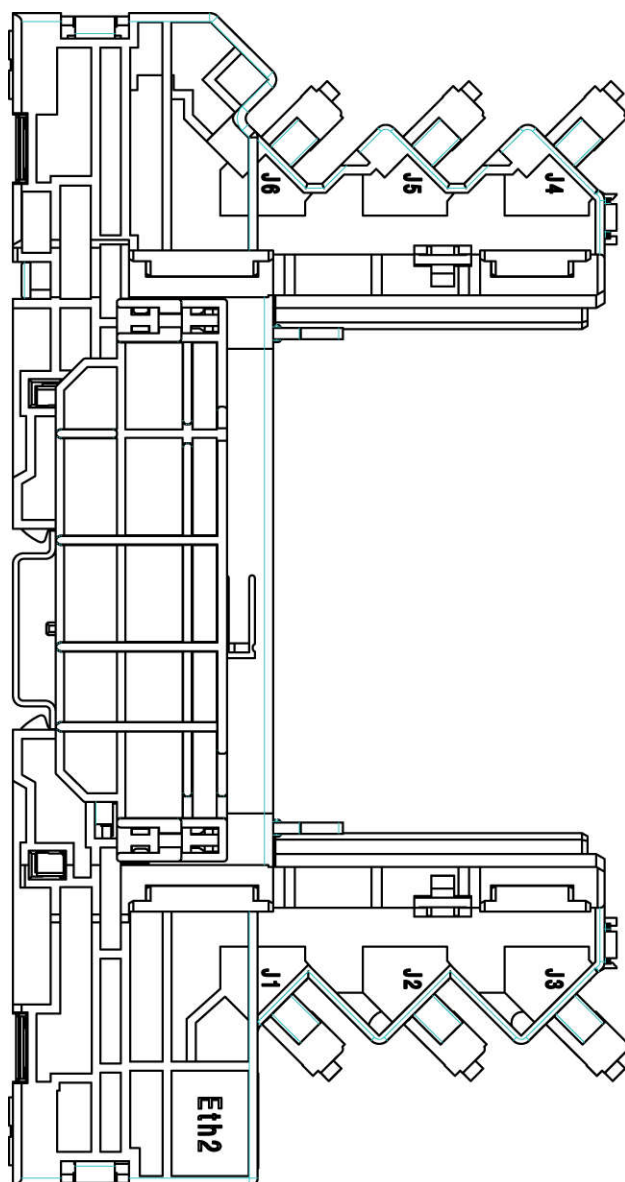
Note:

Mechanical key coding on the modules and terminal bases ensures that a module can only be mounted on the correct (associated) terminal base. For example, a VSI010 module on a VSB010 terminal base.

VibroSmart DMS modules and terminal bases are also hot-swappable, that is, live insertion and removal of modules, with automatic configuration, is supported.

Connectors

The following figure shows the location of the connectors on the VSB010 terminal base. The view is from the left side of the terminal base, so the Eth1 Ethernet connector and the 11 sidebus connector on the right side of the terminal base cannot be seen. (However, their locations are similar to the Eth2 and 10 connectors but on the opposite side.)



VSB010 terminal base connectors

Connector	Location	Description
1	Bottom, rear	Module power supply and discrete signal interface (DSI)
2	Bottom, middle	Not used
3	Bottom, front	Output relays: Relay 1 and Relay 2
4	Top, front	Ethernet-based fieldbuses: ieldbus 1 and ieldbus 2
5	Top, middle	Serial-based fieldbus: ieldbus 1
6	Top, rear	Serial-based fieldbus: ieldbus 2
Eth1	Bottom, right	System bus
Eth2	Bottom, left	System bus

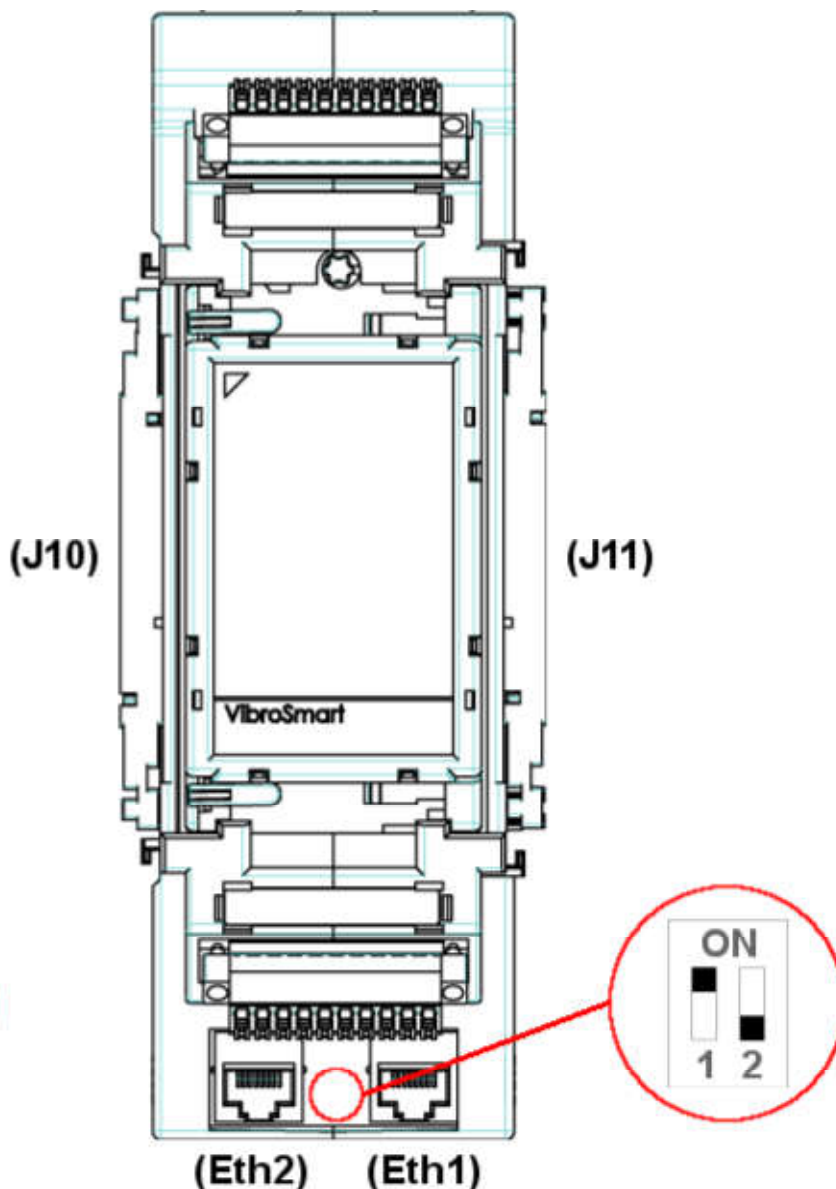
11	Middle, right	System bus and power
10	Middle, left	System bus and power

Note:

The VSB010 terminal base is supplied with a set of 6x terminal base connectors that are labelled and mechanically key-coded for the VSI010 module / VSB010 terminal base. Sets of additional connectors are available as accessories.

DIP switch

The following figure shows the location of the DIP switch on the VSB010 terminal base. The view is from the front of the terminal base, so the Eth1 Ethernet connector and the 11 sidebus connector are on the right side of the terminal base. The Eth2 Ethernet connector and the 10 sidebus connector are on the left side of the terminal base.



VSB010 terminal base DIP switch

The DIP switch is used to select how the VibroSmart DMS module's SBUS (intra-module) is routed externally for inter-module and extra-module communications: using either the sidebus connectors or the Ethernet connectors on the VibroSmart DMS terminal base.

The Ethernet connectors (Eth1 and Eth2) can be used for communication between a host computer and a VibroSmart DMS module or for communication between VibroSmart DMS modules that are located some distance from each other.

The sidebus connectors (10 and 11) can be used for communication between adjacent VibroSmart DMS modules to reduce installation complexity and cost. However, the modules must be mounted adjacent to one another in order to use the sidebus.

Accordingly, the selection of the Ethernet connector or the sidebus connector for each side of a VibroSmart DMS module depends on the configuration of the modules used in a particular application.

The DIP switch contains two individual switches and is located in a recess between the Ethernet connectors at the bottom of the VSB010 terminal base (see figure above). The switch on the left selects the active SBUS connector (Eth2 or 10) on the left side of the VSB010 terminal base, and the switch on the right selects the active SBUS connector (Eth1 or 11) on the right side of the VSB010 terminal base.

The following table relates the individual switches of the DIP switch to the connectors on the each side of the VSB010 terminal base.

Switch	Position	Function	Notes
Left (1)	Down (OFF)	The SBUS is routed to Eth2 (and 10 is unused)	The switch on the left of the DIP switch (switch 1) affects the connectors on its side of the terminal base: 10 and Eth2. (That is, on the left of the terminal base, looking from the front.)
	Up (ON)	The SBUS is routed to 10 (and Eth2 is unused)	
Right (2)	Down (OFF)	The SBUS is routed to Eth1 (and 11 is unused)	The switch on the right of the DIP switch (switch 2) affects the connectors on its side of the terminal base: 11 and Eth1. (That is, on the right of the terminal base, looking from the front.)
	Up (ON)	The SBUS is routed to 11 (and Eth1 is unused.)	

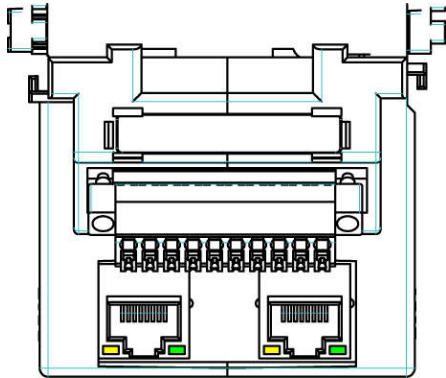
Note:

An Ethernet connection (Eth1 or Eth2) is always required for extra-module communications between a VibroSmart DMS module (or measurement block) and a host computer.

During normal operation, the DIP switch settings are constantly monitored by the VibroSmart DMS module. When the DIP switch settings change, the physical routing of the SBUS (Ethernet) signals via the Ethernet or sidebus connectors changes immediately (that is, there is no requirement to turn the power to the module off and then on).

Communication status

The following figure shows the Eth port LED indicators present on the front of the VSB010 terminal base. The Eth1 port is on the right of the terminal base and the Eth2 port is on the left.



VSB010 terminal base Ethernet LEDs

The following table relates the LED activity for the Ethernet ports on the front of a VSB010 terminal base to the communication status.

LED	LED state	Description
Left (orange)	The left (orange) Ethernet (R 45) LED indicates the speed of the connection	
	Off	No link speed established
	On	Link operating at 100 Mbps
Right (green)	The right (green) Ethernet (R 45) LED indicates the status of the connection	
	Off	No link established
	On	Link established normal operation with no traffic on the link
	Blinking	Link established normal operation with traffic on the link. The blink rate is determined by the amount of network traffic (more activity results in a higher blink rate).

- [VSB010 interface connector pinouts](#)

The VSB010 associated with the VSI010 module provides all of the I/O connections required for interfacing with the module.

Related concepts

[System bus \(SBUS\)](#)

Related reference

[VSB010 interface connector pinouts](#)

[VSI010 front panel](#)

VSB010 interface connector pinouts

The VSB010 associated with the VSI010 module provides all of the I/O connections required for interfacing with the module.

The pinouts for the VSB010 screw-terminal connectors are given below.

Note:

Looking from the front of a VibroSmart terminal base, the 1, 2 and 3 connectors are on the bottom of the terminal base and the 4, 5 and 6 connectors are on the top of the terminal base.

Note that the orientation of the screw-terminal connectors is different for the connectors on the bottom (1 to 3) and on the top (4 to 6) of the terminal base:

- for 1 to 3, pin 1 is located on the left and pin 10 is located on the right, looking from the front of the terminal base.
- for 4 to 6, pin 1 is located on the right and pin 10 is located on the left, looking from the front of the terminal base.

The VSB010 terminal base is supplied with a set of 6x terminal base connectors that are labelled and mechanically key-coded for the VSI010 module / VSB010 terminal base. Sets of additional connectors are available as accessories.

J1 – Module power supply and discrete signal interface (DSI)

Label	Pin	Direction	Description
24V 1	1	I	+24 V _{DC} power supply input (to module)
24V 2	2	I	+24 V _{DC} power supply input (to module)
ND 1	3		round
ND 2	4		round
---	5	---	Not used
TM	6	I	Trip multiply (DSI input)
AB	7	I	Alarm bypass (DSI input)
AR	8	I	Alarm reset (DSI input)
BCS	9	I	fieldbus communication stop (DSI input)
RET	10		round (DSI common)

J2 – Not used

Label	Pin	Direction	Description
---	1	---	Not used
---	2	---	Not used
---	3	---	Not used
---	4	---	Not used
---	5	---	Not used
---	6	---	Not used
---	7	---	Not used

---	8	---	Not used
---	9	---	Not used
---	10	---	Not used

J3 – Output relays

Label	Pin	Direction	Description
RL1NC	1	B	Normally closed (NC) contact of relay 1
RL1 C	2	B	Common (COM) contact of relay 1
RL1NO	3	B	Normally open (NO) contact of relay 1
RL2NC	4	B	Normally closed (NC) contact of relay 2
RL2 C	5	B	Common (COM) contact of relay 2
RL2NO	6	B	Normally open (NO) contact of relay 2
---	7	---	Not used
---	8	---	Not used
---	9	---	Not used
---	10	---	Not used

Note:

By convention, the normally closed (NC) and normally open (NO) relay terminology refers to the state of the relay contacts when the relay s coil is de-energised. This use of the word “normally” is not directly related to the “normal” operation/state of the machinery being monitored, as explained below.

When the power supply to a device is turned off:

- There is a closed circuit between the normally closed (NC) and common (COM) contacts.
- There is an open circuit between the normally open (NO) and common (COM) contacts.

When the power supply to a device is turned on, the state of the relay contacts depends on whether the relay s coil is energised or de-energised.

When the relay s coil is energised:

- There is an open circuit between the normally closed (NC) and common (COM) contacts.
- There is a closed circuit between the normally open (NO) and common (COM) contacts.

Whether a relay s coil is energised or de-energised depends on how the relay has been configured, for example, as normally de-energised (NDE) or normally energised (NE) and as latched or not latched. It also depends on the control input that is used to drive the relay (that is, logical functions).

J4 – Ethernet-based fieldbus 1 and 2

Label	Pin	Direction	Description
1 Tx+	1	O	Ethernet fieldbus 1 differential transmit signal (+)
1 Tx	2	O	Ethernet fieldbus 1 differential transmit signal ()
1 Rx+	3	I	Ethernet fieldbus 1 differential receive signal (+)
1 Rx	4	I	Ethernet fieldbus 1 differential receive signal ()
SHLD	5	S	Ethernet fieldbus 1 shield
2 Tx+	6	O	Ethernet fieldbus 2 differential transmit signal (+)
2 Tx	7	O	Ethernet fieldbus 2 differential transmit signal ()
2 Rx+	8	I	Ethernet fieldbus 2 differential receive signal (+)
2 Rx	9	I	Ethernet fieldbus 2 differential receive signal ()
SHLD	10	S	Ethernet fieldbus 2 shield

J5 – Serial-based fieldbus 1

Label	Pin	Direction	Description
B1A (PRO IBUS RxD/TxD-N: A line, normally green)	1	B/O	Serial fieldbus 1 RS-485 differential receive/transmit signal () or RS-422 differential transmit signal ()
B1B (PRO IBUS RxD/TxD-P: B line, normally red)	2	B/O	Serial fieldbus 1 RS-485 differential receive/transmit signal (+) or RS-422 differential transmit signal (+)
B1A (PRO IBUS RxD/TxD-N: A line, normally green)	3	B/I	Serial fieldbus 1 RS-485 differential receive/transmit signal () or RS-422 differential receive signal ()
B1B (PRO IBUS RxD/TxD-P: B line, normally red)	4	B/I	Serial fieldbus 1 RS-485 differential receive/transmit signal (+) or RS-422 differential receive signal (+)
SHLD	5	S	Serial fieldbus 1 shield (module chassis ground)
1 ND	6		Serial fieldbus 1 isolated ground (for terminations, isolation 250 V)
B1VP	7	O	Serial fieldbus 1 isolated +5 V _{DC} power supply output (referenced to 1 ND, isolation 250 V)
CAN1H	8	B	Reserved for future use with CAN-based protocols
CAN1L	9	B	Reserved for future use with CAN-based protocols

SHLD	10	S	Serial fieldbus 1 shield (module chassis ground)

Note:

Serial fieldbus 1 can support either half-duplex (2-wire RS-485) or full-duplex (4-wire RS-422 or RS-485) buses. Half-duplex buses are supported by default, while full-duplex buses require a hardware modification. Contact Meggitt Sensing Systems for more information.

J6 – Serial-based fieldbus 2

Label	Pin	Direction	Description
B2A (PRO IBUS RxD/TxD-N: A line, normally green)	1	B/O	Serial fieldbus 2 RS-485 differential receive/transmit signal () or RS-422 differential transmit signal ()
B2B (PRO IBUS RxD/TxD-P: B line, normally red)	2	B/O	Serial fieldbus 2 RS-485 differential receive/transmit signal (+) or RS-422 differential transmit signal (+)
B2A (PRO IBUS RxD/TxD-N: A line, normally green)	3	B/I	Serial fieldbus 2 RS-485 differential receive/transmit signal () or RS-422 differential receive signal ()
B2B (PRO IBUS RxD/TxD-P: B line, normally red)	4	B/I	Serial fieldbus 2 RS-485 differential receive/transmit signal (+) or RS-422 differential receive signal (+)
SHLD	5	S	Serial fieldbus 2 shield (module chassis ground)
2 ND	6		Serial fieldbus 2 isolated ground (for terminations, isolation 250 V)
B2VP	7	O	Serial fieldbus 2 isolated +5 V _{DC} power supply output (referenced to 2 ND, isolation 250 V)
CAN2H	8	B	Reserved for future use with CAN-based protocols
CAN2L	9	B	Reserved for future use with CAN-based protocols
SHLD	10	S	Serial fieldbus 2 shield (module chassis ground)

Note:

Serial fieldbus 2 can support either half-duplex (2-wire RS-485) or full-duplex (4-wire RS-422 or RS-485) buses. Half-duplex buses are supported by default, while full-duplex buses require a hardware modification. Contact Meggitt Sensing Systems for more information.

Parent topic: [VSB010 terminal base](#)

Related reference

[VSB010 terminal base](#)

VibroSmart VSI010 module / VSB010 terminal base factory assigned defaults

A VibroSmart VSI010 module / VSB010 terminal base is supplied by Meggitt Sensing Systems with the following factory assigned defaults.

Ethernet ports (IP and DHCP)

By default, for a VibroSmart VSI010 module / VSB010 terminal base, the Ethernet ports are configured as enabled using dynamic addressing (Use DHCP server), and the Static IP settings are not configured (that is, the fields are left empty).

Note:

When dynamic addressing using the dynamic host configuration protocol (DHCP) is used, a DHCP server must be available on the same network as the VibroSight system, in order for VSI010 modules / VSB010 terminal bases to be automatically assigned an IP address.

Note:

Contact your IT department or network administrator for information on whether a DHCP server is available on your network.

It is important to consider these factory assigned default Ethernet port settings when connecting a VSI010 module / VSB010 terminal base to a network for the first time and/or when reconfiguring or replacing a module / terminal base in an application.

When connecting a VibroSmart VSI010 module / VSB010 terminal base to a network, ensure that the individual switches of the DIP switch on the VSB010 terminal base are set to select the required SBUS connector on either side of the terminal base: Eth1 or 11 on the right side of the terminal base and Eth2 or 10 on the left side of the terminal base.

Note:

A DIP switch on the terminal base selects either the sidebus connector (1x) or the Ethernet connector (Ethx) as the active SBUS port for each side of the terminal base.

Only two physical ports can be active at any one time, that is, either 11 or Eth1 (right side) and either 10 or Eth2 (left side).

Using VibroSight System Manager, the Ethernet port settings for a VibroSmart VSI010 module / VSB010 terminal base can be changed as required using the IP settings command. For example, to use static addressing instead of dynamic addressing (that is, to use fixed IP addresses).

Time reference (NTP)

By default, a VibroSmart VSI010 module / VSB010 terminal base uses the local clock on the host computer that is running the VibroSight Server as its time reference. That is, by default, the use of an NTP (network time protocol) server as a time reference is configured as disabled (NTP-free

operation).

Note:

A VibroSight / VibroSmart system can be deployed for operation either without an NTP server (NTP-free) or with an NTP server. If an NTP server is being used, contact your IT department or network administrator for information on the NTP server available on your network.

It is important to consider this factory assigned default time reference setting when connecting a VibroSmart VSI010 module / VSB010 terminal base to a network for the first time and/or when reconfiguring or replacing a module / terminal base in an application.

Using VibroSight System Manager, the time reference settings for a VibroSmart VSI010 module / VSB010 terminal base can be changed as required using the NTP settings command.

Firmware

VibroSmart VSI010 modules are supplied with the latest version of firmware. For VibroSight 3.6.0, the recommended firmware version is:

- firmware: 642-002-000-009.

It is strongly recommended to use the most recent version of the VSI010 module firmware that is compatible with the version of VibroSight software being used.

The versions of firmware running on a module can be changed if necessary, for example, so that all modules of the same type in a VibroSmart DMS are running the same version of firmware.

Related concepts

[Dynamic host configuration protocol \(DHCP\)](#)

[Auto IP](#)

[System bus \(SBUS\)](#)

Related tasks

[Configuring IP settings for a VibroSmart DMS module using a DHCP server](#)

[Configuring IP settings for a VibroSmart DMS module using a static IP address](#)

[Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

[Checking the firmware](#)

[Changing firmware](#)

[Setting up an Ethernet connection](#)

Related reference

[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)

[VibroSmart VSV30x module / VSB300 terminal base factory assigned defaults](#)

[Network time protocol \(NTP\)](#)

[VibroSight software and VibroSmart VSI010 module firmware compatibility](#)

VSN010 introduction

The VibroSmart VSN010 is a real-time Ethernet switch designed specifically for operation with VibroSmart DMS modules connected in redundant network topologies, such as a redundant HSR ring.

Note:

A VibroSmart DMS is limited to a maximum of 8 measurement blocks without VSN010 real-time Ethernet switches but if each measurement block contains a VSN010, then a higher number of measurement blocks can be achieved, limited only by overall system performance (network traffic, VibroSight computer configuration and so on).

The VSN010 switch incorporates two Ethernet ports that are interconnected by full-duplex links (operating in parallel) and implements protocols based on the rapid spanning tree protocol (RSTP) and the high-availability seamless redundancy (HSR) specification. The RSTP ensures a loop-free topology for non-real-time traffic, while the HSR implementation ensures redundant communications for real-time traffic.

This allows a VibroSmart DMS module to connect to a redundant HSR ring network as a doubly attached node implementing the HSR protocol (DANH) using both Ethernet ports, or to connect to a standard (non-redundant) Ethernet network as a singly attached node (SAN) using the single Ethernet port.

The VibroSmart VSN010's main function is to act as a gateway (communications bridge) between a redundant VibroSmart network and a standard Ethernet network, that is, it allows DANHs and SANs (including the host computer running the VibroSight software) to communicate.

Note:

Refer to the VibroSmart VSN010 data sheet for further information and detailed specifications.

The VSN010 module:

- provides two Ethernet ports (RP1 and RP2) that are interconnected by full-duplex links (operating in parallel) for connection to redundant network topologies, such as a redundant HSR ring, as a DANH
- provides one Ethernet port (gateway) for connection to standard Ethernet network topologies as a SAN
- implements a protocol based on HSR to ensure redundant communications for real-time traffic
- implements a protocol based on the RSTP to ensure loop-free topologies for non-real-time traffic
- forwards all traffic (both real-time and non-real-time packets) from one port to the other on the ring (RP1 - RP2), that is between DANHs
- forwards non-real-time packets to and from the standard Ethernet network (RP1 - gateway and RP2 - gateway), that is, between DANHs and SANs
- communicates with the VibroSight software (for configuration and data transfer)
- enables cost-effective redundant networks of VibroSmart DMS modules in applications where the cost of failure is high.

Note:

Unlike VibroSmart DMS modules such as the VSI010 and the VSV30x, the VSN010 device is not added to a VibroSmart measurement block and configured using VibroSight Configurator. In this regard, the VSN010 can be thought of as a network infrastructure device (like other network switches

and routers), rather than as a VibroSmart DMS module.

However, when a VSN010 is included in a VibroSmart measurement block, this needs to be included in the configuration (VibroSight Configurator) at the measurement block node level.

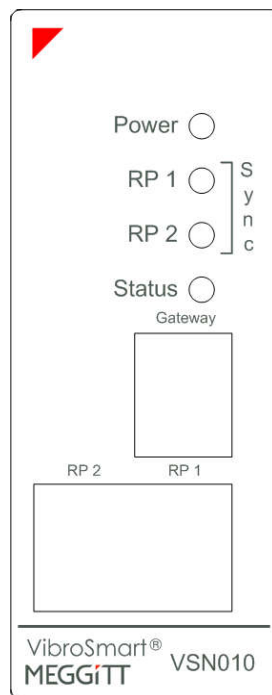
Related reference

[Adding a VSN010 to a measurement block](#)
[DMS Measurement Block parameters](#)

VSN010 front panel

The front panel of the VSN010 switch allows you to view the status of the switch and its communication ports, in order to check that the redundant DMS network is working properly.

The following figure shows the different LED indicators present on the VSN010 switch s front panel.



VSN010 front panel

VSN010 module status

The following table relates the LED activity on the front panel of a VSN010 switch to its status and the status of the DMS network.

LED	LED state	VSN010 module status	Description
Power	The Power LED indicates the status of the VSN010 switch s power supplies (input and internal)		
	Off	No power supply	Not powered or power supply is out of normal range

	reen	Normal operation	Operating normally (power supply is OK)
LED	LED state	VSN010 module status	Description
RP1 and RP2 (Sync)	The RP1 and RP2 (Sync) LEDs indicate the status of the real-time Ethernet on ring port 1 and ring port 2		
	Off	No link	No link on ring port 1 / 2
	reen	Sync	Link on ring port 1 / 2, with PTP synchronisation
	reen blinking	Link	Link on ring port 1 / 2, with no PTP synchronisation
	Red	Link quality error (Sync)	Data reception errors are higher than normal, with PTP synchronisation
	Red blinking	Link quality error (Link)	Data reception errors are higher than normal, with no PTP synchronisation
	Note: Data reception errors are typically caused by a bad physical link, for example, Ethernet cables that are faulty, of poor quality or too long		
LED	LED state	VSN010 module status	Description
Status	The Status LED indicates the status of the VSN010 switch		
	Off	TBD	Redundant DMS network is off
	reen	Normal operation	Redundant DMS network in on (operating normally)
	Yellow blinking	irmware update	irmware is being updated
	Red	Network redundancy error	The network redundancy firmware experienced an error and stopped running (the VSV30x module s ring port RP2 is disabled)
	Red blinking	irmware incompatibility	irmware running on the VSN010 is not compatible with the firmware running on a VibroSmart DMS module that is connected to the VSN010

Related concepts

[VibroSight software diagnostic information](#)

[VM600 card and VibroSmart DMS device diagnostic logs](#)

Related tasks

[Rebooting a VibroSmart DMS module](#)

[Viewing VibroSmart DMS device information](#)

[Viewing VibroSmart DMS device information](#)

[eneral VibroSight monitoring system troubleshooting](#)

Related reference

[VSN010 connectors](#)

VSN010 connectors

Connectors

The image shows two views of the VicroSmart VSN010 Gateway. The **(Front view)** on the left shows a vertical panel with a red triangle in the top left corner. It features four circular indicators: 'Power', 'RP 1', 'RP 2', and 'Status' (labeled 'Gateway'). Below these are two RJ45 ports labeled 'RP 2' and 'RP 1'. At the bottom, it says 'VicroSmart® MEGGITT VSN010'. The **(Bottom view)** on the right shows the underside of the device, featuring a label that reads 'INPUT: 18-32V DC 8W max.' with polarity symbols '+ - + -'. Below this label are two terminal blocks for power supply inputs, with the text '+24 VDC power supply inputs' below them.

Connector	Location	Description
RP1	Bottom right, front	First network port (ring port 1) for connection to a redundant VibroSmartDMS (DANHs)
RP2	Bottom left, front	Second network port (ring port 2) for connection to a redundant VibroSmart DMS (DANHs)
Gateway	Right, front	Network port (Gateway) for connection to a standard Ethernet network (SANs) such as a control network, including the host computer running the VibroSight software
+24V _{DC} power supply inputs	Rear, bottom	Device power supply inputs

Device power supply connector pinouts

Pin	Label	Direction	Description
1	24V	I	+24 V _{DC} power supply input (to module)
2	ND		round

Related reference[VSN010 front panel](#)

VibroSmart VSN010 device factory assigned defaults

A VibroSmart VSN010 device is supplied by Meggitt Sensing Systems with the following factory assigned defaults.

Ethernet ports (IP and DHCP)

By default, for a VibroSmart VSN010 device, the Ethernet ports are configured as enabled using dynamic addressing (Use DHCP server), and the Static IP settings are not configured (that is, the fields are left empty).

Note:

When dynamic addressing using the dynamic host configuration protocol (DHCP) is used, a DHCP server must be available on the same network as the VibroSight system, in order for VSN010 devices to be automatically assigned an IP address.

Note:

Contact your IT department or network administrator for information on whether a DHCP server is available on your network.

It is important to consider these factory assigned default Ethernet port settings when connecting a VibroSmart VSN010 device to a network for the first time and/or when reconfiguring or replacing a module / terminal base in an application.

Using VibroSight System Manager, the Ethernet port settings for a VibroSmart VSN010 device can be changed as required using the IP settings command. For example, to use static addressing instead of dynamic addressing (that is, to use fixed IP addresses).

Time reference (NTP)

By default, a VibroSmart VSN010 device uses the local clock on the host computer that is running the VibroSight Server as its time reference. That is, by default, the use of an NTP (network time protocol) server as a time reference is configured as disabled (NTP-free operation).

Note:

A VibroSight / VibroSmart system can be deployed for operation either without an NTP server (NTP-free) or with an NTP server. If an NTP server is being used, contact your IT department or network administrator for information on the NTP server available on your network.

It is important to consider this factory assigned default time reference setting when connecting a VibroSmart VSN010 device to a network for the first time and/or when reconfiguring or replacing a module / terminal base in an application.

Using VibroSight System Manager, the time reference settings for a VibroSmart VSN010 device can be changed as required using the NTP settings command.

Firmware

VibroSmart VSN010 devices are supplied with the latest version of firmware. or VibroSight 3.6.0, the recommended firmware version is:

- firmware: 642-004-000-011.

It is strongly recommended to use the most recent version of the VSN010 device firmware that is compatible with the version of VibroSight software being used.

The versions of firmware running on a device can be changed if necessary, for example, so that all devices of the same type in a VibroSmart DMS are running the same version of firmware.

Adding a VSN010 to a measurement block

The VSN010 has three Ethernet ports that allow VibroSmart DMS measurement blocks to be connected in a HSR ring network topology for increased system availability.

Note:

A VibroSmart DMS is limited to a maximum of 8 measurement blocks without VSN010 real-time Ethernet switches but if each measurement block contains a VSN010, then a higher number of measurement blocks can be achieved, limited only by overall system performance (network traffic, VibroSight computer configuration and so on).

The Ethernet ports (RP1, RP2 and Gateway) can be found on the front panel of the VSN010.

VibroSmart DMS networking

A VibroSmart DMS module, such as a VSI010 or a VSV30x, incorporates two Ethernet ports that are interconnected by full-duplex links (operating in parallel) and implements protocols based on the rapid spanning tree protocol (RSTP) and the high-availability seamless redundancy (HSR) specification. The RSTP ensures a loop-free network topology for non-real-time traffic, while the HSR implementation ensures redundant communications for real-time traffic. This allows a VibroSmart DMS module to connect to a standard (non-redundant) Ethernet network as a singly attached node (SAN) using a single Ethernet port in linear (daisy-chained) or star network topologies, or to connect to a doubly attached node implementing the HSR protocol (DANH) using both Ethernet ports in a redundant HSR ring network topology.

HSR ring network topology

When connected in redundant HSR ring network topology, the dual Ethernet ports of a VibroSmart module allow it to behave as a DANH. For example, in a HSR ring network topology the HSR protocol of the transmitting VibroSmart module transmits copies of the message (packet) in both

directions (that is, on different independent network paths) at the same time. The HSR protocol of the receiving VibroSmart module processes the message that arrives first, discarding any duplicates. Thus, in the case of a single point of failure (for example, due to a broken cable or individual VibroSmart module being reconfigured online or even failing), the message will still be received via the other direction (network path).

In a HSR ring network topology, the VSN010 Ethernet switch forwards all traffic (both real-time and non-real-time packets) from one port to the other on the ring (RP1 -- RP2) but only forwards non-real-time packets to and from the standard Ethernet network (Gateway -- RP1 and Gateway -- RP2).

Using a HSR ring network topology

There are three connectors (8P8C (RJ 45), female) on a VSN010 for this purpose:

- RP1 First network port (ring port 1) for connection to a redundant VibroSmart network (DANHs). This is like an Ethernet port of a VibroSmart DMS module.
- RP2 Second network port (ring port 2) for connection to a redundant VibroSmart network (DANHs). This is like an Ethernet port of a VibroSmart DMS module
- Gateway Network port (Gateway) for connection to a standard Ethernet network (SANs) such as a VibroSight control network, including the host computer running the VibroSight software.

To connect the VibroSmart DMS modules of a measurement block in a HSR ring network topology:

- The VibroSmart DMS modules (VSI010 and/or VSV30x) of the measurement block and the VSN010 must be connected together in a redundant HSR ring network topology.

That is, one ethernet port (Ethernet port or RPx) of each device should be connected to one ethernet port (Ethernet port or RPx) of the next device in the ring and the other ethernet port (Ethernet port or RPx) of each device should be connected to the ethernet port (Ethernet port or RPx) of the previous device in the ring, until all devices of the measurement block are connected together in a HSR ring.

- The VSN010 of the measurement block must be connected to the standard Ethernet network that includes the host computer running the VibroSmart software.

That is, the gateway port (Gateway) of the VSN010 device should be connected the standard (non-redundant) Ethernet network.

Note:

When a measurement block contains a VSN010, this needs to be included in the configuration (VibroSight Configurator) at the measurement block node level using the VSN010 presence check box.

Related reference

[DMS Measurement Block parameters](#)

VSV30x introduction

The VibroSmart VSV30x is a vibration monitoring module with two dynamic input channels (for

example, vibration or pressure) and one auxiliary input channel (tachometer or DC process input).

The VibroSmart VSV30x is one of the core VibroSmart DMS signal processing modules that provides the ability to concurrently acquire and process signal components and derive numeric values (extracted data) corresponding to the overall magnitude and frequency content of the vibration signal. It is capable of stand-alone vibration monitoring or can be integrated with other VibroSmart DMS modules to create more comprehensive measurement blocks and systems.

Note:

Refer to the VibroSmart VSV30x data sheet for further information and detailed specifications.

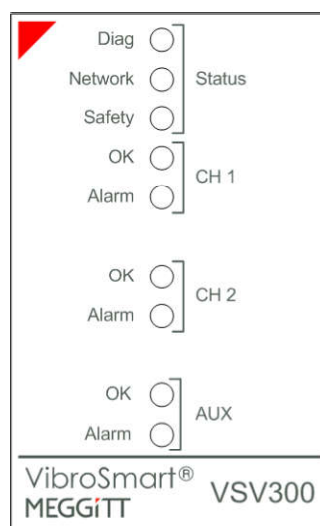
The VSV30x module:

- communicates with the VibroSight software (for configuration and data transfer)
- implements continuous non-multiplexed data acquisition, so data from multiple input channels is processed in parallel (completely independently)
- implements a low-noise interface path that accepts suitably signal-conditioned dynamic or quasi-static signals
- provides four physical Ethernet ports, of which two are selected by user configuration
- has two relay outputs that are suitable for safety applications
- can be used in standard configurations or safety related configurations.

VSV30x front panel

The front panel of the VSV30x module allows you to view the status of the module and its measurement channels, in order to check that the DMS and the machinery being monitored is working properly.

The following figure shows the different LED indicators present on the VSV30x module s front panel.



VSV30x front panel

VSV30x module status

The following table relates the LED activity on the front panel of a VSV30x module to its status.

LED	LED state	VSV30x module status	Description	Monitoring status
Diag (Status)	The Diag (Status) LED indicates the status of the VSV30x module, such as normal operation, configuration status or internal hardware or firmware failures			
	Off	No power supply	Not powered or external power supply out of normal range	Not running
	reen	Normal operation	Operating normally	Running
	reen blinking	On hold	Configured and temporarily in the Stabilisation operating mode	Not running
	Yellow blinking	irmware update	irmware is being updated	Not running
	Red	Hardware or software failure	Internal power supply failure, memory failure (flash or RAM), watchdog timer failure, software failure or internal firmware version incompatibility	Not running
	Red blinking	Configuration error	Not configured yet. If this status persists, it suggests that the configuration is either incompatible with the VSV30x module s firmware or is invalid (for example, an integrity check of the configuration found a problem).	Not running
LED	LED state	VSV30x module status	Description	Monitoring status
Network	The Network (Status) LED indicates Ethernet link activity and network time server synchronisation			
	Off	No link	No link	Running
	reen	Sync	Link is active on at least one Ethernet port and either the local clock is synchronised with the PTP master module in the measurement block or the module is the PTP master module	Running
	reen blinking	Link	Link is active on at least one Ethernet port but the local clock is not synchronised with the PTP master module in the measurement block	Running

(Status)	Yellow	Real-time network error	The real-time network has experienced an error (the VSV30x module's real-time network status is bad)	Running
	Red	Network redundancy error	The network redundancy firmware experienced an error and stopped running (the VSV30x module's Ethernet port Eth2/ 10 is disabled)	Not running
	Red blinking	Link quality error	Data reception errors are higher than normal	Not running
	Note: Data reception errors are typically caused by a bad physical link, for example, Ethernet cables that are faulty, of poor quality or too long			
LED	LED state	VSV30x module status	Description	Monitoring status
Safety (Status)	The Safety (Status) LED indicates the status of the VSV30x module's safety function and any active adaptive monitoring functions (AB or TM)			
	Green	Normal operation of safety function	Safety function operating normally (without any failure)	Running
	Yellow	Trip multiply	Trip multiply (TM) function is active	Running
	Yellow blinking	Safety test	Performing a safety test (the VSV30x module is in the fail-safe operating mode)	Not running
	Red	Alarm bypass	Alarm bypass (AB) function is active	Running
	Red blinking	Failure of safety function	The safety function is affected by one of the following failures: safety microcontroller independent watchdog timer timeout, internal processor to safety microcontroller communications failure, safety microcontroller failure, internal processor failure, test pattern failure, safety function run due to the configured signal processing	Not running
LED	LED state	VSV30x module status	Description	Monitoring status
OK (CH1, CH2 or AUX)	The OK LED indicates the status of the input signal (Sensor OK Check) for each channel (CH1, CH2 or AUX)			
	Off	Not configured	Channel is either not configured or disabled	Not running
	Green	OK	Input signal is valid	Running
	Red	Not OK	Input signal is not valid: either it is below the Lower Level or above	Running

	blinking		the Upper Level of the Sensor OK Check	
LED	LED state	VSV30x module status	Description	Monitoring status
Alarm (CH1, CH2 or AUX)	The Alarm LED indicates the status of the alarm processing (such as normal operation or an alarm) for each channel (CH1, CH2 or AUX)			
	Off	Not configured	Channel is either not configured or disabled	Not running
	Green	Normal operation	Normal operation with no alarm for the input signal	Running
	Yellow	Single-channel or dual-channel processing Alert alarm	Input signal is in Alert alarm: either it is below the lower alert level (Alert-) or above the upper alert level (Alert+). or a dual-channel processing Alert alarm, the corresponding Alarm LED (CH1, CH2 or AUX) for the second channel of the dual-channel processing pair will also be yellow.	Running
	Red	Single-channel or dual-channel processing Danger alarm	Input signal is in Danger alarm: either it is below the lower danger level (Danger-) or above the upper danger level (Danger+). or a dual-channel processing Danger alarm, the corresponding Alarm LED (CH1, CH2 or AUX) for the second channel of the dual-channel processing pair will also be red.	Running

Related concepts

[VibroSight software diagnostic information](#)

[VM600 card and VibroSmart DMS device diagnostic logs](#)

Related tasks

[Rebooting a VibroSmart DMS module](#)

[Viewing VibroSmart DMS device information](#)

[Viewing VibroSmart DMS device information](#)

[General VibroSight monitoring system troubleshooting](#)

Related reference

[VSB300 terminal base](#)

VSB300 terminal base

The VSB300 terminal base associated with the VSV30x module provides all of the I/O connections required for interfacing with the module. It also includes a DIP switch to select the Ethernet connectors used by the module and LED indicators to show the status of the Ethernet communication ports on the terminal base.

VibroSmart DMS terminal bases incorporate mechanical key coding, embedded buses, auto-detection and auto-configuration to produce a system that is simple to operate and use.

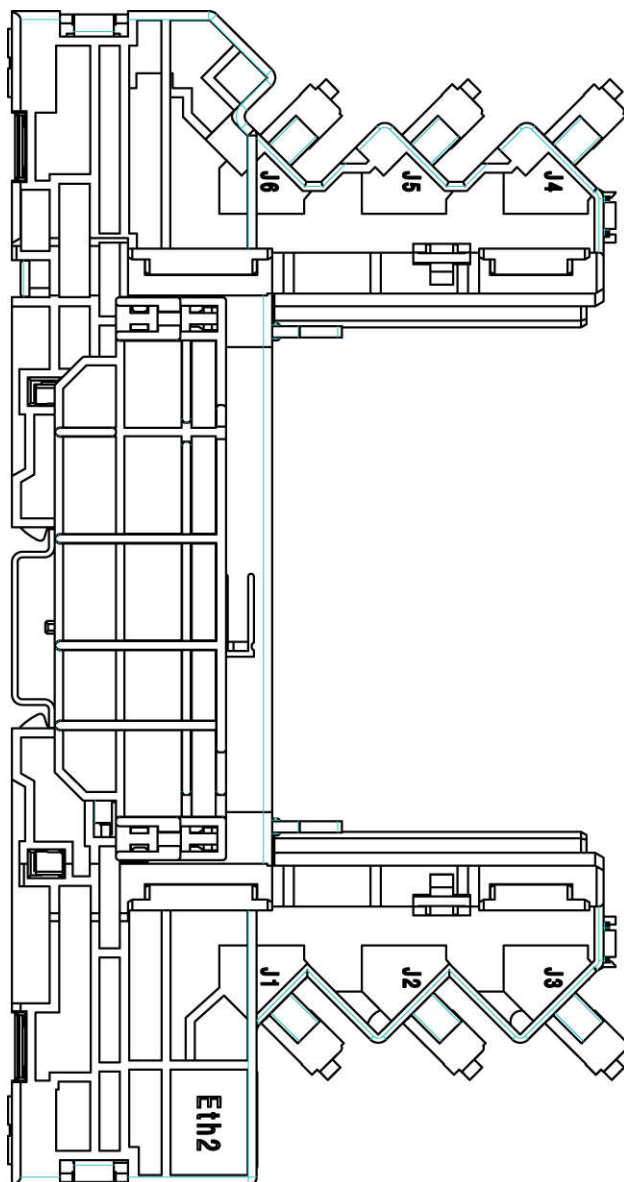
Note:

Mechanical key coding on the modules and terminal bases ensures that a module can only be mounted on the correct (associated) terminal base. For example, a VSV30x module on a VSB300 terminal base.

VibroSmart DMS modules and terminal bases are also hot-swappable, that is, live insertion and removal of modules, with automatic configuration, is supported.

Connectors

The following figure shows the location of the connectors on the VSB300 terminal base. The view is from the left side of the terminal base, so the Eth1 Ethernet connector and the 11 sidebus connector on the right side of the terminal base cannot be seen. (However, their locations are similar to the Eth2 and 10 connectors but on the opposite side.)



VSB300 terminal base connectors

Connector	Location	Description

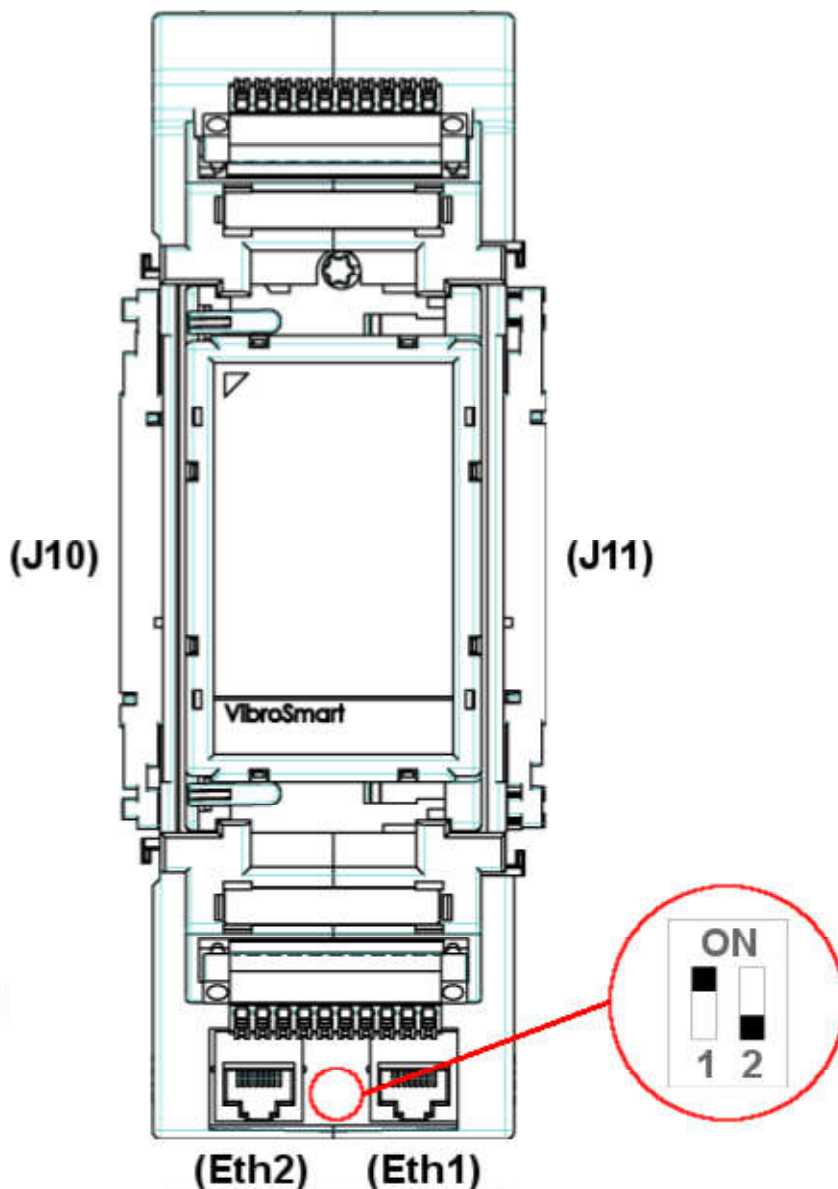
1	Bottom, rear	Module power supply and discrete signal interface (DSI)
2	Bottom, middle	Buffered transducer “raw” outputs and analog outputs
3	Bottom, front	Output relays: Relay 1 and Relay 2
4	Top, front	Auxiliary input channel
5	Top, middle	Dynamic input channel 2
6	Top, rear	Dynamic input channel 1
Eth1	Bottom, right	System bus
Eth2	Bottom, left	System bus
11	Middle, right	System bus and power
10	Middle, left	System bus and power

Note:

The VSB300 terminal base is supplied with a set of 6x terminal base connectors that are labelled and mechanically key-coded for the VSV30x module / VSB300 terminal base. Sets of additional connectors are available as accessories.

DIP switch

The following figure shows the location of the DIP switch on the VSB300 terminal base. The view is from the front of the terminal base, so the Eth1 Ethernet connector and the 11 sidebus connector are on the right side of the terminal base. The Eth2 Ethernet connector and the 10 sidebus connector are on the left side of the terminal base.



VSB300 terminal base DIP switch

The DIP switch is used to select how the VibroSmart DMS module's SBUS (intra-module) is routed externally for inter-module and extra-module communications: using either the sidebus connectors or the Ethernet connectors on the VibroSmart DMS terminal base.

The Ethernet connectors (Eth1 and Eth2) can be used for communication between a host computer and a VibroSmart DMS module or for communication between VibroSmart DMS modules that are located some distance from each other.

The sidebus connectors (J10 and J11) can be used for communication between adjacent VibroSmart DMS modules to reduce installation complexity and cost. However, the modules must be mounted adjacent to one another in order to use the sidebus.

Accordingly, the selection of the Ethernet connector or the sidebus connector for each side of a VibroSmart DMS module depends on the configuration of the modules used in a particular application.

The DIP switch contains two individual switches and is located in a recess between the Ethernet connectors at the bottom of the VSB300 terminal base (see figure above). The switch on the left

selects the active SBUS connector (Eth2 or 10) on the left side of the VSB300 terminal base, and the switch on the right selects the active SBUS connector (Eth1 or 11) on the right side of the terminal base.

The following table relates the individual switches of the DIP switch to the connectors on the each side of the VSB300 terminal.

Switch	Position	Function	Notes
Left (1)	Down (O)	The SBUS is routed to Eth2 (and 10 is unused)	The switch on the left of the DIP switch (switch 1) affects the connectors on its side of the terminal base: 10 and Eth2. (That is, on the left of the terminal base, looking from the front.)
	Up (ON)	The SBUS is routed to 10 (and Eth2 is unused)	
Right (2)	Down (O)	The SBUS is routed to Eth1 (and 11 is unused)	The switch on the right of the DIP switch (switch 2) affects the connectors on its side of the terminal base: 11 and Eth1. (That is, on the right of the terminal base, looking from the front.)
	Up (ON)	The SBUS is routed to 11 (and Eth1 is unused.)	

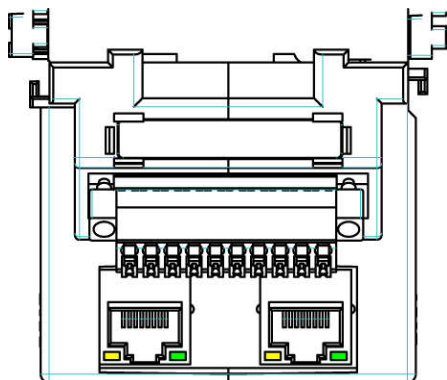
Note:

An Ethernet connection (Eth1 or Eth2) is always required for extra-module communications between a VibroSmart DMS module (or measurement block) and a host computer.

During normal operation, the DIP switch settings are constantly monitored by the VibroSmart DMS module. When the DIP switch settings change, the physical routing of the SBUS (Ethernet) signals via the Ethernet or sidebus connectors changes immediately (that is, there is no requirement to turn the power to the module off and then on).

Communication status

The following figure shows the Eth port LED indicators present on the front of the VSB300 terminal base. The Eth1 port is on the right of the terminal base and the Eth2 port is on the left.



VSB300 terminal base Ethernet LEDs

The following table relates the LED activity for the Ethernet ports on the front of a VSB300 terminal base to the communication status.

LED	LED state	Description
Left (orange)	The left (orange) Ethernet (R 45) LED indicates the speed of the connection	
	Off	No link speed established
	On	Link operating at 100 Mbps
Right (green)	The right (green) Ethernet (R 45) LED indicates the status of the connection	
	Off	No link established
	On	Link established normal operation with no traffic on the link
	Blinking	Link established normal operation with traffic on the link. The blink rate is determined by the amount of network traffic (more activity results in a higher blink rate).

- [VSB300 interface connector pinouts](#)

The VSB300 associated with the VSV30x module provides all of the I/O connections required for interfacing with the module.

Related concepts

[System bus \(SBUS\)](#)

Related reference

[VSB300 interface connector pinouts](#)

[VSV30x front panel](#)

VSB300 interface connector pinouts

The VSB300 associated with the VSV30x module provides all of the I/O connections required for interfacing with the module.

The pinouts for the VSB300 screw-terminal connectors are given below.

Note:

Looking from the front of a VibroSmart terminal base, the 1, 2 and 3 connectors are on the bottom of the terminal base and the 4, 5 and 6 connectors are on the top of the terminal base.

Note that the orientation of the screw-terminal connectors is different for the connectors on the bottom (1 to 3) and on the top (4 to 6) of the terminal base:

- or 1 to 3, pin 1 is located on the left and pin 10 is located on the right, looking from the front of the terminal base.
- or 4 to 6, pin 1 is located on the right and pin 10 is located on the left, looking from the front of the terminal base.

The VSB300 terminal base is supplied with a set of 6x terminal base connectors that are labelled and mechanically key-coded for the VSV30x module / VSB300 terminal base. Sets of additional connectors are available as accessories.

J1 – Module power supply and discrete signal interface (DSI)

Label	Pin	Direction	Description
24V 1	1	I	+24 V _{DC} power supply input (to module)
24V 2	2	I	+24 V _{DC} power supply input (to module)
ND 1	3		round
ND 2	4		round
---	5	---	Not used
TM	6	I	Trip multiply (DSI input)
AB	7	I	Alarm bypass (DSI input)
AR	8	I	Alarm reset (DSI input)
---	9	---	Reserved for future use
RET	10		round (DSI common)

J2 – Buffered transducer “raw” outputs and analog outputs

Label	Pin	Direction	Description
RAW1H	1	O	Buffered version of “raw” transducer input signal on dynamic input channel 1 (single-ended output)
RAW1L	2		round
RAW2H	3	O	Buffered version of “raw” transducer input signal on dynamic input channel 2 (single-ended output)
RAW2L	4		round
RAWXH	5	O	Buffered version of “raw” transducer input signal on the auxiliary input channel (single-ended output)
RAWXL	6		round
ANO1H	7	O	Analog output 1 (4-20 mA or 5 V _{PEAK}) corresponding to a processed output or extracted data
ANO1L	8	R	round (analog output 1 return)
ANO2H	9	O	Analog output 2 (4-20 mA or 5 V _{PEAK}) corresponding to a processed output or extracted data
ANO2L	10	R	round (analog output 2 return)

Note:

The analog outputs (ANO1H/ANO1L and ANO2H/ANO2L) are galvanically separated from the module s electronics (VSV30x/VSB300) with an isolation voltage 250 VAC.

J3 – Output relays

Label	Pin	Direction	Description
RL1NC	1	B	Normally closed (NC) contact of relay 1
RL1 C	2	B	Common (COM) contact of relay 1
RL1NO	3	B	Normally open (NO) contact of relay 1
RL2NC	4	B	Normally closed (NC) contact of relay 2
RL2 C	5	B	Common (COM) contact of relay 2
RL2NO	6	B	Normally open (NO) contact of relay 2
---	7	---	Not used
---	8	---	Not used
---	9	---	Not used
---	10	---	Not used

Note:

By convention, the normally closed (NC) and normally open (NO) relay terminology refers to the state of the relay contacts when the relay s coil is de-energised. This use of the word “normally” is not directly related to the “normal” operation/state of the machinery being monitored, as explained below.

When the power supply to a device is turned off:

- There is a closed circuit between the normally closed (NC) and common (COM) contacts.
- There is an open circuit between the normally open (NO) and common (COM) contacts.

When the power supply to a device is turned on, the state of the relay contacts depends on whether the relay s coil is energised or de-energised.

When the relay s coil is energised:

- There is an open circuit between the normally closed (NC) and common (COM) contacts.
- There is a closed circuit between the normally open (NO) and common (COM) contacts.

Whether a relay s coil is energised or de-energised depends on how the relay has been configured, for example, as normally de-energised (NDE) or normally energised (NE) and as latched or not latched. It also depends on the control input that is used to drive the relay (that is, logical functions).

J4 – Auxiliary input channel

Label	Pin	Direction	Description
X PS	1	O	Auxiliary input channel power supply
X HI	2	I	Auxiliary input channel differential input signal (high)

X LO	3	I	Auxiliary input channel differential input signal (low)
X SH	4	S	Auxiliary input channel shield
---	5	---	Reserved for future use
---	6	---	Reserved for future use
---	7	---	Reserved for future use
---	8	---	Reserved for future use
---	9	---	Reserved for future use
---	10	---	Reserved for future use

J5 – Dynamic input channel 2

Label	Pin	Direction	Description
2 PS	1	O	Dynamic input channel 2 power supply
2 HI	2	I	Dynamic input channel 2 differential input signal (high)
2 LO	3	I	Dynamic input channel 2 differential input signal (low)
2 SH	4	S	Dynamic input channel 2 shield
---	5	---	Reserved for future use
---	6	---	Reserved for future use
---	7	---	Reserved for future use
---	8	---	Reserved for future use
---	9	---	Reserved for future use
---	10	---	Reserved for future use

J6 – Dynamic input channel 1

Label	Pin	Direction	Description
1 PS	1	O	Dynamic input channel 1 power supply
1 HI	2	I	Dynamic input channel 1 differential input signal (high)
1 LO	3	I	Dynamic input channel 1 differential input signal (low)
1 SH	4	S	Dynamic input channel 1 shield
---	5	---	Reserved for future use
---	6	---	Reserved for future use
---	7	---	Reserved for future use

---	8	---	Reserved for future use
---	9	---	Reserved for future use
---	10	---	Reserved for future use

Parent topic: [VSB300 terminal base](#)

Related reference

[VSB300 terminal base](#)

VibroSmart VSV30x module / VSB300 terminal base factory assigned defaults

A VibroSmart VSV30x module / VSB300 terminal base is supplied by Meggitt Sensing Systems with the following factory assigned defaults.

Ethernet ports (IP and DHCP)

By default, for a VibroSmart VSV30x module / VSB300 terminal base, the Ethernet ports are configured as enabled using dynamic addressing (Use DHCP server), and the Static IP settings are not configured (that is, the fields are left empty).

Note:

When dynamic addressing using the dynamic host configuration protocol (DHCP) is used, a DHCP server must be available on the same network as the VibroSight system, in order for VSV30x modules / VSB300 terminal bases to be automatically assigned an IP address.

Note:

Contact your IT department or network administrator for information on whether a DHCP server is available on your network.

It is important to consider these factory assigned default Ethernet port settings when connecting a VSV30x module / VSB300 terminal base to a network for the first time and/or when reconfiguring or replacing a module / terminal base in an application.

When connecting a VibroSmart VSV30x module / VSB300 terminal base to a network, ensure that the individual switches of the DIP switch on the VSB300 terminal base are set to select the required SBUS connector on either side of the terminal base: Eth1 or 11 on the right side of the terminal base and Eth2 or 10 on the left side of the terminal base.

Note:

A DIP switch on the terminal base selects either the sidebus connector (1x) or the Ethernet connector (Ethx) as the active SBUS port for each side of the terminal base.

Only two physical ports can be active at any one time, that is, either 11 or Eth1 (right side) and either 10 or Eth2 (left side).

Using VibroSight System Manager, the Ethernet port settings for a VibroSmart VSV30x module / VSB300 terminal base can be changed as required using the IP settings command. For example, to use static addressing instead of dynamic addressing (that is, to use fixed IP addresses).

Time reference (NTP)

By default, a VibroSmart VSV30x module / VSB300 terminal base uses the local clock on the host computer that is running the VibroSight Server as its time reference. That is, by default, the use of an NTP (network time protocol) server as a time reference is configured as disabled (NTP-free operation).

Note:

A VibroSight / VibroSmart system can be deployed for operation either without an NTP server (NTP-free) or with an NTP server. If an NTP server is being used, contact your IT department or network administrator for information on the NTP server available on your network.

It is important to consider this factory assigned default time reference setting when connecting a VibroSmart VSV30x module / VSB300 terminal base to a network for the first time and/or when reconfiguring or replacing a module / terminal base in an application.

Using VibroSight System Manager, the time reference settings for a VibroSmart VSV30x module / VSB300 terminal base can be changed as required using the NTP settings command.

Firmware

VibroSmart VSV30x modules are supplied with the latest version of firmware. For VibroSight 3.6.0, the recommended firmware version is:

- firmware: 642-001-000-016.

It is strongly recommended to use the most recent version of the VSV30x module firmware that is compatible with the version of VibroSight software being used.

The versions of firmware running on a module can be changed if necessary, for example, so that all modules of the same type in a VibroSmart DMS are running the same version of firmware.

Related concepts

[Dynamic host configuration protocol \(DHCP\)](#)

[Auto IP](#)

[System bus \(SBUS\)](#)

Related tasks

[Configuring IP settings for a VibroSmart DMS module using a DHCP server](#)

[Configuring IP settings for a VibroSmart DMS module using a static IP address](#)

[Configuring the NTP settings of a VM600 card or VibroSmart DMS module](#)

[Checking the firmware](#)

[Changing firmware](#)

[Setting up an Ethernet connection](#)

Related reference

[VM600 XMx16 / XIO16T card pair factory assigned defaults](#)

[VibroSmart VSI010 module / VSB010 terminal base factory assigned defaults](#)

[Network time protocol \(NTP\)](#)

[VibroSight software and VibroSmart VSV30x module firmware compatibility](#)

Connecting a sensor to the auxiliary channel of

a VSV30x

The VSV30x has one auxiliary channel that can be configured to accept signals from tachometers or slowly moving sources, as well as other suitably signal-conditioned quasi-static signals.

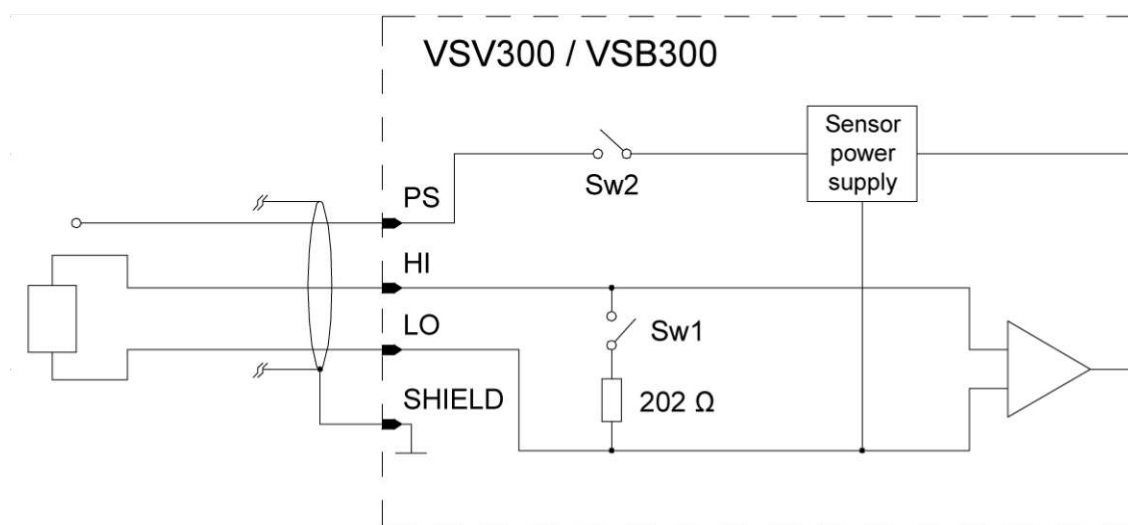
The 4 screw-terminal connector of the VSB300 is used to connect any suitably signal-conditioned signal to the auxiliary input.

There are four terminals on the auxiliary channel input for this purpose:

- HI high (+), which constitutes the input signal along with the LO terminal.
- LO low (), which constitutes the input signal along with the HI terminal.
- SHIELD shield, for connection to the shield of the transmission cable, as required.
- PS power supply, which provides a power supply output for use by a sensor or front-end attached to the channel input, if necessary.

The auxiliary channel input can accept either current-based or voltage-based signals (configured using the VibroSight Configurator software).

The following figure shows a connection diagram for the auxiliary channel input:



Auxiliary channel input connection diagram

The switch (Sw1) across the differential input signal is either open for voltage signals or closed for current signals (configured using the VibroSight Configurator software).

The switch (Sw2) for the sensor power supply output is either open when the supply is disabled or closed when the supply is enabled with a current or voltage output (configured using the VibroSight Configurator software).

or the signal-processed outputs provided by the VSV300 module's auxiliary channel configured as a tachometer input, the amplitude of the processed signals depends on the input signal from the external measurement chain circuitry and the configured signal transmission mode (current or voltage).

or the signal-processed outputs provided by the VSV300 module's auxiliary channel configured as

a DC input, the amplitude of the processed signals depends on the input signal from the external measurement chain circuitry, the configured signal transmission mode (current or voltage) and the configured sensitivity.

The buffered output provided by the VSV300 module's auxiliary channel is only available when the channel is configured as a tachometer input. This buffered output is a processed tachometer signal (0 to 5 V TTL-compatible) and is only generated when the tachometer is connected directly (locally) to the module.

Note:

When the VSV300 module's auxiliary channel is configured as a DC input, there is no buffered output.

Related reference

[Connecting a sensor to a dynamic channel of a VSV30x](#)
[VSB300 interface connector pinouts](#)

Connecting a sensor to a dynamic channel of a VSV30x

The VSV30x has two dynamic channels that can be configured to accept signals from vibration sensors and dynamic pressure sensors, as well as other suitably signal-conditioned dynamic signals.

The 6 screw-terminal connector of the VSB300 is used to connect any suitably signal-conditioned signal to the dynamic channel 1 input.

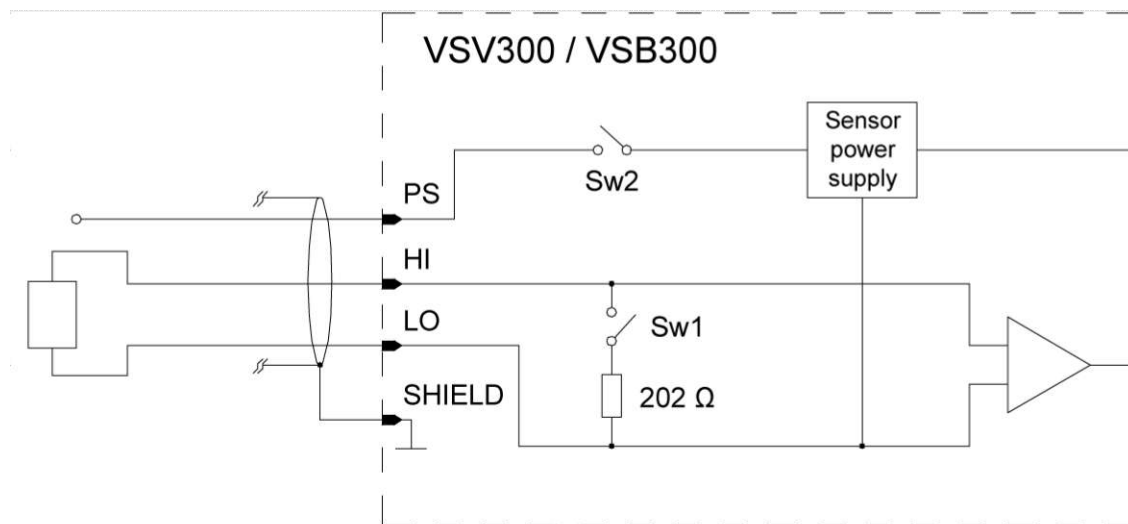
The 5 screw-terminal connector of the VSB300 is used to connect any suitably signal-conditioned signal to the dynamic channel 2 input.

There are four terminals on a dynamic channel input for this purpose:

- HI high (+), which constitutes the input signal along with the LO terminal
- LO low (), which constitutes the input signal along with the HI terminal
- SHIELD shield, for connection to the shield of the transmission cable, as required
- PS power supply, which provides a power supply output for use by a sensor or front-end attached to the channel input, if necessary.

The dynamic channel input can accept either current-based or voltage-based signals (configured using the VibroSight Configurator software).

The following figure shows a connection diagram for the dynamic channel inputs:



Dynamic channel input connection diagram

The switch (Sw1) across the differential input signal is either open for voltage signals or closed for current signals (configured using the VibroSight Configurator software).

The switch (Sw2) for the sensor power supply output is either open when the supply is disabled or closed when the supply is enabled with a current or voltage output (configured using the VibroSight Configurator software).

or the signal-processed outputs provided by the VSV300 module's dynamic channels, the amplitude of the processed signals depends on the input signal from the external measurement chain circuitry, the configured signal transmission mode (current or voltage) and the configured sensitivity.

or the buffered outputs provided by the VSV300 module's dynamic channels, the amplitude of the buffered outputs depends on the input signal from the external measurement chain circuitry, the configured signal transmission mode (current or voltage) and the transfer ratio (current or voltage).

Related reference

[Connecting a sensor to the auxiliary channel of a VSV30x VSB300 interface connector pinouts](#)

Firmware used by VibroSmart DMS devices

The firmware that runs on the VibroSmart DMS devices includes open source software. To acknowledge the work of others, the relevant open source software licences are included here.

Copies of the open source software can be obtained by contacting Meggitt Sensing Systems customer support.

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Related tasks

[Contacting Meggitt Sensing Systems customer support](#)

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Version 3, 29 June 2007

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of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the PL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the PL, as needed to protect the freedom of users.

inally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the PL assures that patents cannot be used to render the program non-free.

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For customer support, please contact your local Meggitt Sensing Systems representative.

Alternatively, contact our main office:

Address: Customer support department, Meggitt SA, Route de Moncor 4, PO Box 1616, 1701 Fribourg, Switzerland

Telephone: +41 (0) 26 407 11 11

Email: energysupport@ch.meggitt.com

Web: www.meggittsensing.com/energy

Related information

[Meggitt Vibro-Meter website \(external website\)](#)

General VibroSight monitoring system troubleshooting

If you encounter any problems during the installation and operation of your VibroSight monitoring system, Meggitt Sensing Systems recommends the following troubleshooting procedure.

Note: Before restarting a device or replacing the device with a spare (hot-swapping), it is recommended to use the  Save Diagnostic Logs command in VibroSight System Manager and save a copy of the device's diagnostic information to the host computer, as this information may be required by Meggitt Sensing Systems customer support.

1. Check the VibroSight Server for errors.

VibroSight Server shows a window that displays system messages (Information  , Warning  and Critical ). The level of information (that is, the quantity) of the messages displayed depends on the Technical Log Files settings. (VibroSight Server's Tools > Options command is used to access these settings.)

2. Check the LEDs on the front panel of the device:

- a. **VM600 Card** For systems using VM600 XMx16 cards, check that the STATUS and DATA LEDs on the front panel of the cards are both green.

Green STATUS and DATA LEDs indicate that one or more servers are connected to the VM600 XMx16 card and the card is acquiring data, and therefore, that the card has a valid configuration.

- b. **VibroSmart DMS** For systems using VibroSmart DMS modules, check that the

Status and individual channel OK LEDs on the front panel of the modules (such as VSV30x) are green.

Green Status and channel OK LEDs indicate normal operation, that is, the VibroSmart DMS module has a valid configuration that is operating normally and the input signal is valid.

Further information on VM600 XMx16 card and VibroSmart DMS module LEDs can be found in the relevant front panel topics.

3. Check the signal chain from the sensors to the VM600 XMx16 cards or VibroSmart DMS modules in your VibroSight system – cabling, connections and so on – to ensure there is an input signal to your system.
4. Check the data quality indicator for the currently active plot or plots in VibroSight Vision.
Note:

Every VibroSight Vision plot includes a summary bar at the top of the document window, which includes a  data quality indicator (right) when bad quality data is included in the plot.

Click the data quality indicator to display the error flags (status bits) corresponding to the bad quality data.

5. Check the configuration used to ensure it is correct (valid).

VibroSight Configurator's Consistency Check window can be used to identify many configuration errors.

6. Check the waveforms for each signal to ensure they are as expected.

VibroSight Vision can be used to rapidly generate these plots.

7. If problems persist, contact Meggitt Sensing Systems customer support.
When investigating certain issues, Meggitt Sensing Systems customer support may require the following information for a VibroSight monitoring system:
 - VibroSight software diagnostic information.
 - VM600 card or VibroSmart DMS device diagnostic logs.

Related concepts

[VibroSight software diagnostic information](#)

[VM600 card and VibroSmart DMS device diagnostic logs](#)

Related tasks

[Contacting Meggitt Sensing Systems customer support](#)

Related reference

[XMC16 front panel](#)

[XMV16 front panel](#)

[VSI010 front panel](#)

[VSV30x front panel](#)

[VSN010 front panel](#)

[CPUR front panel](#)

Overall VibroSight monitoring system

performance issues

When a VibroSight monitoring system demonstrates overall performance issues – especially with data handling and data logging – that cannot be attributed to a particular cause, the VibroSight Server user interface can be used to check important server performance metrics.

Note:

For more demanding machinery monitoring applications, such as large-scale vibration projects and combustion projects, a computer configuration with a more powerful processor, more system memory and a larger disk drive is recommended, in order to improve the overall performance of the VibroSight monitoring system.

If the processor, memory and disk space for a VibroSight Server is not adequate, this will have a direct effect on the overall performance of the VibroSight monitoring system. And while the exact behaviour is difficult to predict, it is often characterised by:

- General computer performance issues
- Computer system resource conflicts
- Reduced data update rates
- Problems displaying live data in VibroSight Vision
- Incomplete data logging to the VibroSight Server data repository.

The server performance metrics displayed by VibroSight Server can be used to help identify any system bottlenecks that are affecting overall monitoring system performance.

VibroSmart DMS module not displaying correctly in VibroSight System Manager

When a VibroSmart DMS module is not displayed correctly in VibroSight System Manager, this can be because the module is not clipped into its terminal base correctly.

When a VibroSmart DMS module is not clipped into its terminal base correctly, it is possible that the module can receive its power supply from the terminal base but can not receive its configuration (which is stored in non-volatile memory in the terminal base).

As the VibroSmart DMS module can receive power, it appears to be operating normally because of the LEDs on the front panel. However, as the module cannot receive its configuration, it cannot operate correctly. In general, this is characterised by:

- VibroSight System Manager listing the device with an incomplete serial number and IP address, for example, with either the serial number missing (for example, --- (xxx.xxx.xxx.xxx)) or the IP address missing (for example, xxxxxxxxx (---)).
- The Diag (Status) LED on the front panel of the module blinking red to indicate that the module is not configured (even when there is a known valid configuration).

If this problem is seen, the VibroSmart DMS module should be removed from and then re-inserted into its terminal base.

When a VibroSmart DMS module is clipped into a terminal base, it is necessary to:

- Slowly push the module into the terminal base allowing the guides and rails on both devices to ensure the correct alignment.

When the connectors and locking mechanism meet, resistance will be felt and the module will stop moving.

- Push the module into the terminal base using the force necessary to overcome the mechanical locking mechanism and the friction of the connectors.

Note:

There should be an audible click when the two devices are assembly correctly.

Related tasks

[Viewing all network-enabled devices](#)

Related reference

[VSI010 front panel](#)

[VSV30x front panel](#)

VibroSmart DMS module indicating a failure on safety function

When a VibroSmart DMS module indicates a failure on safety function, user intervention is required.

When a VibroSmart DMS module is operating and a failure on safety function occurs, the operating mode of the module will switch from Operational to Fail-safe. This is indicated by:

- VibroSight System Manager displaying the operating mode of the device as Fail-safe.
- The Safety (Status) LED on the front panel of the module blinking red.

Note:

When there is a failure on safety function, the VibroSmart DMS module stops performing its machinery monitoring functions (that is, the monitoring status is not running).

The Fail-safe operating mode is a non-recoverable operating mode that requires user intervention.

If a failure on safety function is seen, the VibroSmart DMS module must be restarted, either by the switching the power supply to the module off and then on, or by removing the module from its terminal base and then re-inserting the module.

After the VibroSmart DMS module restarts, it should be checked to ensure that it is operating normally.

Related tasks

[Viewing VibroSmart DMS device information](#)

Related reference

[VibroSmart DMS device operating modes](#)

[VSI010 front panel](#)

[VSV30x front panel](#)

Abbreviations

The table below defines the abbreviations used by the VibroSight software and VibroSight-compatible hardware.

Abbreviation	Definition
2D	Two-dimensional
3D	Three-dimensional
AC	Alternating Current
ADC	Analog to Digital Converter
AE	Alarms and Events (OPC specification)
AE xxx	Housing expansion probe, from Meggitt Sensing Systems' Vibro-Meter product line
AGM	Air Gap Monitoring
AMC8	Analog Monitoring Card with 8 channels, from Meggitt Sensing Systems' Vibro-Meter product line
Amp	Ampere
ANSI	American National Standards Institute
APHT	Amplitude and Phase against Time
API	Application Programming Interface
API	American Petroleum Institute
APIA	Automatic private IP addressing
ARP	Address resolution protocol
AS	Shaft absolute (absolute shaft)
ASCII	American Standard Code for Information Interchange
ATA	Advanced Technology Attachment. (ATA is now called Parallel ATA (PATA) to distinguish it from Serial ATA.)
ATEX	EU directives for equipment intended for use in potentially explosive atmospheres. (From the French 'Appareils destinés à être utilisés en ATmosphères EXplosibles'.)
AVG	Average
BMP	Bitmap. File name extension for BMP files.
BNC	Connector used for terminating coaxial cables
BOM	Bill Of Materials
BOP	Balance of Plant
BPF	Band-pass filter

BTP	Basic Test Procedure
BW	Bandwidth
CA xxx	Piezoelectric accelerometer (with external charge amplifier), from Meggitt Sensing Systems' Vibro-Meter product line
CCW	Counter-clockwise (anti-clockwise)
CD	Compact Disc
CDB	Change Database
CD-ROM	Compact Disc - Read Only Memory
CE mark	Mandatory mark for many products sold on the EU (Communauté Européen) and EFTA markets
CE xxx	Piezoelectric accelerometer (with external charge amplifier), from Meggitt Sensing Systems' Vibro-Meter product line
CHF	Swiss Franc
CMC16	Condition Monitoring Card with 16 channels, from Meggitt Sensing Systems' Vibro-Meter product line
CMRR	Common Mode Rejection Rate
CMS	Condition Monitoring System
CMV	Common Mode Voltage
COM	Common (relay contact)
COM	Component Object Model (an interface standard for software components, from Microsoft®)
COTS	Commercial Off-the-Shelf
CP xxx	Pressure transducer, from Meggitt Sensing Systems' Vibro-Meter product line
cpm	Cycles Per Minute (frequency)
CPU	Central Processing Unit
CPUM	Modular CPU card, from Meggitt Sensing Systems' Vibro-Meter product line
CPUR	Central processing unit card, from Meggitt Sensing Systems' Vibro-Meter product line
CRC	Cyclic Redundancy Check
CS	Customer Support
CSA	Canadian Standards Association
CSV	Comma-separated values.
	File name extension for CSV files.
CU	Collection Unit
CV xxx	Velocity transducer, from Meggitt Sensing Systems' Vibro-Meter product line

CW	Clockwise
DA	Data Access (OPC specification)
DAT	Digital Audio Tape
DAN	Doubly attached node
DANH	Doubly attached node implementing the HSR protocol
dB	Decibel(s)
DB	Database
DBMS	Database Management System
DC	Direct Current
DCOM	Distributed Component Object Model (a technology for communication among software components distributed across networked computers, from Microsoft®)
DCS	Distributed Control System
DDE	Dynamic Data Exchange
DHCP	Dynamic Host Configuration Protocol
DMS	(VibroSmart ®) Distributed Monitoring System
Doc	Document
DoC	DiskOnChip
DRB	Diagnostics Rule Box
DSI	Discrete signal interface
DSN	Data Source Name
DSO	Discrete signal output
DSP	Digital Signal Processor
DSS	Design Specification System
EFTA	European Free Trade Association
EMC	Electromagnetic Compatibility
EPROM	Erasable Programmable Read Only Memory
ERP	Enterprise Resource Planning
ESD	Electrostatic Discharge
EU	Engineering Units
FFT	Fast Fourier Transform
FSD	Full Scale Deflection
FTP	File Transfer Protocol
FW	Firmware
g	grav (Unit of Acceleration)

GB	Gigabyte(s)
Gbps	Gigabits per second
GBps	Gigabytes per second
GHz	Gigahertz
GIF	Graphic interchange format.
	File name extension for GIF files.
GSI xxx	Galvanic separation unit, from Meggitt Sensing Systems' Vibro-Meter product line
GSD	General station description. (From the German 'Gerätetammdaten'.)
GUI	Graphical User Interface
HALT	Highly Accelerated Life Test
HDA	Historical Data Access (OPC specification)
HDA	Historical Data Archive (VibroSight file format)
HMI	Human Machine Interface
HP	High Pressure (Turbine)
HPF	High-pass filter
HSR	High-availability seamless redundancy
HW	Hardware
Hz	Hertz
IC	Integrated Circuit
ICMP	Internet Control Message Protocol
ID	Identifier
IDE	Integrated Development Environment
IEC	International Electrotechnical Commission
IECEx	Global certification scheme for electrical equipment for use in explosive atmospheres, based on IEC standards
IEEE	Institute of Electrical and Electronics Engineers
ILS xxx	Air gap conditioner, from Meggitt Sensing Systems' Vibro-Meter product line
I/O	Input/Output
IOC	Input / Output Card
IOC16T	Input/Output Card, with terminals, for use with the CMC16, from Meggitt Sensing Systems' Vibro-Meter product line
IOC4T	Input/Output Card, with terminals, for use with the MPC4, from Meggitt Sensing Systems' Vibro-Meter product line
IOC8T	Input/Output Card, with terminals, for use with the AMC8,

	from Meggitt Sensing Systems' Vibro-Meter product line
IOCN	Input/Output (communications) Card, with connectors, for use with the CPUM, from Meggitt Sensing Systems' Vibro-Meter product line
IOCR	Input/Output (communications) Card, with connectors, for use with the CPUR, from Meggitt Sensing Systems' Vibro-Meter product line
IP	Internet Protocol
IPC	Institute for Printed Circuits
IPC xxx	Signal conditioner, from Meggitt Sensing Systems' Vibro-Meter product line
IQS xxx	Signal conditioner, from Meggitt Sensing Systems' Vibro-Meter product line
IRC4	Intelligent Relay Card with 4/8 relays and microcontroller, from Meggitt Sensing Systems' Vibro-Meter product line
ISBN	International Standard Book Number
ISO	International Standards Organization
IT	Information Technology
JPEG	Joint photographic experts group
JPG	File name extension for JPEG files
JTAG	Joint Test Action Group (usual name for the IEEE 1149.1 standard)
kB	Kilobyte(s)
kbps	Kilobits per second
kBps	Kilobytes per second
KB	Kilobyte(s)
kHz	Kilohertz (10^3 hertz)
kV	Kilovolt (10^3 volts)
kW	Kilowatts (10^3 watts)
LAN	Local Area Network
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LP	Low Pressure (Turbine)
LPF	Low-pass filter
LS xxx	Air gap transducer, from Meggitt Sensing Systems' Vibro-Meter product line
mA	Milliamp (10^{-3} amperes)

MAC	Media Access Control
max.	Maximum
MB	Megabyte(s)
Mbps	Megabits per second
MBps	Megabytes per second
MFM	Magnetic Flux Monitoring
MHz	Megahertz
min.	Minimum
mins	Minutes
Modbus	Modbus is a communications protocol for connecting to and exchanging data with industrial electronic devices over serial or Ethernet networks
MPC1	Machinery Pulsation Card with 1channel, from Meggitt Sensing Systems' Vibro-Meter product line
MPC4	Machinery Protection Card with 4 channels, from Meggitt Sensing Systems' Vibro-Meter product line
MPS	Machinery Protection System
MRF	Multirate Filter
MSS	Meggitt Sensing Systems
MTBF	Mean Time Between Failures
MTS	Minimum Tracked Speed
N/A	Not applicable
NC	Normally closed (relay contact)
NE	Normally energised (relay coil)
NDE	Normally de-energised (relay coil)
NIC	Network interface card (also known as a network adapter)
NO	Normally open (relay contact)
NPI	New Product Introduction
NTP	Network time protocol
nX	nth harmonic, where n is an integer. For example, 1X is the first harmonic.
OC	Open Collector
ODBC	Open Database Connectivity
OEM	Original Equipment Manufacturer
OLE	Object Linking and Embedding
OPC	Open Connectivity (formerly known as Open Platform Communications, and before that as Openness, Productivity

and Collaboration, and before that as OLE for Process Control) is a set of specifications that provides a common interface for communications between different products from different vendors

ORF	Output Resampling Filter
OS	Operating System
OVR	Overall
P/N	Part Number
Pa	Pascal (SI Unit of Pressure)
PATA	Parallel ATA (also known as IDE, ATAPI)
PC	Personal Computer
PCB	Printed Circuit Board
PCI	Peripheral Component Interconnect
PCIe	PCI Express
pF	Pico Farad (10^{-12} farad)
PLC	Programmable Logic Controller
PM	Proposition de Modification (change notice)
PMP	Process Management Plan
PNG	Portable network graphics. File name extension for PNG files.
PNR	Part Number
ppm	Parts Per Million
PSD	Product Specification Document
psi	Pounds per Square Inch
PTP	Precision time protocol
PWD	Password
RAID	Redundant Array of Independent/Inexpensive Disks
RAM	Random Access Memory
RDBMS	Relational Database Management System
Reqtify	Meggitt's standards requirements traceability tool
RLC16	Relay Card with 16 relays, from Meggitt Sensing Systems' Vibro-Meter product line
RMS	Root Mean Square
RoHS	Restriction of Hazardous Substances (EU directive effective since 01.06.2006)
ROM	Read Only Memory

RPC	Remote Procedure Call
RPM	Revolutions (rotations) Per Minute
RPS6U	Rack Power Supply
RS	Shaft relative (relative shaft)
RS-232	Standard for serial point-to-point binary data interconnections
RS-422	High-speed system similar to RS-232 but with differential signalling
RS-485	A descendant of RS-422 that can be used as a bus in multidrop configurations
RSTP	Rapid STP
RTC	Real-time Clock
RTF	Rich text format.
	File name extension for RTF files.
RTU	Remote Terminal Unit
SAN	Singly attached node
SAP	Meggitt's ERP software
SATA	Serial ATA
SBUS	System Bus
SCM	Software Configuration Management
SER	Serial Number (xxxxxxx for a VM600 card or xxxxxxxxxx for a VibroSmart DMS device)
SE xxx	Piezoresistive accelerometer, from Meggitt Sensing Systems' Vibro-Meter product line
SIL	Safety Integrity Level
SKF	Supplier in the business of rolling bearings and seals
SQL	Structured Query Language
SMS	Short Message Service
SMTP	Simple Mail Transfer Protocol
SPDT	Single-pole double-throw
SP xxx	Speed probe, from Meggitt Sensing Systems' Vibro-Meter product line
STP	Spanning tree protocol
SVGA	Super Video Graphics Array
SW	Software
TBC	To Be Confirmed
TBD	To Be Defined

TCP/IP	Transmission Control Protocol/Internet Protocol
TCS	Turbine Control System
TDC	Top Dead Centre
TDMS	Technical Data Management Streaming
TOC	Table Of Contents
TQ xxx	Proximity transducer, from Meggitt Sensing Systems' Vibro-Meter product line
T _s	Sampling duration
TTL	Transistor-Transistor Logic ('low' 0.0 to 0.8 V and 'high' 2.0 to 5.0 V)
UDP	User Datagram Protocol
UID	User ID
UL mark	USA equivalent to the CE mark issued by the Underwriters Laboratories
UML	Unified Modeling Language
URL	Uniform Resource Locator
UTC	Coordinated universal time
V	Volts
V _{AC}	Voltage, Alternating Current
V _{DC}	Voltage, Direct Current
VM	Vibro-Meter SA. (Vibro-Meter SA is now Meggitt SA and Vibro-Meter is a product line of Meggitt Sensing Systems.)
VM600	Vibro-Meter Series of products (Machinery Protection Systems and Condition and Performance Monitoring Systems), from Meggitt Sensing Systems' Vibro-Meter product line
VME	Versa Module Eurocard
V _{pp} or V _{PEAK-PEAK}	Voltage peak-to-peak
VSA301	Buffered output amplifier for use with a VibroSmart VSV30x module, from Meggitt Sensing Systems' Vibro-Meter product line
VS010	Terminal base for use with a VibroSmart VSI010 module, from Meggitt Sensing Systems' Vibro-Meter product line
VS030	Terminal base for use with a VibroSmart VSV30x module, from Meggitt Sensing Systems' Vibro-Meter product line
VSI010	Communications interface module (data communications bridge) for use in a VibroSmart DMS, from Meggitt Sensing Systems' Vibro-Meter product line
VSN010	Real-time Ethernet network switch for use in a VibroSmart

	DMS, from Meggitt Sensing Systems' Vibro-Meter product line
VSV30x	Vibration monitoring module for use in a VibroSmart DMS, from Meggitt Sensing Systems' Vibro-Meter product line
WAN	Wide Area Network
WFD	Water Flow Direction
XIO16T	Extended Input/Output Card, with terminals, for use with the XMC16 or XMV16, from Meggitt Sensing Systems' Vibro-Meter product line. (The XIO16T is the successor to the IOC16T.)
XLSX	Microsoft Excel file format. File name extension for Excel files.
XMC16	Extended Monitoring Card for Combustion with 16 channels, from Meggitt Sensing Systems' Vibro-Meter product line. (The XMC16 is a successor to the CMC16.)
XMV16	Extended Monitoring Card for Vibration with 16 channels, from Meggitt Sensing Systems' Vibro-Meter product line. (The XMV16 is a successor to the CMC16.)
XMVS16	Extended Monitoring Card for Vibration with 16 channels, from Meggitt Sensing Systems' Vibro-Meter product line. (The XMVS16 is based on the XMV16 but does not include access to the VM600 Raw Bus.)
XMx16	Generic term used to refer to all of the extended monitoring cards from Meggitt Sensing Systems' Vibro-Meter product line: XMC16, XMV16 and XMVS16

Glossary of terms

This topic lists technical terms used by the VibroSight software and VibroSight-compatible hardware.

Term	Definition
1/REV pulse	A once-per-revolution voltage pulse produced by a timing reference mark (hole, keyway or slot) on the shaft itself or a dedicated wheel, that is typically detected by a proximity probe. The 1/REV pulse provides a reference for measuring the shaft rotation speed and the vibration <i>phase lag angle</i> . See also <i>speed reference</i> .
2D	Two-dimensional.
3D	Three-dimensional.
Absolute motion	The vibration of an object measured relative to an inertial (fixed) reference frame vibration with respect to a fixed point in space. Accelerometers and velocity transducers measure absolute vibration, typically of machine housings or structures, and thus are both referred to as seismic transducers.

Absolute phase	Measured from one once-per-revolution event to the next positive peak of the vibration signal (that is, the shortest distance between the shaft and the probe). The result is expressed in degrees phase lag. For absolute phase measurements, the signal must be a filtered multiple of the running speed. See also <i>relative phase</i> .
AC	Generally used in the VibroSight software to refer to the alternating current component of a signal (> 0.1 Hz). See also DC.
Acceleration	The rate of change of velocity. For harmonic motion, this is often expressed as g, A, X, or d squared/dt squared. Acceleration leads velocity by 90 degrees in time and leads displacement by 180 degrees in time. Typical units for acceleration are feet per second per second (ft/sec. squared), metres per second per second (m/s squared), or more commonly g's (where g = acceleration due to gravity - 32.17 ft/sec. squared = 9.81m/s squared). Acceleration measurements are generally made with piezoelectric <i>accelerometers</i> and are typically used to evaluate high frequency machine casing or bearing housing response characteristics.
Accelerometer	A seismic transducer which converts acceleration motion and/or gravitational forces capable of imparting acceleration into a proportional electric signal.
Acceptance region	Trend information of the 1X (or 2X) vibration vectors (amplitude and phase) presented in polar format. The user defines the normal acceptance region for each shaft radial vibration measurement on the machine, based on historical data for the machine under all normal operating conditions. Acceptance region information can be an important indicator of a shaft crack.
Acquisition mode	See <i>data acquisition mode</i> .
Alarm	A visual or audible message sent to an operator's console (the Event Viewer or Mimic, for example) when values from a measurement point reach a predefined worrying level. This is a higher-level warning than an <i>alert</i> .
Alert	A visual or audible message sent to an operator's console (the Event Viewer or Mimic, for example) when values from a measurement point show the first signs of abnormal behaviour. This is a lower-level warning than an <i>alarm</i> .
Aliasing	An electronic phenomenon caused by sampling a vibration signal at a frequency lower than twice the highest frequency component in that signal. The result of sampling in this manner and displaying the data in frequency spectrum format is that high frequencies can appear as lower frequencies in the presentation. This effect can be eliminated by using a <i>low-pass filter</i> on the signal prior to sampling this technique is called <i>anti-aliasing</i> . Ideally, the corner frequency of the anti-aliasing filter should be selected at a value no higher than one half of the sample frequency. This will insure that all of the frequency components displayed are true. The primary disadvantage of anti-aliasing (as is the case with virtually any type of filtering) is that phase error is incurred. Phase angle values calculated from frequency spectrum data (which has had anti-aliasing) will be significantly inaccurate. Vibration phase angle is most accurately measured by using a narrow bandpass tracking filter on the direct (unfiltered) signal

	or by automatically compensating for the constant error introduced by the anti-aliasing filters.
AMC8	Analog Monitoring Card with 8 channels, from Meggitt Sensing Systems' Vibro-Meter product line.
Amplitude	The magnitude of periodic dynamic motion (vibration). Amplitude is usually expressed in terms of either signal level, for example, millivolts or milliamperes, or the engineering units of the measured variable, for example mils, micrometers, or inches per second. The amplitude of a signal can be measured in terms of a <i>peak-to-peak</i> value, but can also be expressed as zero-to-peak, root mean square (RMS), or average.
Analog signal	An input signal consisting of a DC level giving a single value at any one time. Also known as a <i>process signal</i> .
Analog-to-Digital Converter (ADC)	A device, or subsystem, that changes real-world analog data (as from transducers, for example) to a form compatible with digital (binary) processing.
Anti-aliasing filter	A <i>low-pass filter</i> which performs an anti-aliasing function for a vibration signal. See <i>aliasing</i> .
APHT plot	A pair of graphs in Cartesian format displaying the 1X vibration vector (phase lag angle and amplitude) as a function of time. Also used for 2X, 3X, etc. vibration vectors. See also Bode plot.
Asynchronous	Vibration components that are not related to rotating speed (also referred to as <i>non-synchronous</i>).
Attenuation	See <i>signal attenuation</i> .
Auto Hide	A window type in VibroSight Vision's graphical user interface. The active window automatically hides after a short period of inactivity. Placing the mouse cursor over the reduced window near the main window's border redisplay the window.
Auxiliary measurement mode	The auxiliary measurement mode is used to obtain measurements, such as waveforms and spectra, with more detail (higher resolution) but at slower update rates. The auxiliary measurement mode is disabled by default and is typically used in conjunction with the principal measurement mode. See <i>Measurement modes</i>.
Average shaft centreline plot	A <i>transient data</i> or <i>trend plot</i> of the average shaft centreline position, presented in rectangular (Cartesian) format. See also <i>orbit plot</i> .
Balance of plant	All of the components and systems in a power plant, energy system or operation, excluding the main (larger) machines such as compressors, turbines and generators. Typically, this includes motors, pumps and so on.
Band	A vector measurement consisting of the amplitude and phase values for either a single frequency (defined as either an absolute frequency in hertz, which never changes, or a vibration frequency in multiples of the machine speed, which changes with the speed), or for a range of frequencies. Also referred to as a frequency band, spectral band or

	frequency component.
Band-pass filter	A filter that only passes vibration signals between two frequencies, called the lower and upper cutoff frequencies. See also <i>cutoff frequency</i> .
Bandwidth	The difference in frequency between the upper and lower <i>cutoff frequency</i> of a <i>band-pass filter</i> or other device.
Bar chart	Also known as a bar graph. A chart with rectangular bars of lengths usually proportional to the magnitudes or frequencies of what they represent. Bar charts are used for comparing two or more values. The bars can be horizontally or vertically oriented.
Barred gear	The mechanism provided for the rotation of the turbine generator shaft at a very low speed to avoid deflection or bending of the turbine shaft.
Baseline data	A set of reference data acquired when a machine is running in acceptable conditions, usually immediately after installation, overhaul, or turnaround. See also <i>slow roll</i> .
Baseline spectrum	A vibration spectrum taken when a machine is in a good operating condition. Used as a reference for monitoring and analysis purposes.
Bode plot	A pair of graphs in Cartesian format displaying the 1X vibration vector (phase lag angle and amplitude) as a function of shaft rotative speed. Also used for 2X, 3X, etc. vibration vectors. See also APHT plot.
Bow	A shaft condition such that the geometric shaft centreline is not straight. Usually, the centreline is bent in a single direction due typically to gravity sag or thermal warpage.
Buffer	A memory location in a computer or digital instrument used to temporarily store digital information while it is waiting to be processed.
Cartesian format	A graphical format consisting of two orthogonal axes. Typically, Y is the vertical axis and X is the horizontal axis. This format is used to plot the results of one variable as a function of another, for example, vibration amplitude versus time (Trend), amplitude versus frequency (Spectrum) and 1X amplitude versus shaft rotation speed (Bode).
Cascade plot	A series of plots taken at set speed intervals over a range of <i>machine operating modes</i> , for example, run-up or coast-down. See also <i>waterfall plot</i> .
Channel	The hardware path that measurement data takes from a transducer through the VM600 rack to the condition monitoring software. Each channel can contain different signal types: see <i>dynamic signal</i> , <i>analog signal</i> , <i>digital signal</i> , <i>speed signal</i> .
Chart	A generic term indicating any drawing, graph, image, text, or combination of these elements.
CMC16	Condition Monitoring Card with 16 channels, from Meggitt Sensing Systems' Vibro-Meter product line.
Coast-down	A <i>machine operating mode</i> . The machine is being stopped. Its rotational speed decreases from the nominal speed to zero or turning gear speed.

Combustion monitoring	Monitoring, using special sensors, of an internal combustion engine to distinguish abnormal combustion conditions.
Compensation	See <i>runout compensation</i> .
Condition monitoring	Determining the condition of a machine by interpreting relevant measurements taken either periodically or continuously.
Condition Monitoring System (CMS)	System for monitoring the health of machinery assets, from Meggitt Sensing Systems' Vibro-Meter product line. Comprises sensors to continuously monitor the machinery's condition (vibration, pressure, speed, heat etc.), VM600 signal processing cards, and software to process the collected data.
Continuous spectrum	The type of spectrum produced from non-periodic data. The spectrum is continuous in the frequency domain.
Coordinated universal time	Coordinated universal time (UTC) is the primary time standard used to regulate clocks and time throughout the world, including computers (that is, their date and time).
CPUM	Central Processing Unit Module for the VM600 rack, from Meggitt Sensing Systems' Vibro-Meter product line. Used for communications between CMC16 condition monitoring cards and CMS software.
CPUM Configurator	The CPUM Configurator, from Meggitt Sensing Systems' Vibro-Meter product line, is a software tool that communicates with a CPUM card in a VM600 rack over an Ethernet link. Basically, it provides a graphical user interface for a Telnet session between a CPUM Configurator (Telnet client) and a CPUM card (Telnet server), and is used primarily for configuring CPUM cards.
Cutoff frequency	A predetermined frequency at which a filter's vibration begins to drop off, or attenuate. A <i>low-pass filter</i> measures only frequencies below the cutoff frequency, whereas a <i>high-pass filter</i> measures only frequencies above the cutoff frequency. A <i>band-pass filter</i> measures frequencies between the lower and upper cutoff frequencies.
Cycle	One complete sequence of values of a periodic quantity.
Data acquisition mode	The data sampling mode used to acquire time-based data for an individual channel: • Background. Continuous acquisition with logging at predefined time intervals. • Transient. Activated on detection of a specified transient machine condition (run-up, run-down, operational transient). Fixed-frequency or order-tracked acquisition. • Alternative. Alternative mode for fixed-frequency acquisitions. • Manual. Real-time acquisitions initiated by the user.
Data acquisition mode	The data sampling mode used to acquire time-based data for an individual channel.
Data Acquisition Unit (DAU)	A generic terms used to describe the range of intelligent units manufactured by Meggitt Sensing Systems which are located at the

	front-end near to the data source and which acquire, monitor and analyse the data before transferring it to the host computer.
Data block	A sequence of continuous data samples, used to calculate the FFT in a single processing cycle.
Data element	A unit of data for which the definition, identification, representation and permissible values are specified by metadata.
Data entity	A set of data items. It describes the common attributes of the data items belonging to the data entity. 1X data is an example of a data entity. Its characteristic attributes are the measurement point, the data acquisition parameters and the band extraction parameters. Other examples of data entities include waveform, spectrum, <i>nX</i>-data, OVR data. Deprecated. Use <i>measurement</i>.
Data group	See <i>Live data group</i> .
Data item	A single elementary item of data, such as a single extracted value or a single curve (waveform, spectrum, orbit, and so on). Every data item has a name, a value, and associated metadata, for example the name of the machine that collected the data, or the time that the data item was measured. Each data item is an occurrence of a <i>data element</i> .
Data segment	A subdivision of data samples in a <i>data block</i> .
Data source	The origin of measurement data typically a machine for live data, or a file or database for historical data.
DC	Generally used in the VibroSight software to refer to the direct current component of a signal (0.1 Hz). See also AC.
DC (Gap)	The direct current (DC) output signal of a proximity probe, indicating the physical gap distance measured.
Deadband	See <i>hysteresis</i> .
Differentiation	A mathematical operation that converts a displacement signal to a velocity signal, or a velocity signal to an acceleration signal. This allows rates of change of signals to be identified. Differentiation is the inverse of <i>integration</i> .
Digital signal	An input signal type that has only two possible states: on (represented by a 1) or off (represented by a 0). Used to monitor on/off switches or open/close relays, for example. See also <i>channel</i> .
Direct connection	Refers to a connection that has been established directly between a computer running the VibroSight software and a VibroSmart DMS, without accessing a VibroSight Server. Direct connections are typically used with VibroSmart DMS applications that do not use a VibroSight Server and database, for example, machinery protection systems. See also <i>stand-alone DMS</i> and <i>server connection</i> .
Direct data	Data that represents the signal originally generated by a sensor. This data or signal is often referred to as being unfiltered , overall or raw .
Direct waveform	A waveform obtained by taking a large number of samples in the time

	domain. Useful for the extended capture and storage of time-based data (for example, over several minutes). The direct waveform can be displayed as a real-time plot. Also known as <i>oscilloscope</i> data.
Discrete Fourier Transform (DFT)	A procedure for calculating discrete <i>frequency components</i> from sampled time-based data. Since the frequency domain result is complex (that is, comprises both real and imaginary components), the number of points is equal to half the number of samples. See also <i>Fast Fourier Transform (FFT)</i> .
Distributed Monitoring System	The VibroSmart® distributed monitoring system (DMS) is a family of modular and scalable products, from Meggitt Sensing Systems' Vibro-Meter product line, that can be assembled and configured to provide versatile and cost-effective CMSs and/or MPSs for industrial applications with lower channel counts. See also <i>VibroSmart</i> .
Double integration	Integration that provides a position directly from an acceleration signal. Also used with single integration to extract a speed signal. See also <i>single integration</i> , <i>integration</i> .
Doubly attached node	A network device with two external Ethernet ports operating in parallel, that can be connected directly to a HSR ring.
Dynamic data	Data (either steady state or transient) which contains that part of the transducer signal representing the dynamic (e.g. vibration) characteristics or the measured variable. Dynamic data is time-bound, that is, it is the result of measurement over a limited period of time. Typical graphical representations of dynamic data include the <i>orbit plot</i> , time-based <i>waveform</i> , <i>spectrum plot</i> , <i>polar plot</i> , <i>Bode plot</i> , <i>cascade plot</i> , and <i>waterfall plot</i> .
Dynamic signal	A waveform formed by a combination of signals at different frequencies and different amplitudes. See also <i>channel</i> .
Engineering units	Units that are calibrated by the user (for example, in/sec, g s).
Exponential averaging	A type of averaging used in FFT-based processing. Exponential averaging generates a continuous running average where the most recently collected spectra have more influence on the average than older ones. This provides some averaging to smooth the spectra and reduce noise.
External data	Data originating from a system outside the VibroSight system. Termed "offline data" in the CMS system.
Extracted data	Data that describes the quantitative characteristics of a measured parameter. Examples of static data include vibration amplitude, phase lag angle, frequency, average shaft position, shaft rotation speed, time, date, alarm monitor and status. See also <i>static data</i> .
Extracted value	Generally used in the VibroSight software to refer to a scalar value calculated by a XMx16 card using data from waveforms, spectra or other extracted values. See also <i>Spectrum</i> and <i>Waveform</i> .
External value	Generally used in the VibroSight software to refer to a scalar value generated externally to VibroSight but that can be imported into a VibroSight data repository (VibroSight historical data folder (.vshdf)). Previously referred to as an offline point. See also <i>Extracted value</i> .

Fast Fourier Transform (FFT)	A computer algorithm used to calculate discrete <i>frequency components</i> from time-based data samples. This is a special case of the <i>Discrete Fourier Transform (DFT)</i> , where the number of samples is limited to a power of two.
FFT-based processing	The processing of measurement data based on a Fast Fourier Transform (FFT) algorithm.
Filter	In general, an electronic circuit designed to pass or reject a specific frequency band of a signal.
Frequency	The repetition rate of periodic vibration over a given unit of time. Vibration frequency is typically expressed in units of cycles per second (hertz) or revolutions per minute (RPM) to more easily relate to shaft rotation speed. Since many common machine malfunctions produce vibration, which has a fixed relationship to shaft rotation speed, vibration frequency is often expressed as a function of shaft rotation speed: 1X is a vibration with a frequency equal to the RPM of the shaft, 2X vibration is twice shaft RPM, 0.5X is a frequency equal to one half of shaft RPM, and so on.
Frequency band	A set of frequency components within a predefined range of frequencies. The start and end frequencies can be defined either as a multiple of the machine's speed (RPM), or as an absolute frequency value (hertz).
Frequency component	The amplitude, frequency and phase characteristics of a dynamic signal that has been subject to a filter to produce a single frequency. See also <i>frequency band</i> .
Frequency domain	When a waveform is subjected to spectrum analysis, the result is a plot of amplitude as a function of frequency, called a <i>spectrum</i> . This spectrum is said to be in the frequency domain. Most detailed analysis of machine vibration is performed in the frequency domain.
Frequency range	The frequency range (bandwidth) over which a measurement is considered valid (that is, within a manufacturer's specifications. Typical analysers have selectable ranges. User refers to the upper frequency limit of analysis, considering zero as the lower analysis limit.
Frequency response	The measured amplitude and phase response characteristics of a mechanical or electronic system with respect to frequency.
Full load	The maximum value of output load specified for a machine under nominal operating conditions.
Fundamental frequency	The lowest frequency periodic component present in a complex spectrum. At least one complete period of a signal must be present for it to qualify as the fundamental frequency. Also known as the <i>first harmonic</i> or 1X (first order).
Graph	A drawing representing the relationship between two sets of data, one set represented on a perpendicular scale or axis, the other on a horizontal scale or axis. The relationship is plotted where the two scales intersect, the line between meeting points generally being called the graph.
Harmonics	A series of (vibration) signal frequencies consisting of a fundamental

	frequency and consecutive integer multiple frequencies generated by the <i>fundamental frequency</i> .
High-pass filter	A filter that only passes vibration signals above a predetermined <i>cutoff frequency</i> .
Historical data	Data that has been possibly pre-processed in some way then physically stored in a file or a relational database. Historical data can be imported into the VibroSight Vision and displayed in <i>plots</i> .
HSR ring	A redundant network topology consisting of DANHs connected in a ring. For example, in a VibroSmart DMS HSR ring topology, the HSR protocol of the transmitting VibroSmart module transmits copies of the message(packet) in both directions (that is, on different independent network paths) at the same time. The HSR protocol of the receiving VibroSmart module processes the message that arrives first, discarding any duplicates. Thus, in the case of a single point of failure (for example, due to a broken cable or individual VibroSmart module being reconfigured online or even failing), the message will still be received via the other direction (network path). <i>Do not</i> confuse with a (standard) Ethernet ring topology which provides only one pathway between any two nodes.
Hysteresis	The portion of a signal where a change in input does not produce a corresponding change in output. Also sometimes called "deadband". Activating hysteresis can help eliminate spurious events caused by the current value dropping frequently below then rising above an <i>alarm level</i> , generating multiple events.
Idle (no load)	A <i>machine operating mode</i> . The machine is running at or close to its nominal speed, but has not been synchronised to the electrical network (grid) and is therefore not delivering power to the network.
Integration	A mathematical operation that converts an acceleration signal to a velocity signal, or a velocity signal to a displacement signal. In the <i>frequency domain</i> , integration is performed digitally. In the <i>time domain</i> , an analog integrator is required. See also <i>single integration</i> , <i>double integration</i> . Integration is the inverse of <i>differentiation</i> .
IOC4T, IOC8T, IOC16T	Input-output cards, from Meggitt Sensing Systems' Vibro-Meter product line, required in an VM600 rack to complement the MPC4, AMC8 and CMC16 cards, respectively.
Keyphasor	Synonym for <i>1/REV pulse</i> .
Linear averaging	A type of averaging used in <i>FFT-based processing</i> . Linear averaging is the adding together of a number of spectra and then dividing the total by the number that was added. This is done for each line of the spectra and the result is a true arithmetic average on a line-by-line basis.
Live data	Data that is being streamed to the VibroSight Vision directly from the measurement source for example an XMC16 card in a VM600 rack without any intermediate processing or storage.
Long waveform	Deprecated. Use <i>direct waveform</i> .
Low-pass filter	A filter that only passes vibration signals below a predetermined <i>cutoff</i>

	<i>frequency.</i>
Lowspeed trigger	The predefined lower range of a machine's on load operating speed. When the machine's speed decreases below this value, an alarm is usually triggered.
Machine	An item of rotating machinery being monitored.
Machine operating mode	The current operating conditions of the rotating machinery being monitored. Common modes include: • Stopped • Run-up • Idle • Full load • On load • Operational transient • Coast-down. Deprecated. Use <i>machine state</i>.
Machine operating state	The state in which the rotating machinery being monitored is being operated.
Machinery Protection System (MPS)	Machinery protection product, from Meggitt Sensing Systems' Vibro-Meter product line.
Measurement	Generally used in the VibroSight software to refer to a feature extracted from an input channel that can be displayed in a plot. (Previously referred to as a data entity).
Measurement block	Multiple VibroSmart DMS modules, connected logically as a group, for example, to monitor the same machine. The modules in a measurement block can be connected physically together as a group on the same DIN rail, but this is not a prerequisite. Measurement blocks are defined in the configuration to allow inter-module communication such as the sharing of alarm, tachometer and some trigger type messages. One or more measurement blocks and an optional host computer form a VibroSmart DMS.
Measurement modes	The method used by a VM600 XMx16 card to acquire measurement data. See <i>Principal measurement mode</i> and <i>Auxiliary measurement mode</i> .
Mesh plot	A 3D wire frame plot of a surface, with points usually calculated as a function of two variables.
Metadata	Data that describes other data. Data sets, data items, and data channels all have metadata associated, for example, a unique name, the channel

	from which the data originated, or a user-supplied description.
Moving average	See <i>sliding average</i> .
MPC1	Machinery Protection Card with 1 channel, from Meggitt Sensing Systems' Vibro-Meter product line.
MPC4	Machinery Protection Card with 4 channels, from Meggitt Sensing Systems' Vibro-Meter product line.
Networked rack	A VM600 rack that is capable of communications on an Ethernet-based network (that is, network-enabled). More specifically, a rack containing either a CPUM card (and optionally, a corresponding IOCN card) or a CPUR/IOCR card pair that acts as a rack/system controller. See also <i>stand-alone rack</i> .
Nominal speed	The speed that corresponds to the "running on load" machine operating mode. For example, a test bed machine may have a nominal speed of 24,000 RPM, whereas a generating turbine runs at 3,000 or 3,600 RPM on a 50/60 Hz network (grid).
Offline	Generally used in the VibroSight software to refer to operation without a connection to XMx16 cards, that is, with historical VibroSight database data only. See also Online.
Offline data	Deprecated. Use <i>external value</i> .
On load	A machine operating mode. The machine has been synchronised with the electrical network (grid) and is generating power.
Online	Generally used in the VibroSight software to refer to operation with a connection to XMx16 cards, that is, acquiring live data. See also Offline.
Orbit	The dynamic path of the shaft centreline displacement motion as it vibrates during shaft rotation. The orbit can be observed on an oscilloscope connected to X proximity probes.
Orbit plot	A two-dimensional graphical representation of the path of a shaft centreline. Requires two vibration transducers located 90 degrees apart to measure the X and values on two separate channels.
Orders	Multiples, or harmonics, of the turning speed of a rotating machine. Orders are referred to as "1X" for running speed, "2X" for twice running speed, and so on.
Output	A <i>frequency band</i> , DC signal, or other component, defined for a <i>channel</i> with a <i>dynamic signal</i> type. See also <i>extracted data</i> .
Overspeed	A <i>machine operating mode</i> . The machine speed has increased and has crossed a defined <i>overspeed trigger</i> value.
Overspeed trigger	The predefined upper range of a machine's on load normal operating speed. When the machine's speed exceeds this value, an alarm is usually triggered.
Peak-hold	The peak signal level for a frequency or amplitude component. This value can optionally be "held" on a plot to show the maximum value for each component over a defined measurement period.
Peak-to-peak	In a signal waveform, the difference between the highest positive peak

	level and lowest negative peak value.
Phase	A measurement of the timing relationship between two signals, or between a specific vibration event and a 1/REV pulse. See also <i>absolute phase</i> , <i>relative phase</i> .
Phase compensation	An adjustment made to compensate for a relative or absolute difference in <i>phase</i> between two signals.
Phase lag angle	A parameter which relates the timing of a vibration signal to shaft rotation also used for comparison of the timing relationship between two (or more) vibration signals. Physically, it is the angular measurement from the leading (or trailing) edge of the <i>1/REV pulse</i> to the following positive peak of a vibration signal such as nX.
Phase reference	A signal used in rotating machinery measurements, generated by a sensor observing a <i>1/REV</i> event.
Phase shift	A time delay, expressed in degrees of angle, where a full circle (360 degrees) is equal to one cycle of the signal, or one rotation of the rotor in a rotating machine.
Physical quantity	Generally used in the VibroSight software to refer to the physical property of a phenomenon, body or substance that can be quantified by measurement. Examples of physical quantities are acceleration, velocity and temperature.
Piezoelectric	Any material which provides a conversion between mechanical and electrical energy. For a piezoelectric crystal, if mechanical stresses are applied on two opposite faces, electrical charges appear on another pair of faces.
Plot	To mark a series of points on a chart, diagram or map.
Plot	In VibroSight Vision, a type of document made up of one or more panes, each displaying a chart or graph.
Point	An identifier in the database which corresponds a unique data collection location. One point is required for each measurement. Digital, analog and vibration point types can be created.
Polar plot	A 2D or 3D graphical representation, consisting of a central reference point surrounded by concentric circles. Individual points are plotted as an angle and distance from the central reference point.
Principal measurement mode	The principal measurement mode is used to obtain measurements and data under normal, steady-state operating conditions for the machinery being monitored. Typically, this mode is used to measure the trend of some extracted variables, which are calculated based on dynamic data (waveform or spectrum) with a moderate number of data samples or frequency lines (medium resolution). The principal measurement mode is enabled by default as it is usually the main measurement mode used in a machinery monitoring application. Depending on the application, the auxiliary measurement mode can be used in conjunction with the principal measurement mode in order to supplement the measurement data acquired. See <i>Measurement modes</i>.

Process signal	See <i>analog signal</i> .
PROFIBUS	PROFIBUS is an industrial fieldbus networking standard based on RS-485.
PROFINET	PROFINET is an industrial fieldbus networking standard based on Ethernet.
PROFIsafe	PROFIsafe is a safety communication standard for use with PROFIBUS or PROFINET that integrates safety and standard communications on one cable.
Project	In VibroSight Vision, a logical entity comprising the data pool, all documents containing plots, filters, and project-related settings such as the current window layout. A project can be saved to disk and reopened. TBD.
Qualifier	Generally used in the VibroSight software to refer to a method to reduce the amplitude of a dynamic signal to a single number or a convention to express phase. (Previously referred to as a rectifier).
Rack	A VM600 series rack, from Meggitt Sensing Systems' Vibro-Meter product line, containing a combination of VM600 condition monitoring, machinery protection, input/output, relay, and power supply modules.
Raw signal	The unprocessed signal acquired from a sensor and representing a physical parameter.
Rectification	The conversion of all negative values of a signal to positive values.
Rectifier function	A software function that converts all negative values of a signal to positive values.
Relative phase	The measurement of equivalent events (for example, positive peaks) on two vibration signals. One of the signals must be identified as the reference event (to identify which signal lags or leads). Phase is measured in degrees, usually less than 180°. For relative phase measurements, both signals must originate from the same type of transducer. See also <i>absolute phase</i> .
Resampled data	Digitised (sampled) data that reproduces the original transducer signal. Resampled data is unbound in time.
RLC16	Relay Card with 16 relays, from Meggitt Sensing Systems' Vibro-Meter product line.
RMS	Root Mean Square. A method of measuring signal amplitude which includes an averaging effect.
RMS averaging	A smoothing technique performed by an <i>FFT analyser</i> . The FFT analyser continuously calculates the weighted average of the sum of the squares of a magnitude. This removes signal fluctuations from a synchronous signal without reducing the actual noise floor of the signal. Contrast with <i>vector averaging</i> .
Runout	A noise component in the output signal of a transducer caused by geometric imperfections in the shaft (such as scratches, chain marks, dents or rust) or uneven electrical properties
Runout compensation	The correction of a transducer's output signal for the error resulting

	from <i>slow roll runout</i> .
Run-up	A <i>machine operating mode</i> . The rotational speed of the shaft increases until it reaches the <i>low speed trigger speed</i> .
Sampling group	A number of sampled channels that all share the same <i>speed reference</i> channel. The speed reference channel must itself belong to the sampling group.
Singly attached node	A network device with a single external Ethernet port that can be connected directly to a standard Ethernet network. For example, a computer.
Sensitivity	The ratio of the response or change induced in the output to a stimulus or change in the input. A typical sensitivity for a proximity probe transducer is 200 millivolts per mil (7.84 volts per millimetre).
Server connection	Refers to a connection that has been established between a computer running the VibroSight software and a VibroSmart DMS, via a VibroSight Server. Server connections are typically used with VibroSmart DMS applications that do use a VibroSight Server and database, for example, machinery protection systems and condition monitoring systems. See also <i>direct connection</i> .
Shaft rotation speed	The frequency at which a shaft is rotating at a given moment, usually expressed in units of revolutions per minute (RPM).
Shaft centreline	The axial geometric centreline of a rotor. See also <i>average centreline plot</i> .
Signal attenuation	The reduction in magnitude of a signal without changing the basic characteristics of the signal. Attenuation results from the transmission of vibration energy from one machine part to another (for example, shaft to bearing housing) and also from signal conditioning circuits for some applications.
Signal type	The type of input signal: dynamic, analog, digital, or speed (also known as <i>tacho input</i>).
Single integration	Integration applied to a speed signal to find a position. Integration can also provide a speed value from an acceleration signal. See also <i>integration</i> , <i>double integration</i> .
Sliding average	A simple form of smoothing: each data value is replaced with the average of its neighbouring values. Also known as a <i>moving average</i> .
Slow roll compensation	The subtraction of slow roll data from vibration data taken from the same measurement point in order to remove the effects of <i>runout</i> .
Slow roll runout	A combination of electrical and mechanical runout measured at the slow roll speed. Normally, slow roll runout can only be measured with a proximity probe because of the low frequency of the signal.
Slow roll speed	A rotor speed low enough that the dynamic effects of unbalance are negligible.
$S_{\max}$	A maximum vibratory displacement in the plane of measurement, as defined in ISO 7919-1. $S_{\max}$ can be calculated using a number of different methods. See also $S_{(pp)}$ and X- <i>max</i> discriminator.

$S_{(pp)}$	Vibratory displacement peak-to-peak in the direction of measurement, as defined in ISO 7919-1. See also S_{max} .
Spectrum	A display of amplitude as a function of the frequency of a signal's components. Obtained by applying a <i>Fast Fourier Transform (FFT)</i> algorithm to a waveform. Evaluating the spectrum is a way to isolate periodic features or noise. Generally used in the VibroSight software to refer to spectral data extracted from waveforms through an FFT. See also <i>Extracted value</i> and <i>Waveform</i>.
Spectrum cascade plot	See <i>cascade plot</i> .
Spectrum display plot	Any X plot where the X-axis represents vibration frequency and the -axis represents vibration amplitude.
Spectrum waterfall plot	A series of spectrum plots taken over a range of time, usually during constant speed operation.
Speed channel	Synonym for <i>tacho channel</i> .
Speed signal	Synonym for <i>tacho signal</i> .
Speed reference	A speed (tacho) channel from which a machine's speed data is derived. Used for the processing of speed-based data for all channels attached to the same machine.
Stand-alone DMS	Refers to a VibroSmart DMS that does not use a VibroSight Server and database to log and store data. A stand-alone VibroSmart DMS is the most simple (and lowest cost) DMS and is typically used for machinery protection systems. See also <i>direct connection</i> .
Stand-alone rack	Refers to a VM600 rack that is not capable of communications on an Ethernet-based network. More specifically, a rack that does not contain a rack/system controller (CPUM card or CPUR/IOCR card pair). See also <i>networked rack</i> .
Static data	Synonym for <i>extracted data</i> .
Station	A logical entity consisting of all the machines being monitored at a particular physical location.
Steady state	A machine condition when the machine operates under stable operating conditions, typically at a constant rotation speed of the machine shaft and constant power.
Stopped	A <i>machine operating mode</i> . The machine speed is zero, though this mode may be applied whenever the speed drops below a predefined threshold.
Synchronous	The component of a vibration signal that has frequency equal to the shaft rotation frequency (1X).
System bus	Internal system bus (SBUS), based on real-time Ethernet, used by VibroSmart DMS modules for all communications. For inter-module (measurement block) and extra-module (external) communications the SBUS uses either the Ethernet (Eth1 and Eth2) or sidebus connectors (J10 and J11), as selected by the user.

System controller	A VM600 rack containing either a CPUM card (and optionally, a corresponding IOCN card) or a CPUR/IOCR card pair that acts as gateway between the MPS (TBC) software running on a host computer and the other cards in the rack. An external system communicates directly with the system controller using a serial communications or Ethernet connection, as required. See also <i>networked rack</i> .
Tacho	Synonym for <i>speed</i> .
Tacho channel	Input channel of an input/output card containing circuitry used to process pulse signals typically originating from proximity probes, magnetic pulse pickup sensors, or TTL type signals. Also called a <i>speed channel</i> .
Tacho signal	An input signal type that measures the velocity of a point, usually in terms of RPM. Also called a <i>speed signal</i> .
Tag	A label applied to data originating from an external source to identify its origin.
Time domain	Vibration exists in time, and is said to be in the time domain. The representation of a vibration signal in the time domain is a waveform. Although most detailed analysis of machine vibration is performed in the <i>frequency domain</i> , certain conditions are more easily interpreted in the time domain.
Time domain averaging	Averaging of values performed in the <i>time domain</i> .
Timestamp	The current date, assigned at the time of data collection or occurrence of an event.
Toolbox	A collection of useful utility functions in VibroSight Vision.
Transducer	A device for translating the magnitude of one quantity into another quantity. The second quantity often has units of measure different from the first and serves as the source of a useful signal. Vibration transducers convert mechanical motion into a proportional electronic signal (typically a voltage-proportional signal).
Transient	A machine condition when operating conditions are changing, typically the speed or the generated power.
Transient data	Static or dynamic data acquired during transient machine operating conditions (for example, the start-up and coast-down phases of a machine).
Transient cascade plot	See <i>waterfall plot</i> .
Trend	The measurement of a variable versus time.
Trend data	The periodic storage and display of static or dynamic data for the purpose of observing changes in machine behaviour over time.
Trend interval	The time period between consecutive data points on a <i>trend plot</i> .
Trend plot	A graphical presentation in rectangular (Cartesian) or polar format of a measured variable versus time.
Trending	The storage of vibration signals, recorded at regular time intervals, and plotting of the changes in vibration levels over time. Changes in the trend may indicate a developing problem.

True peak	The <i>peak-to-peak</i> value amplitude value of a time-based waveform divided by two.
Turning gear	See <i>barred gear</i> .
Vector	A quantity which has both magnitude and direction. For a vibration vector, magnitude is expressed as amplitude (displacement, velocity, or acceleration) and direction as <i>phase lag angle</i> (degrees). For example, the vibration vector measured at shaft rotation speed (1X), for example for balancing purposes, will be described as a magnitude (mils or micrometres) acting in a particular direction (degrees). The vector data presentation, which is easiest to interpret, is the polar format. See <i>polar plot</i> .
Vector averaging	A smoothing technique performed by an <i>FFT analyser</i> . The real and imaginary components of a signal are summed and continuously averaged. This effectively removes noise from a synchronous signal. Contrast with <i>RMS averaging</i> .
Versa Module Eurocard	A computer bus standard (standardized by the IEC as ANSI / IEEE 1014-1987).
Vibration	The oscillatory (back and forth) motion of a physical object around an equilibrium position.
Vibro-Meter ®	Vibro-Meter is a product-line from Meggitt Sensing Systems. The Meggitt Sensing Systems facility in Fribourg, Switzerland was formerly known as Vibro-Meter SA, but is now Meggitt SA. (Meggitt Sensing Systems is the operating division of Meggitt specializing in sensing and monitoring systems, which has operated through its antecedents since 1927 under the names of ECET, Endevco, Ferroperm Piezoceramics, Lodge Ignition, Sensorex, Vibro-Meter and Wilcoxon Research.)
VibroSight ®	The VibroSight ® software, from Meggitt Sensing Systems' Vibro-Meter product line, is a highly-integrated software suite that supports the effective condition monitoring of all rotating machinery. The VibroSight software is compatible with both VM600 rack-based systems and VibroSmart module-based (DMS) systems.
VibroSmart ®	VibroSmart ® is the name of a family of modular and scalable modules and products, from Meggitt Sensing Systems' Vibro-Meter product line, that can be assembled and configured to create a distributed monitoring system. See also <i>distributed monitoring system</i> and <i>VibroSight</i> .
$V_{\max}$	Similar to $S_{\max}$, but applied to velocity signals. See also $S_{\max}$.
VSA301	Buffered output amplifier for use with a VibroSmart VSV30x module, from Meggitt Sensing Systems' Vibro-Meter product line
VS010	Terminal base for use with a VibroSmart VSI010 module, from Meggitt Sensing Systems' Vibro-Meter product line.
VS030	Terminal base for use with a VibroSmart VSV30x module, from Meggitt Sensing Systems' Vibro-Meter product line.

VSI010	Communications interface module (data communications bridge) for use in a VibroSmart DMS, from Meggitt Sensing Systems' Vibro-Meter product line. See also <i>VS010</i> .
VSN010	Real-time Ethernet network switch for use in a VibroSmart DMS, from Meggitt Sensing Systems' Vibro-Meter product line.
VSV30x	Vibration monitoring module for use in a VibroSmart DMS, from Meggitt Sensing Systems' Vibro-Meter product line. See also <i>VS030</i> .
Waterfall plot	A plot showing a series of half or full spectrums taken over a period of time, usually during constant speed operation. See also <i>cascade plot</i> .
Waveform	Representation of how a measured parameter changes over a period of time (typically less than a second). This vibration signal, originating from a single transducer, is represented in a time-based plot. A waveform can be either unfiltered (containing all harmonics) or filtered (calculated from a selected number of harmonics). Generally used in the VibroSight software to refer to raw data as measured by a XMx16 card. The samples of a waveform are either spaced equally in time (fixed frequency mode) or spaced equally in space (order tracking mode). See also Extracted value and Spectrum.
Window layout	In VibroSight Vision, a user-defined arrangement of toolbars, dockable windows and documents within the main window. Window layouts can be saved to disk and reloaded as required.
Windowing	FFT-based measurements are subject to errors from an effect known as "leakage". This effect occurs when the FFT is computed from a block of data that is not periodic. This introduces noise into the spectrum, which broadens the frequency lines, reduces the calculated amplitudes and increases the noise floor. Windowing functions can be applied to reduce this FFT leakage problem. The most commonly used windowing functions are Hanning and Uniform.
XMC16	Replacement for the CMC16 measurement card, specifically designed for use with VibroSight, from Meggitt Sensing Systems' Vibro-Meter product line.
X- max discriminator	A maximum vibratory displacement measurement in the plane of measurement corresponding to the higher of the two input signals. X- max discriminator is calculated using ISO 7919-1 method B. See also S_{max} .
oom spectrum	oom FFT analysis is an efficient calculation of a subset of the FFT used when the domain of interest is a narrow frequency band. Rather than calculating the FFT for the entire frequency range, a oom spectrum is only performed on a subset of frequencies.

Colophon

Version

The version of the VibroSight® software being used can be found using the **Help** menu in any of the software modules (**Help > About VibroSight ...**).

This  VibroSight 3.6.0 help was last updated on Wednesday 27 June 2018.

Important notice

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About Meggitt, Meggitt Sensing Systems and Vibro-Meter

Headquartered in the UK, Meggitt PLC is a global engineering group specialising in extreme environment components and smart sub-systems for aerospace, defence and energy markets.

Meggitt Sensing Systems is the operating division of Meggitt specialising in sensing and monitoring systems, which has operated through its antecedents since 1927 under the names of ECET, Endevco, Ferroperm Piezoceramics, Lodge Ignition, Sensorex and Vibro-Meter. Today, these operations are integrated under one strategic business unit called Meggitt Sensing Systems, headquartered in Switzerland and providing complete systems, using these renowned brands, from a single supply base.

The Meggitt Sensing Systems facility in Fribourg, Switzerland operates as the legal entity Meggitt SA (formerly Vibro-Meter SA). This site produces a wide range of vibration, dynamic pressure, proximity, air-gap and other sensors capable of operation in extreme environments, electronic monitoring and protection systems, and innovative software for aerospace and land-based turbomachinery. This includes the VibroSight® software, produced for the Vibro-Meter® product line.

Related information

[Meggitt Vibro-Meter website \(external website\)](#)

16 SERVICE AND SUPPORT

16.1 Contacting us

Vibro-Meter' worldwide customer support network offers a range of support, including 16.2 Technical support and 16.3 Sales and repairs support. For customer support, contact your local Vibro-Meter representative. Alternatively, contact our main office:

Meggitt SA
Customer support department
Route de Moncor 4
PO Box 1616
1701 Fribourg
Switzerland

Telephone: +41 26 407 11 11
Email: energysupport@ch.meggitt.com
Website: www.meggittsensing.com/energy

16.2 Technical support

Vibro-Meter' technical support team provide both pre-sales and post-sales technical support, including:

- 1- General advice
- 2- Technical advice
- 3- Troubleshooting
- 4- Site visits.

NOTE: For further information, contact Vibro-Meter (see 16.1 Contacting us).

16.3 Sales and repairs support

Vibro-Meter' sales team provide both pre-sales and post-sales support, including advice on:

- 1- New products
- 2- Spare parts
- 3- Repairs.

NOTE: If a product has to be returned for repairs, then it should be accompanied by a completed Energy product return form, included on page 16-4.

16.4 Customer feedback

As part of our continuing commitment to improving customer service, we warmly welcome your opinions. To provide feedback, complete the Energy customer feedback form on page 16-7 and return it Vibro-Meter' main office (see 16.1 Contacting us).

REPAIRS AND RETURNS

Energy product return procedure

If a Meggitt Vibro-Meter® Energy product needs to be returned to Meggitt Switzerland, please use the online product return procedure on the Meggitt Vibro-Meter® website at www.meggittsensing.com/energy/service-and-support/repair

As described on the website, the product return procedure is as follows:

- 1- Complete and submit online the **Energy product return form** that is available on the website (note: * indicates a required field).

For each Energy product to be returned, a separate Energy product return form must be completed and submitted online.

When an Energy product return form is submitted online, an acknowledgement email including an Energy product return reference number, will be sent by return to confirm that the product return form was received by Meggitt Switzerland.

Please use the Energy product return reference number in all future communications regarding your product return.

- 2- Complete and include an end-user certificate.

For each Energy product to be returned, an associated end-user certificate is also required.

The single-use end-user certificate is recommended for smaller organisations that handle few products and the annual end-user certificate is recommended for larger organisations that handle many products.

Either end-user certificate can be used to cover multiple products.

NOTE: Visit the website or contact our Customer support department (see 16.1 Contacting us) to obtain the appropriate end-user certificate form.

- 3- Send the Energy product together with printed copies of the acknowledgement email (or emails) and the end-user certificate (or certificates) to Meggitt Switzerland at

Meggitt SA, Repairs department, Route de Moncor 4, PO Box 1616, 1701 Fribourg, Switzerland.

A separate acknowledgement email (printed copy) is required for each product to be returned, although a single end-user certificate (printed copy) can be used for multiple products.

- 4- In addition, a purchase order (PO) with a value of CHF 0.00 must also be sent to Meggitt Switzerland, in order to support the initial problem diagnosis.

NOTE: The **Energy product return form** reproduced below is included to support the gathering of information required for completion and submission online.

Energy product return form

Contact information

First name:*

Last name:*

Job title:

Company:*

Address:*

Country:*

Email:*

Telephone:*

Fax:

Product information

Product type:*

Part number (PNR):*

Serial number (SER):

Note: Enter "Unknown" if the serial number (SER) is not known.

Ex product:

☐ Yes☐ No

SIL product:*

☐ Yes☐ No

Meggitt SA purchase order number:

Date of purchase (dd.mm.yyyy):

Product under warranty:

☐ Yes☐ No☐ Don't know

Site where installed:

End user:

Return information

Reason for return:*

- ☐ Repair
- ☐ Out-of-box failure

If the reason for return is "Repair", please answer the following questions:*

Type of failure:

- ☐ Continuous
- ☐ Intermittent
- ☐ Temperature dependent

How long was the operating time before failure?

Description of failure:

Please provide a detailed description in order to help with problem diagnosis.

If the reason for return is "Out-of-box failure", please answer the following questions:*

Type of out-of-box failure:

- ☐ Product damaged
- ☐ Incorrect product configuration
- ☐ Incorrect product delivered
- ☐ Problem with documentation / labelling
- ☐ Product dead-on-arrival

Additional information:

Please provide as much information as possible in order to help with problem diagnosis.

Ex product information – additional information required for Ex products only

Is the product installed in a hazardous area (potentially explosive atmosphere)?:

☐ Yes

☐ No

If the product is installed in a hazardous area, please answer the following questions:

How long was the operating time before failure?:

Additional information:

SIL product information – additional information required for SIL products only*

Note: For SIL products used in functional safety contexts/systems, this **SIL product information** section must be completed.

Is the product installed in a safety-related system?:*

☐ Yes

☐ No

If the product is installed in a safety-related system, please answer the following questions:*

Did the system fail** in a safe mode?:* (That is, the safety relay operated but the trip was spurious.)

☐ Yes

☐ No

☐ Not applicable

Did the system fail** in a dangerous state?:* (That is, the failure did not result in the safe state.)

☐ Yes

☐ No

☐ Not applicable

How long was the operating time before failure (in hours)?:*

Additional information:

** A faulty indicator LED is considered as a cosmetic failure.

FEEDBACK

Energy customer feedback form

Manual information

Title of manual:

VibroSight® 3.6.0 software manual

Reference: VIBROSIGHT-SW/E

Version: Release 3.6.0

Date of issue: June 2018

Customer contact information

First name:*

Last name:*

Job title:

Company:*

Address:*

Country:*

Email:*

Telephone:*

Fax:

Feedback – general

Please answer the following questions:

Is the document well organised?	☐ Yes	☐ No
Is the information technically accurate?	☐ Yes	☐ No
Is more technical detail required?	☐ Yes	☐ No
Are the instructions clear and complete?	☐ Yes	☐ No
Are the descriptions easy to understand?	☐ Yes	☐ No
Are the examples and diagrams/photos helpful?	☐ Yes	☐ No
Are there enough examples and diagrams/photos?	☐ Yes	☐ No
Is the style/wording easy to read?	☐ Yes	☐ No
Is any information not included?	☐ Yes	☐ No

Please include any additional information in the "Feedback – additional" section below.

Feedback – additional

Additional information:

Please provide as much feedback as possible in order to help us improve our product documentation.
Continue on a separate sheet if necessary ...