

MICRO THERMO TECHNOLOGIES

MT Alliance – Quick Reference Guide

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MICRO THERMO
TECHNOLOGIES

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1. Overview

Consider the MT Alliance system as your personal assistant. It is there to provide you with a wide range of complete, relevant and updated information. It warns you when a problem arises.

The MT Alliance information and control system is a software platform that interacts with distributed intelligence electronic modules called nodes. These nodes thoroughly monitor your Heating, Ventilation and Air Conditioning (HVAC) systems along with your lighting and energy subsystems. They also control your refrigeration racks and constantly monitor your refrigerated cases to prevent any loss of perishable foods 24 hours a day. You will be notified whenever perishable foods are in jeopardy so that you may take the necessary step to prevent any losses. These nodes also control any HVAC equipment, such as rooftop units, air processing devices, zone controllers, etc. You can also use set points to adjust room temperature or humidity. As well, lighting can be controlled either manually or by a programmable schedule hosted in the nodes. You can also obtain a detailed profile of the power consumption.

MT Alliance is a state of the art monitoring system for refrigerated cases. Each case can house one or several temperature sensors. These sensors measure the temperature of the air delivered and the actual or simulated temperature of a product. Every monitoring point includes a Low Limit, a High Limit, an Alarm time, etc. The MT Alliance assistant works tirelessly and has a phenomenal memory: years of recorded data, up to 1-minute intervals, can be recovered instantly for each monitoring point. The MT Alliance system also manages dual temperature refrigerated cases. Flipping the switch of your dual temperature refrigerated case does not trigger a false alarm. As well, MT Alliance can send a complete alarm message to your alphanumeric pager.

MT Alliance is easy to use because you can view your site on a display screen. Red buttons over the floor plan show you where active alarms are located. You only need to move the mouse cursor over the button and click to get detailed information on each point sensed. It's easy to review alarm limits and browse the graph log of the readings to determine when the alarms were triggered and see who acknowledged them. A new employee can be trained to use the MT Alliance monitoring system within an hour.

2. Using this manual

This manual is intended for supermarket managers, project managers and employees who must monitor, use and take steps for events that occur when MT Alliance is in operation.

3. Procedures

This section will show you how to perform all your tasks.

To acknowledge an alarm, please refer to section 3.5

3.1 Logging In



From the Main Menu, select **Access – Log in...** or click the Key icon on the toolbar. Type your Account and Password. Select the number of hours and/or minutes you will be logged on MT Alliance. By default, MT Alliance will log you out after 15 minutes.

The image shows a dialog box titled "MT Alliance Log In". Inside the dialog, there is a prompt "Enter your account and password". Below this, there are two text input fields: "Account" and "Password". Underneath these fields, there is a "Valid for" section with two spinners. The first spinner is set to "0" and is followed by the text "Hour(s)". The second spinner is set to "15" and is followed by the text "Minute(s)". At the bottom of the dialog, there is a button with a green checkmark and the text "OK".

Your password can be made up of any characters, except for the dollar (\$) sign. Your Account and Password are not case sensitive (a = A). If you forget or don't know your Account and Password, please see your line supervisor. If you are the senior executive, manager or owner of the supermarket and have forgotten either or both, please contact Technical Support as indicated by clicking on Info in Technical Support Company in the **Help – About** topic.

3.2 Logging Out



Click the Key icon on the toolbar. Don't do anything else and leave the MT Alliance Log In window open.

3.3 Logging In for the First Time



When you use the MT Alliance system for the first time, you will need a temporary Account and Password to access the system and create your users. There is a temporary account set up for this. The “temp” Account and “temp” Password will allow you to access the system to create your own users. This temporary user will become inactive and be deleted from your user list 60 days after the installation of the MT Alliance system.

3.4 Navigating the Main Window

The main window is shown below.

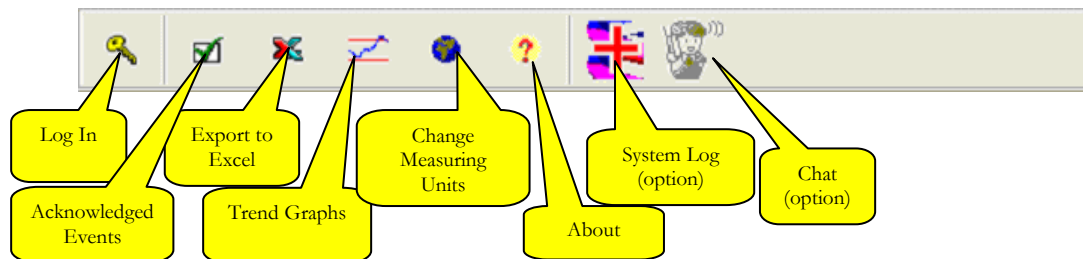
The screenshot shows the MT Alliance - John Smith Supermarket main window. The interface includes a menu bar at the top with options like File, Access, Subsystem, Mode, View, Events, Reports, Options, Tools, Configure, Support, and Help. Below the menu bar is a toolbar with icons for key, checkmark, cross, magnifying glass, and help. A table of recent events is displayed, showing priority, date/time, event source, event description, acknowledged by, at date/time, and subsystem. The main area features a floor plan of the supermarket with various departments labeled, including Bakery, Produce, Prep Food, Fresh Meat, Meat Freezer, Dairy Cooler, Juices, Yogurt, Cheese, Prep Dishes, and Salad Corner. The status bar at the bottom shows the current user (John Smith dir) and the date & time (Mon, June 14, 2004 18:58:16). Other labels point to the Number of active alarms (2), Menu Bar, Recent Events, Sub-System Menu, Mode Menu, View Menu, Navigation Bar, and Status Bar.

Priority	Date/Time	Event Source	Event Description	Acknowledged by	At Date/Time	Subsystem
Medium	06/28/2004 18:55:56	Sys1a, Dairy Case	Temperature too high			Refrigeration
Medium	06/28/2004 18:48:13	Sys-2, Ice Cream Case	Temperature too high			Refrigeration
	06/23/2004 14:57:47	Secondary Cooling, Freeze Status 2	Temperature	Tracy Adcock (TECH)	06/28/2004 18:29:55	Refrigeration
	06/23/2004 14:57:46	Secondary Cooling, Flow Status	No Flow	Tracy Adcock (TECH)	06/28/2004 18:29:54	Refrigeration
	06/23/2004 14:57:45	Secondary Cooling, Freeze Status 1	Temperature	Tracy Adcock (TECH)	06/28/2004 18:29:53	Refrigeration

From the Main Window, all you need is only a few clicks away. The **Menu Bar** contains all the actions that you can perform. You will note that certain features are reserved for some users. You will often see greyed out menu items and buttons. You will also see text fields with a greyed-out background and white printed text. Essentially, there are three reasons for which menu items, buttons and fields can be disabled:

1. You do not have permission to access this feature.
2. Only a qualified technician can access this feature, either in Maintenance Mode or in Configuration Mode.
3. The context is not clearly established to enable the feature (e.g. the Acknowledge button is disabled when there are no active alarms).

The **Toolbar** offers a range of icons likely to be used more often. When moving the mouse cursor over the icon, a tool tip displays and identifies the feature.



The **Recent Events List** contains active alarms or alarms that have been recently acknowledged. Active alarms are always displayed on a red line. If there are more than 5 alarms, you must scroll the list to see the rest. The number of active alarms is displayed to the right of the list. Alarms are always listed by priority, the most recent events showing up at the top.

Priority	Date/Time	Event Source	Event Description	Acknowledged by	At Date/Time	Subsystem
Medium	06/23/2004 18:48:13	Sys22 Ice Cream Case	Temperature too high			Refrigeration
High	06/23/2004 14:57:47	Secondary Cooling, Freeze Status	Temperature	Tracy Adcock (TECH)	06/28/2004 18:29:55	Refrigeration
High	06/23/2004 14:57:46	Secondary Cooling, Flow Status	No Flow	Tracy Adcock (TECH)	06/28/2004 18:29:54	Refrigeration
High	06/23/2004 14:57:45	Secondary Cooling, Freeze Status	Temperature	Tracy Adcock (TECH)	06/28/2004 18:29:53	Refrigeration
Low	06/23/2004 14:58:11	RTU, Return Air Temperature	Temperature too low	Tracy Adcock (TECH)	06/28/2004 18:30:10	HVAC

If you click on an event line and then on the Acknowledge button, you can acknowledge the alarm immediately. If, instead, you click the Information button, you will instantly access the sensor data history for the exact moment the alarm was triggered. If you acknowledged an alarm a few hours earlier, it will still be listed, but not in red. If you click and hold the Find button, the sensor of the alarm selected will temporarily be highlighted.

At all times, the **Navigation Bar** displays the current subsystem, the current mode and the current view. Click twice on the selection displayed to scroll through the list of other options available and click on the desired subsystem, mode or view to change. To switch subsystems or views, you must first select the subsystem, then the mode and the view.

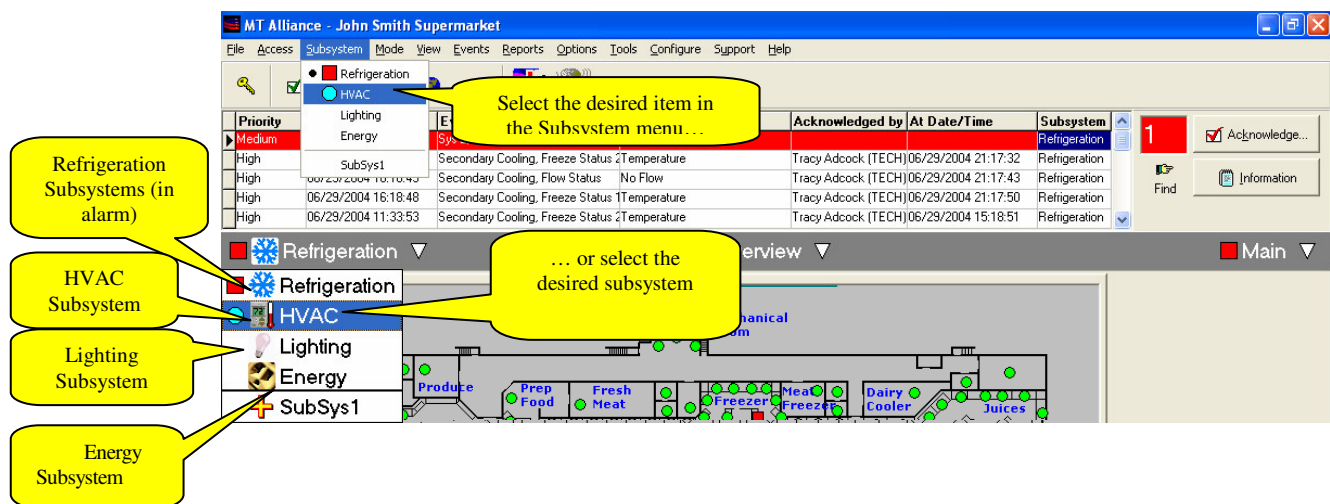
The **Status Bar** displays the name of the user currently logged in, as well as the date and time.

3.4.1 Changing Subsystems

To reduce the amount of information displayed, only one subsystem is enabled at a time. The current subsystem and its operation mode are displayed on a grey line called the Navigation Bar, under the Recent Events List and above the view.

For example, let's assume that the current subsystem is Refrigeration and you want to view HVAC, here's how you should proceed:

1. Click the Refrigeration button on the Navigation Bar, or...
2. Go to the main menu and select **Subsystem – HVAC**.



3. Make your choice.

One click is all that's needed to select the subsystem and make the list disappear from the menu.

3.4.2 Changing Modes Within a Subsystem

The subsystem modes determine the features available to a user in any given subsystem. These modes are:

- **Overview** – The user cannot define any settings in this mode.
- **Maintenance** — Only managers and executives can define settings.
- **Configuration** – For installations and settings made by a trained technician.

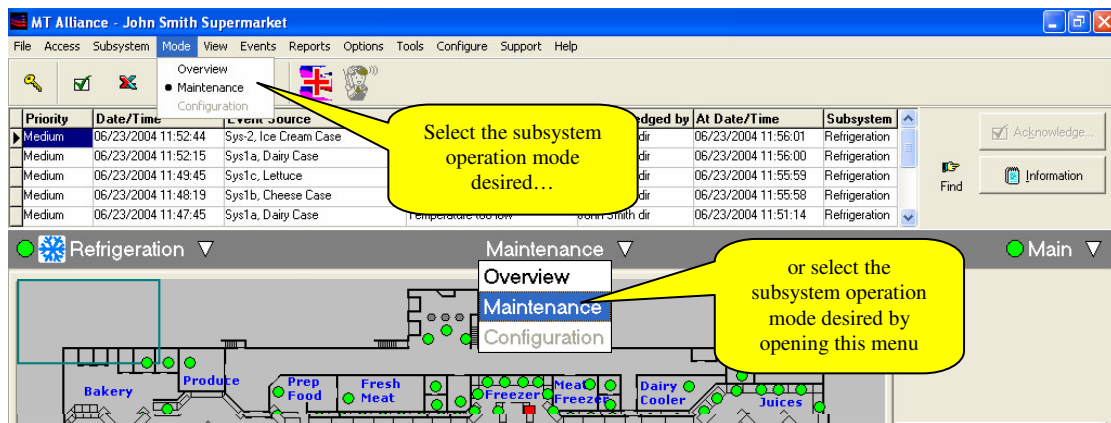
When you change operation modes, you only change the current subsystem. Each subsystem stores its operation mode in memory. For example, you could be in Maintenance mode in Refrigeration (Refrigeration- Maintenance), and switch to the HVAC subsystem in Overview mode (HVAC- Overview).

To change the subsystem mode:

1. Click the Overview button on the Navigation Bar, or...
2. Use the Mode menu on the Menu bar. If this option is not displayed on the menu bar, you do not have permission to change modes. If the Mode menu is available, but Maintenance or Configuration is greyed out, you do not have access to these modes.

Note: Every time you log on, the modes of all subsystems open automatically on Overview.

3. Make your choice.



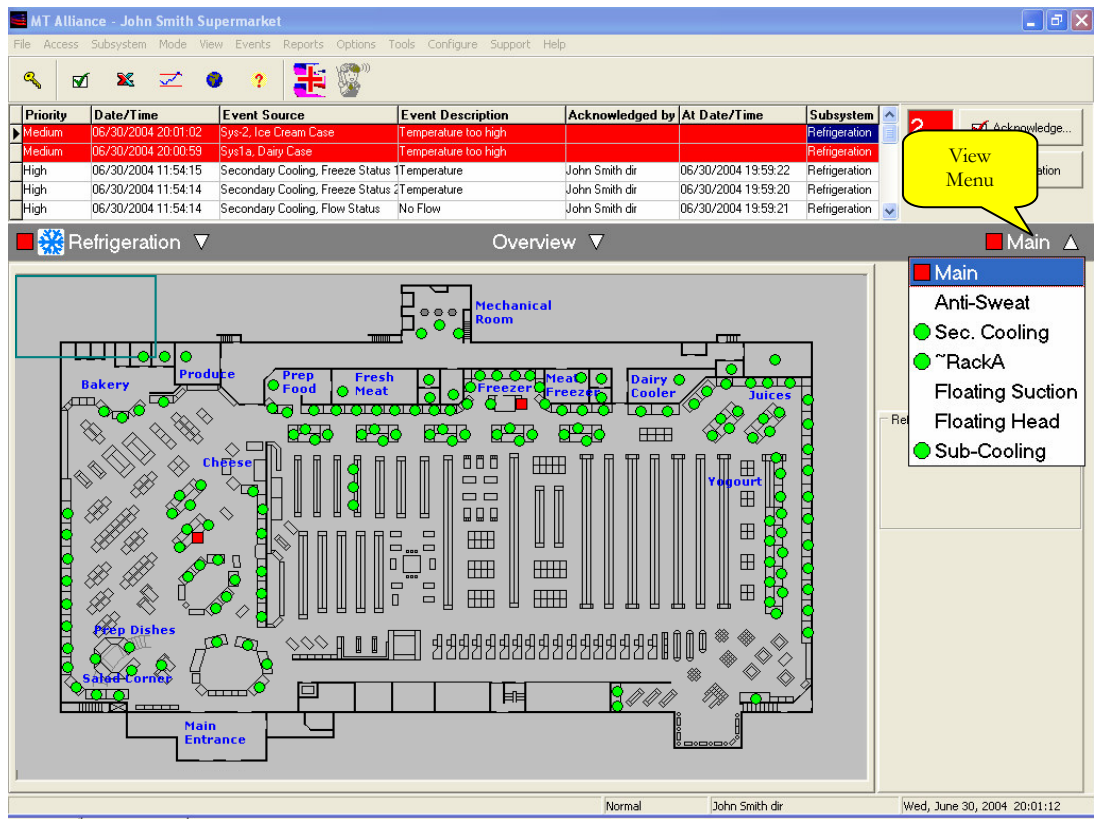
One click is all that's needed to select the mode and make the list disappear from the menu.

3. 4. 3 Changing Views Within a Subsystem

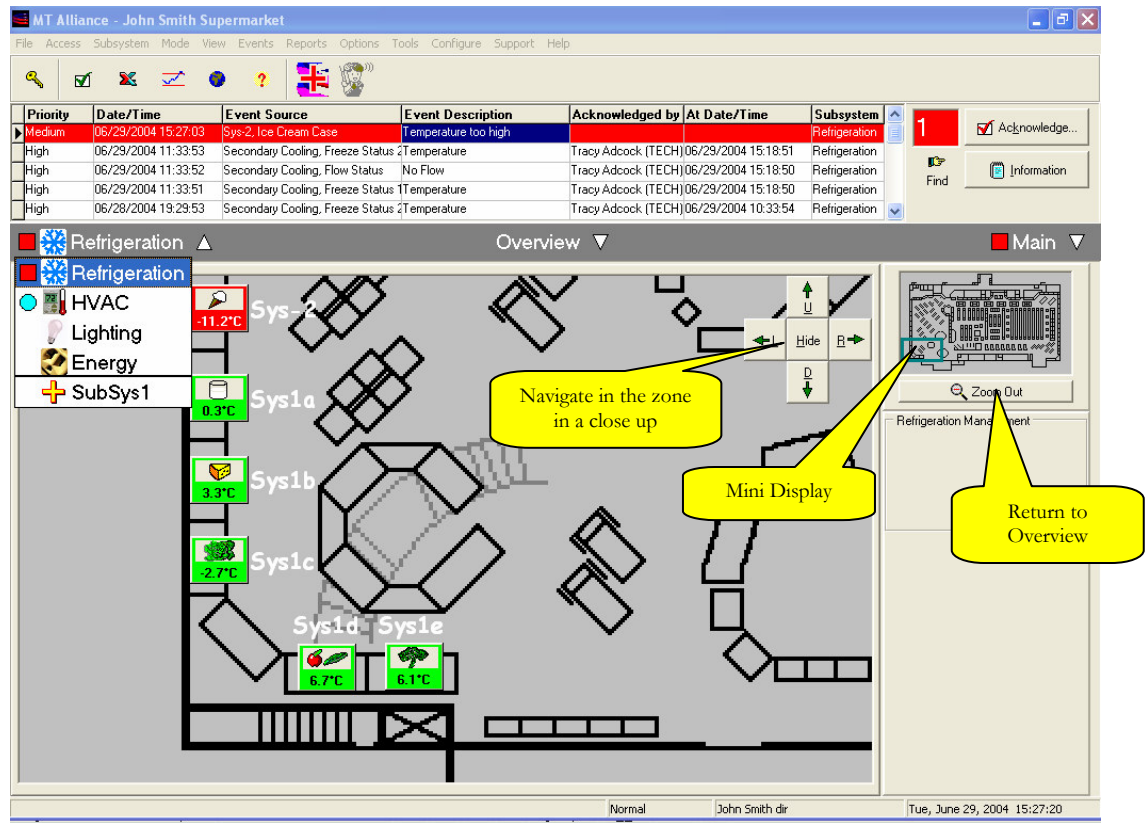
The **Store Views** show your store layout using drawings and plans. Green circles in the view represent sensors. Red squares represent sensors in alarm. Green circles in the menu represent views containing monitoring sensors. Red squares represent views containing sensors in alarm. Click on the name of the current view to display the view list and click on the desired view in the list to navigate from one to another.

When you click on a desired view, the list remains on screen to help you locate a view. You can change views using the arrows on the keyboard. Click outside the list or double click on the desired view to make the view list disappear.

If the view displays a rectangle when you move the mouse cursor over it, it could be on a close up. To obtain this close up, click on the site you want to zoom in on in order to see the details within that view.

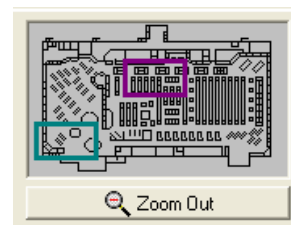


You'll be amazed at how easily you can instantly access critical data, such as the section being monitored and the nature of the current sensor values.



After zooming in, you can reach a section immediately by clicking anywhere on the mini-display at right. You can also use the arrows within the close up. If you click near one of the borders of the plan, other than on a button, MT Alliance will move the plan so that the area where you clicked is located at the centre of the zoom. To zoom out of the image and return to the overview, simply click on any name in the View or Subsystem menu or on the Zoom Out button under the mini-display.

The mini-display contains two coloured rectangles. The teal rectangle shows the zone that is zoomed in. Using your mouse, you can move the magenta rectangle and click elsewhere to get a different close up of the same view.

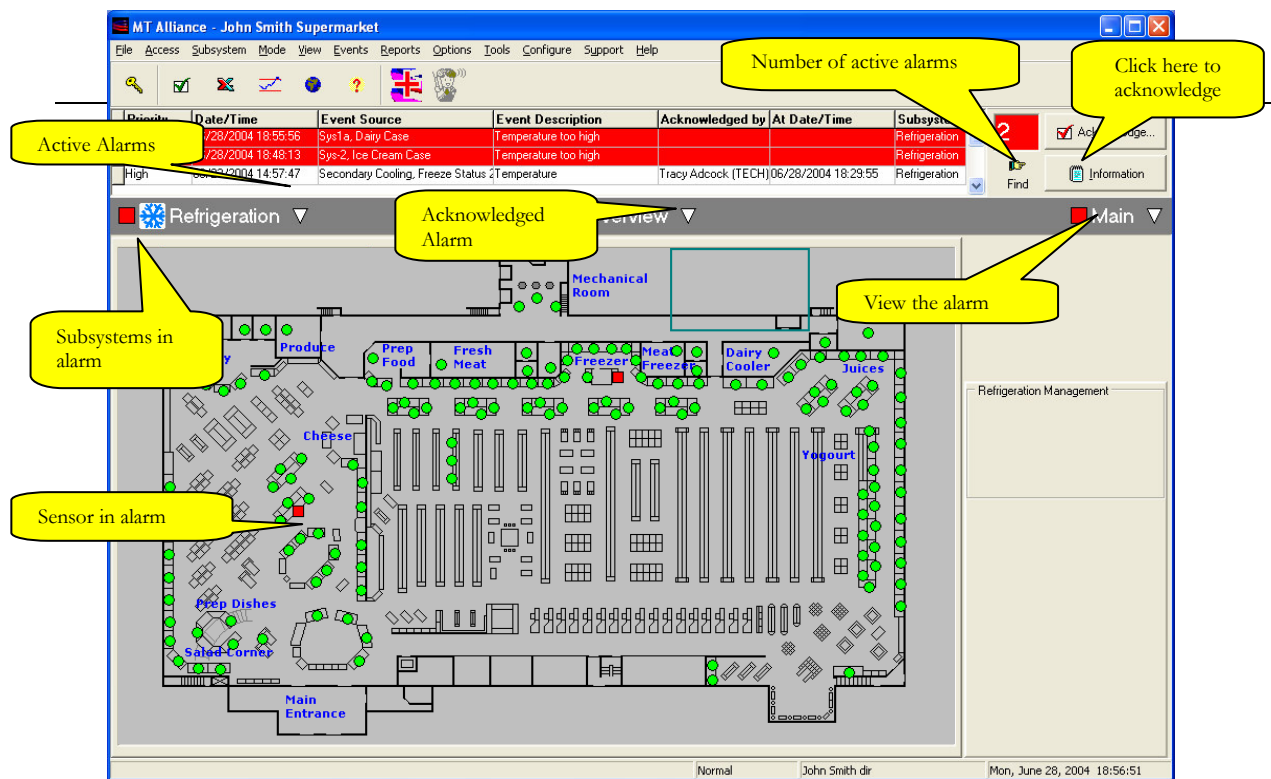


3.5 Acknowledging Alarm Signals

This quick overview will show you how to acknowledge a typical alarm so that you may quickly return to your business.

Can you hear it? The MT Alliance audio alarm signal is usually a woman's voice saying "alarm... alarm..." When the MT Alliance audio alarm signal sounds, this means at least one alarm has been triggered.

When you hear an alarm signal, the first thing to do is to determine which subsystem is responsible and view the triggered alarm. To do so, locate the red zones in the window. Each active alarm is displayed on the red line in the Recent Events List.



To locate the sensor in alarm, click on a red line in the list. The subsystem and the view will switch automatically to those where the sensor is in alarm. You can also click Find to change the colour of the point in alarm to help you locate it in the plan amongst other points that could be in alarm. The colour will change for as long as you hold the mouse button. To acknowledge this alarm, click the Acknowledge button.

Acknowledge

Details

Event Type	Alarm
Priority	Medium
Date / Time	04/30/2003 12:52:34
Sensor	System 41 - 4, Deli Case
Event Description	Temperature too high
View	Store
Subsystem	Refrigeration
Alarm Relay	ACT 2

Actions

- Make sure the fan is blowing
- Make sure products are not blocking the air vents

If you can not solve the problem yourself, please call Western refrigeration at (639) 633-7036

☐ Acknowledge ALL Refrigeration sensor alarms

☐ Print acknowledgement report

Account Name:

Password:

Callout 1 (left): To acknowledge all the alarms within a subsystem simultaneously, check this box..

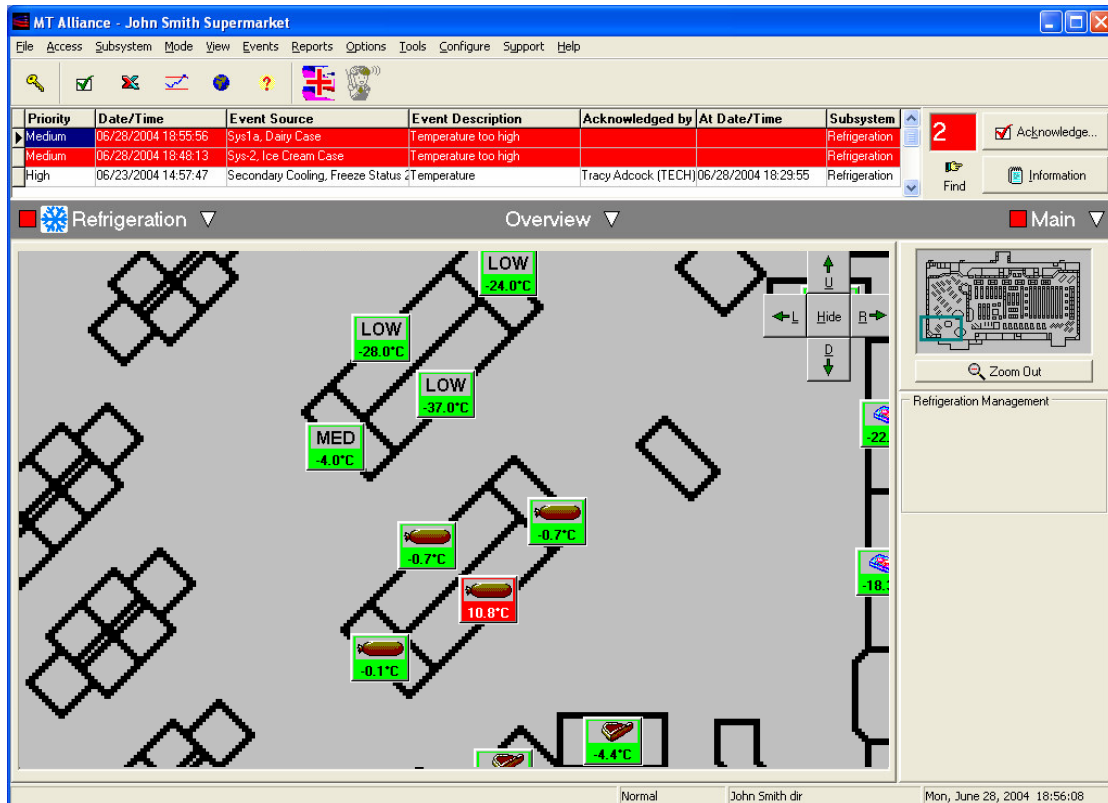
Callout 2 (top right): List of possible actions to take before calling your service company

Callout 3 (bottom right): If you are already within the system, type your password and click OK to acknowledge the alarm.

If you are not within the system and would still like to acknowledge the alarm, you must first type your Account Name and Password before clicking OK.

That's it! It's now up to you to take the necessary steps to remedy the cause of the alarm. Thanks to the floor plan, you know precisely where the alarm is located.

Another alternative would be to move your mouse over the red squares and to click. The floor plan will display in a close up and the red squares will take the shape of red buttons (see following page). Click the red button, then the Acknowledgement button (which is also red). A window, like the one in this example, will display.



Refrigerated Case Alarms: There are several possible causes for alarms in refrigerated cases. Below is a short list to help you identify them:

SYMPTOMS	POSSIBLE CAUSES	SOLUTIONS
Ice is building up on the cooling elements in the case.	The defrost system is malfunctioning. The room humidity level is too high.	Contact the refrigeration company. Try to lower the room humidity level.
The air circulation and/or the fan noise are no longer sensed.	The fan is malfunctioning. There is an electrical problem inside the case.	Contact the refrigeration company.
The air circulation is insufficient.	Food products are blocking the vents. The fan is malfunctioning.	Move the food products. Contact the refrigeration company.
Food products are not as cold as they should be.	A door was left open too long. The compressors were down for some time (power failure).	Close the door (if you did not do so already). Check to see if a compressor alarm was triggered.

For more information about refrigeration alarms, please see the Alarm Concepts chapter.

GOOD ADVICE

Want to save money and maintain the freshness of your products?

Never exceed the refrigerated case load line. Never block the evacuation vents or return air vents, otherwise this will affect the performance of your case. Moreover, there will be an uneven temperature distribution and a loss of energy inside the case.

Problems encountered by the MT Alliance system: On occasion, the MT Alliance system may encounter some operation problems, such as:

SYMPTOMS	POSSIBLE CAUSES	SOLUTIONS
The sensor values are excessively low.	Cut (opening) in the sensor cable or malfunction. Possible defect of the electronic module or sensor.	Call Technical Support about the problem displayed.
The sensor values are excessively high.	The sensor cable is shorted. Possible defect of the electronic module or sensor.	Call Technical Support about the problem displayed.
Sensors are displayed in black. Malfunction or Node Test Fail is displayed in the events list.	Defective electronic module. Problems with the network cable between modules. Defective network terminal. No power on the module.	Call Technical Support about the problem displayed.

3.5.1 Temporarily Disabling an Alarm Point

When performing maintenance on a refrigerated case, for example, you might not want an alarm reminder every hour and it would be best to temporarily disable the sensor monitoring alarm. Click on the sensor button. In the Alarm Settings tab, select Disable Alarm Temporarily. On the right, select the duration (1 min to 22 days). You can enter the reason for the disabling. Click OK to save the changes. If Disable Alarm Temporarily is greyed out, you do not have permission to run this feature.

Sensor Information - Sys1a

Details | **Alarm Settings** | Hardware | Graph & Log

Status: ● Normal Value: 0.3 °C

Alarm Activation: Enabled

Change Alarm Activation

- ☐ Disable Alarm Permanently
- ☒ **Disable Alarm Temporarily**
- ☐ Enable Alarm

Change Temporarily Disable Alarm Settings

For: 1 days 0 hours 0 minutes

Until: 07/01/2004 at 15:13

Reason: Cleaning

Alarm Set 1

Pick Defined Alarm Settings

Description: Dairy Case

High Limit: 8.0 °C

Optimal Value: 0.0 °C

Low Limit: -5.0 °C

Alarm Set Time: 01 h 30 m

Alarm Recall Time: 01 h 00 m

Alarm Relay: Case

Alarm Priority: Medium

OK Cancel Delete



The sensor button will be displayed in light blue to show it is no longer active. The view where the sensor is located will also be light blue. As soon as the delay is elapsed, the monitoring system will resume its task automatically. To restore the monitoring feature before the end of the predefined period, click the Enable Alarm button.

3.5.2 Permanently Disabling Alarm Monitoring

When renovating or moving a refrigerated case, for example, you might want to permanently disable the monitoring alarm. A technician can eventually complete the removal of the sensor or relocate it.

Click on the sensor button. In the Alarm Settings tab, select Disable Alarm Permanently. Click OK to save the changes. The sensor button will be displayed in light blue to show that monitoring has been disabled.

The screenshot shows the 'Sensor Information - Sys1a' window with the 'Alarm Settings' tab selected. At the top, there are tabs for 'Details', 'Alarm Settings', 'Hardware', and 'Graph & Log'. To the right of these tabs is a status indicator: a green circle next to 'Status: Normal' and a 'Value: -0.3 °C'. Below the tabs, the 'Alarm Activation' section shows 'Enabled'. Under 'Change Alarm Activation', three radio buttons are present: 'Disable Alarm Permanently' (which is selected), 'Disable Alarm Temporarily', and 'Enable Alarm'. Below this is the 'Alarm Set 1' section, which includes a 'Pick Defined Alarm Settings' button with a folder icon. The 'Alarm Set 1' details are as follows:

Description	Dairy Case
High Limit	8.0 °C
Optimal Value	0.0 °C
Low Limit	-5.0 °C
Alarm Set Time	01 h 30 m
Alarm Recall Time	00 h 01 m
Alarm Relay	Case
Alarm Priority	Medium

At the bottom right of the window are three buttons: 'OK' (with a green checkmark), 'Cancel' (with a red X), and 'Delete' (with a trash can icon).

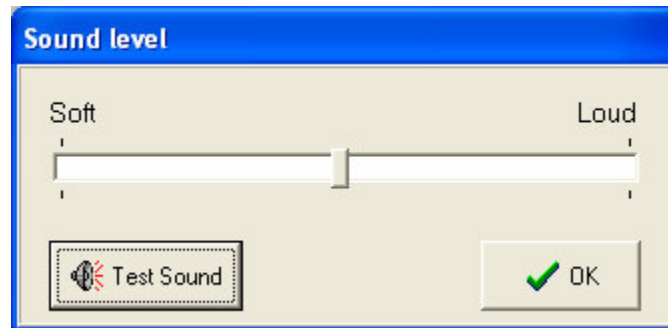
In the view where the sensor appears, the green circle is replaced with a light blue circle.

3.5.3 Turning Off the Computer Sound

If you do not wish to acknowledge the alarm immediately and the audio signal disturbs you, select **Options – Sound Off** on the Main menu. If a new alarm is triggered, the audio signal will sound again automatically. Don't forget to take the necessary steps and to acknowledge the alarm.

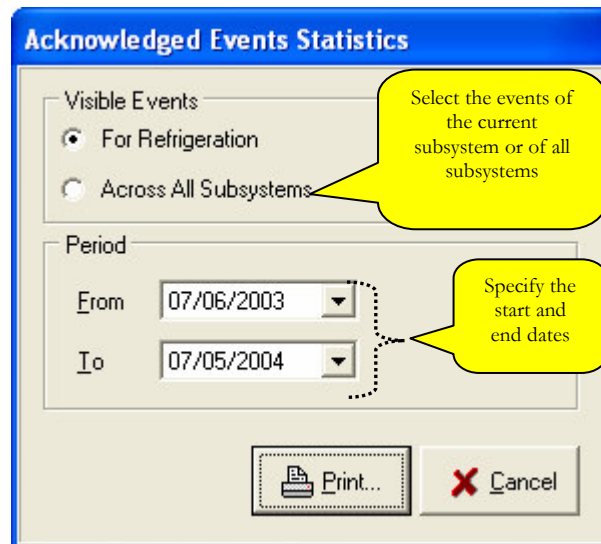
3.5.4 Adjusting the Sound Level

The sound level can be adjusted to suit your work environment. On the Main menu, select **Options – Sound Level**. Adjust the sound level and save your changes. MT Alliance will store your sound level preference in memory until you change it.



3.6 Alarm Statistics Report

You can easily compile the number of alarms reported during a given period. First, select the appropriate subsystem. Then, select **Events – Acknowledged Events Statistics** on the Main menu.



Acknowledged events outside of the specified period will not be included in the report. Click the Print button to preview the report on screen. This report includes the total number of alarms for each sensor during a specific period and for a given subsystem. For example, you can identify the refrigerated cases that give you the most grief immediately. A supermarket chain can thus track the stores that generate the most alarms.

Acknowledged Events Statistics Report Preview

MT Alliance
Version 4.1

ACKNOWLEDGED EVENTS STATISTICS
FROM 07/06/2003 TO 07/05/2004 FOR REFRIGERATION

Firm : John Smith Supermarket
Address : 1001 Des Laurentides, Laval, Qc
Owner : John Smith
Chain :

Independent
THE INDEPENDENT PEOPLE

<u>Source</u>	<u>View</u>	<u>Events</u>
Sensor Alarms		
2, Freezer Door	MY STORE	16
CR5, Food Freezer	MY STORE	2
CT1, Brocoli	Station 2	1
DT 2, Produce Case	MY STORE	21
DT1, Produce Case	Station 2	8
DT4-1, Cheese Case	Station 2	15
DT4-2, Cheese Case	Station 2	22
DT4-3, Cheese Case	Station 2	13
Total		98
Object Alarms		
Secondary Cooling, Flow Status	Sec. Cooling	8
Secondary Cooling, Freeze Status 1	Sec. Cooling	8
Secondary Cooling, Freeze Status 2	Sec. Cooling	8
Total		24
Custom Node Test Failed		

Zoom 112 % Page 1 of 1 Print Setup... Print OK

3.6.1 Viewing All Active Alarms

When more than three events are active in the Recent Events List, you can print them all by selecting **Events – Active Events** in the Main menu.

Active Events Report Preview

MT Alliance
Version 4.1

ACTIVE EVENTS

Firm : John Smith Supermarket
Address : 1001 Des Laurentides, Laval, Qc
Owner : John Smith
Chain :

Independent
THE INDEPENDENT PEOPLE

<u>Date/Time</u> <u>Description</u>	<u>Priority</u> <u>Event</u>	<u>Source</u> <u>Alarm Relay</u>	<u>View</u> <u>Subsystem</u>
07/01/2004 17:56:52 Temperature	High Alarm	Secondary Cooling, Freeze Status 2	Sec. Cooling Refrigeration
07/01/2004 17:56:52 No Flow	High Alarm	Secondary Cooling, Flow Status	Sec. Cooling Refrigeration
07/01/2004 17:57:36 Temperature too high	Medium Alarm	Sys-2, Ice Cream Case Case	Main Refrigeration
07/01/2004 16:57:54 Temperature too high	Medium Alarm	Sys1a, Dairy Case Case	
07/01/2004 17:57:24 Temperature too low	Low Alarm	RTU, Return Air Temper	

Total of Active Events : 5

Number of active events

Zoom 112 % Page 1 of 1 Print Setup... Print OK

3.6.2 Reviewing Acknowledged Alarms



From the Main menu, select **Events – Acknowledged Events** or click the green check on the toolbar to display the Acknowledged Events window.

By default, the most recently acknowledged events are displayed at the top of the list. By clicking on certain column headers, you can sort the contents of this list by ascending or descending order. For example, to find all the alarms acknowledged by a specific user, click on the Acknowledged by column header or on the Sort By button.

The screenshot shows the 'Acknowledged Events' window with a table of events and a right-hand control panel. Callouts provide instructions on how to use the interface:

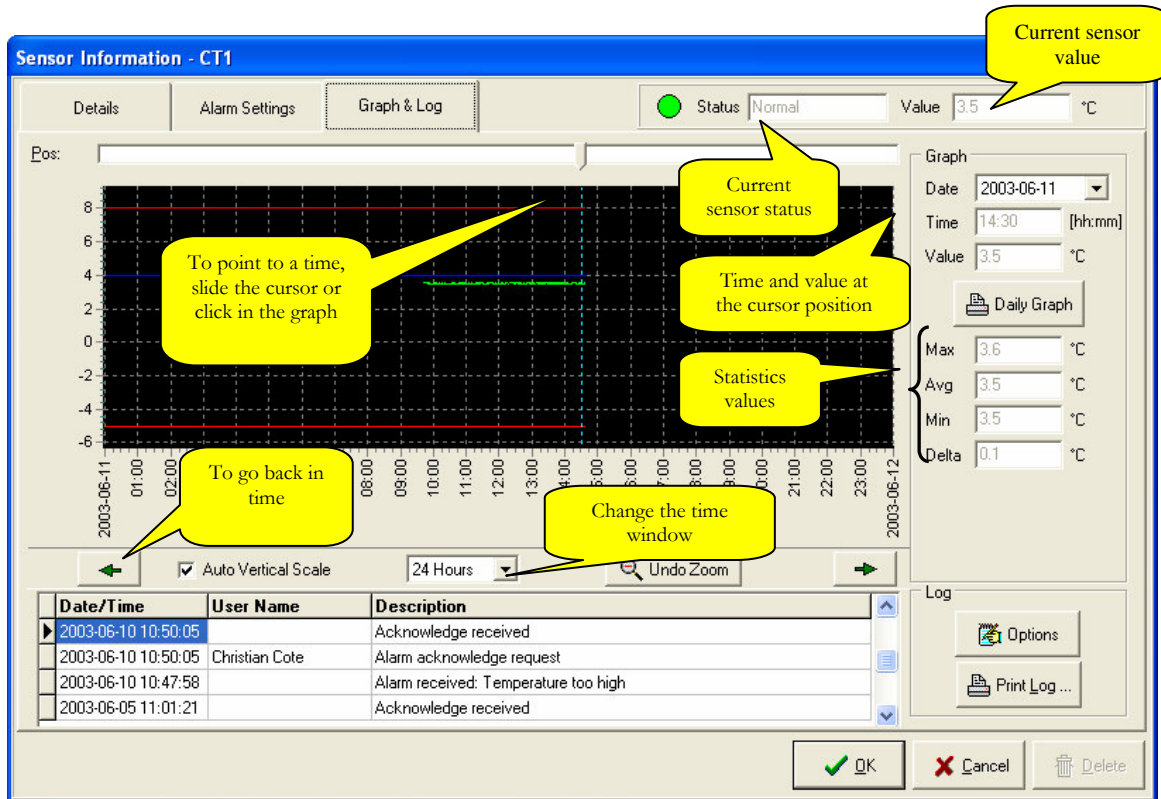
- Select the sort order:** Points to the 'Sort By' dropdown menu in the right panel.
- Select the period to restrict the contents of the list:** Points to the 'Period' section with 'From' and 'To' date pickers.
- Print what you have chosen to view:** Points to the 'Print...' button.

Priority	Date/Time	Event Source	Event Description	Acknowledged by	At Date/Time
High	07/01/2004 17:56:55	Secondary Cooling, Freeze Status	Temperature	John Smith dir	07/05/2004 16:56:55
Low	06/30/2004 20:59:43	RTU, Return Air Temperature	Temperature too low	Tracy Adcock (TECH)	07/01/2004 16:56:55
High	06/30/2004 20:59:19	Secondary Cooling, Freeze Status	Temperature	Tracy Adcock (TECH)	07/01/2004 16:56:55
High	06/30/2004 20:59:18	Secondary Cooling, Flow Status	No Flow	Tracy Adcock (TECH)	07/01/2004 16:56:55
High	06/30/2004 20:59:18	Secondary Cooling, Freeze Status	Temperature	Tracy Adcock (TECH)	07/01/2004 16:56:55
Medium	06/30/2004 20:00:02	Sys-2, Ice Cream Case	Temperature too high	Tracy Adcock (TECH)	07/01/2004 16:56:55
Medium	06/30/2004 20:00:59	Sys1a, Dairy Case	Temperature too high	Tracy Adcock (TECH)	07/01/2004 16:56:55
High	06/30/2004 11:54:15	Secondary Cooling, Freeze Status	Temperature	John Smith dir	06/30/2004 10:54:17
High	06/30/2004 11:54:14	Secondary Cooling, Flow Status	No Flow	John Smith dir	06/30/2004 10:54:16
High	06/30/2004 11:54:14	Secondary Cooling, Freeze Status	Temperature	John Smith dir	06/30/2004 10:54:17
Medium	06/30/2004 10:55:30	Sys-2, Ice Cream Case	Temperature too high	John Smith dir	06/30/2004 10:54:16
Low	06/29/2004 22:18:16	RTU, Return Air Temperature	Temperature too low	John Smith dir	06/30/2004 10:54:16
High	06/29/2004 22:17:49	Secondary Cooling, Freeze Status	Temperature	John Smith dir	06/30/2004 10:54:16
High	06/29/2004 22:17:42	Secondary Cooling, Flow Status	No Flow	John Smith dir	06/30/2004 10:54:16
High	06/29/2004 22:17:30	Secondary Cooling, Freeze Status	Temperature	John Smith dir	06/30/2004 10:54:16
High	06/29/2004 16:18:49	Secondary Cooling, Flow Status	No Flow	Tracy Adcock (TECH)	06/29/2004 21:17:43
High	06/29/2004 16:18:49	Secondary Cooling, Freeze Status	Temperature	Tracy Adcock (TECH)	06/29/2004 21:17:32
High	06/29/2004 16:18:48	Secondary Cooling, Freeze Status	Temperature	Tracy Adcock (TECH)	06/29/2004 21:17:50
Low	06/29/2004 16:18:18	RTU, Return Air Temperature	Temperature too low	Tracy Adcock (TECH)	06/29/2004 21:18:02
Medium	06/29/2004 15:27:03	Sys-2, Ice Cream Case	Temperature too high	John Smith dir	06/30/2004 10:54:16
Low	06/29/2004 11:34:17	RTU, Return Air Temperature	Temperature too low	Tracy Adcock (TECH)	06/29/2004 15:18:02
High	06/29/2004 11:33:53	Secondary Cooling, Freeze Status	Temperature	Tracy Adcock (TECH)	06/29/2004 15:18:51
High	06/29/2004 11:33:52	Secondary Cooling, Flow Status	No Flow	Tracy Adcock (TECH)	06/29/2004 15:18:50

By selecting an event on the list and clicking the Information button, you will have instant access to the sensor graph, at the exact time when the event occurred.

3.7 Viewing A Sensor Graph

When an alarm is triggered, it can prove useful to view the sensor graph. To do so, select the alarm event in the Events List and click the Information button. Alternatively, you can click the sensor button directly. In the Graph & Log tab, the following information is displayed:



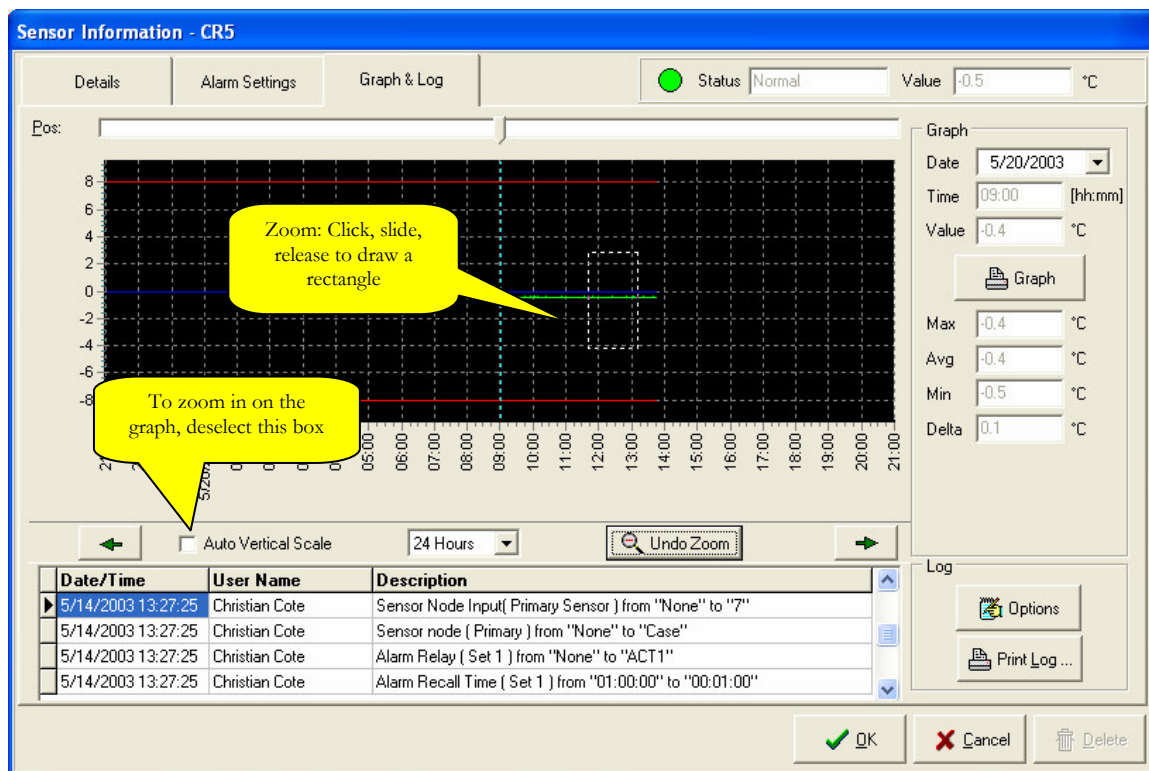
In the upper right corner, you can see the current sensor status. (Normal, In Alarm, Always Out of Bounds, etc.) You can also see the current value of the sensor (e.g.: 3.5°C). Time travelling is easy; just click on the arrow pointing left or right under the graph. Each click sends you travelling through time at twice the speed of the time interval currently displayed on the graph (e.g.: for a 24-hour period, you travel back 12 hours).

To view one day at a time, simply change the date of the graph in the upper right corner. You can move the cursor over the graph or click anywhere in the graph to position the cursor. The Time field will display the precise time of day where the cursor is located and the Value field will display the value of the sensor at that time. By clicking the **Graph** button, you can get a preview and print the information on screen.

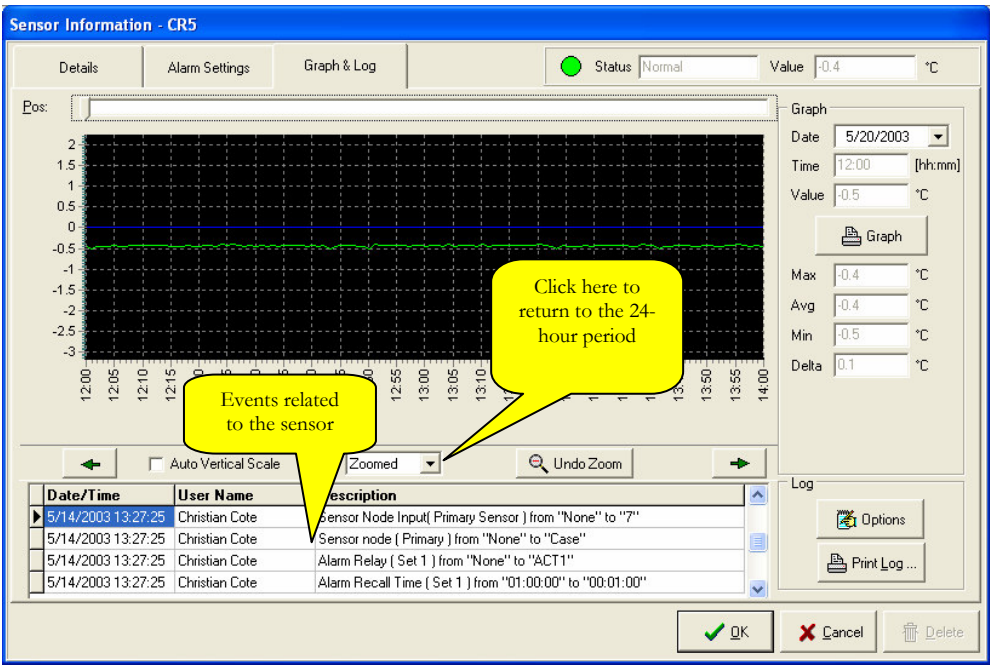
You will note that in addition to the sensor values, the alarm settings also appear on the graph. The High and Low limits are indicated in red lines. The optimal value is indicated by a dark blue line. Limit changes are also stored over time and you will see these lines adjusting on the graph as you change them.

The graph is colour-coded. A green light indicates a normal sensor status. A red line indicates a sensor in alarm. A yellow line indicates that the sensor remains out of bounds, even when the alarm is acknowledged. A light blue line indicates that monitoring has been disabled for this sensor. An absence of line indicates that the MT Alliance was not in operation.

To view less than 24 hours at a time, use the selection box under the graph. You can select 12 hours, six hours or two hours. The vertical scale, where the sensor values appear, is scaled automatically so that you may view them all at the same time. Disable the Auto Vertical Scale to zoom in on a section of the graph of special interest to you.

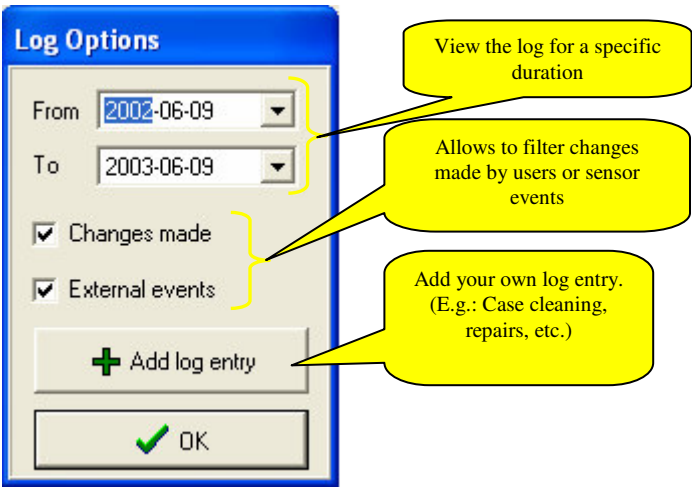


As shown previously, you can zoom in on a hot spot by clicking and sliding the mouse cursor to a second point of special interest. The final result displays as follows:



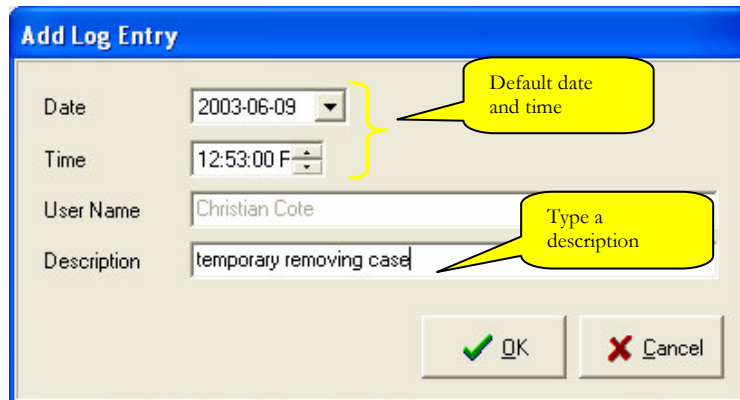
The **Undo Zoom** button returns you to the 24-hour period and all the sensor values will display for that time period.

The lower portion of the window displays the sensor operation log. This log contains all the changes you (or a technician) have made to the sensor, as well as internal events, such as alarms. The sensor log is always synchronized with the graph. If you click on a log event, the graph will automatically position itself on the precise time the event occurred. If you click at random on the graph, the sensor log will automatically position itself on the most recent event. Click the **Options** button to display the Log Options window.



If you select Changes, you will get all the changes made to the sensors by the users. If you select Events, you will also view external events, such as the sensor alarms.

Click Add Log Entry to add your own entry to the sensor log.

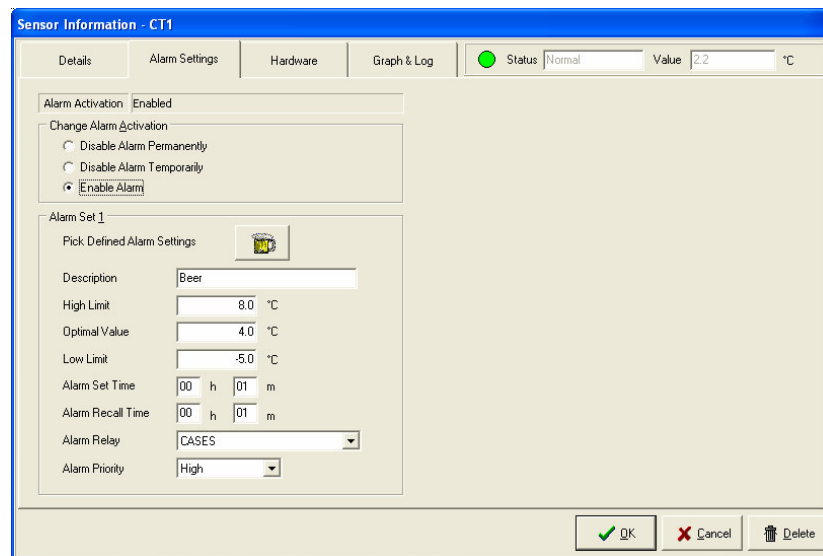


The 'Add Log Entry' dialog box has a blue title bar. It contains the following fields and controls:

- Date:** A dropdown menu showing '2003-06-09'. A yellow callout bubble points to it with the text 'Default date and time'.
- Time:** A time selection control showing '12:53:00 F'.
- User Name:** A text field containing 'Christian Cote'.
- Description:** A text field containing 'temporary removing case'. A yellow callout bubble points to it with the text 'Type a description'.
- Buttons:** At the bottom right, there are two buttons: 'OK' (with a green checkmark icon) and 'Cancel' (with a red X icon).

3.8 Viewing a Sensor Alarm Settings

To view the alarm settings for a given sensor, click on the sensor button. The Alarm Settings tab of the Sensor Information window displays:



The 'Sensor Information - CT1' window has a blue title bar and several tabs: 'Details', 'Alarm Settings', 'Hardware', and 'Graph & Log'. The 'Alarm Settings' tab is active. At the top right, there is a status indicator (green circle) labeled 'Status: Normal' and a 'Value: 2.2 °C'.

Under 'Alarm Activation', the status is 'Enabled'. Below this, there are three radio buttons for 'Change Alarm Activation': 'Disable Alarm Permanently', 'Disable Alarm Temporarily', and 'Enable Alarm' (which is selected).

Under 'Alarm Set 1', there is a section 'Pick Defined Alarm Settings' with a small icon. Below this, the following settings are displayed:

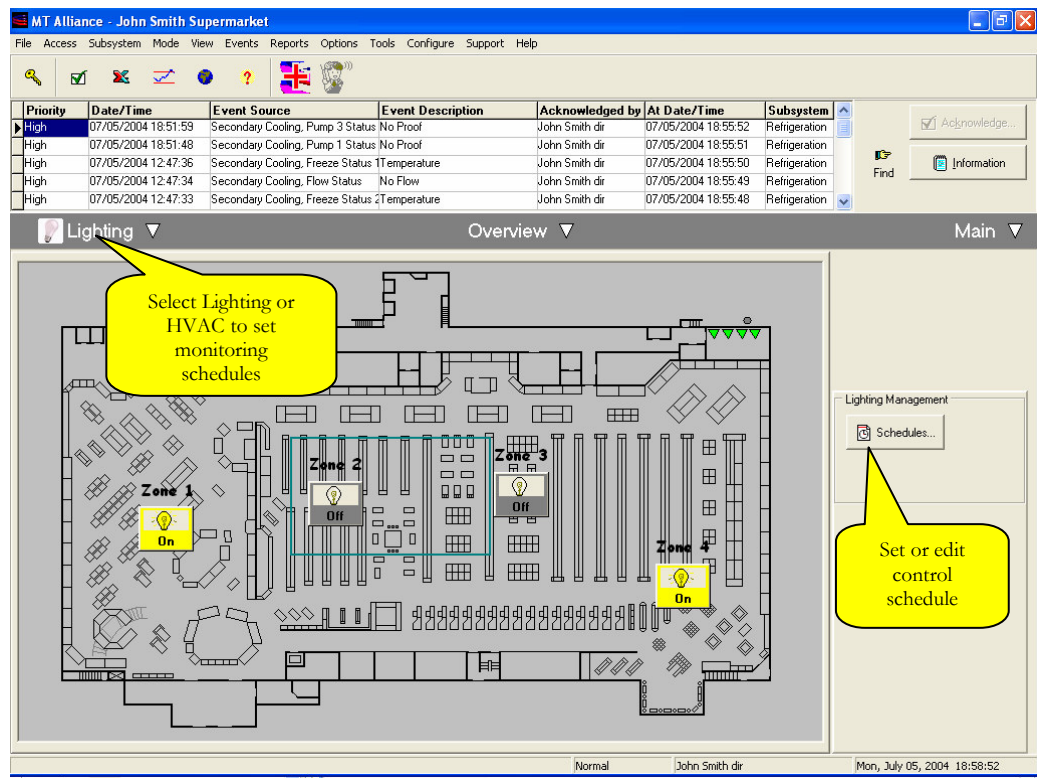
- Description:** Beer
- High Limit:** 8.0 °C
- Optimal Value:** 4.0 °C
- Low Limit:** -5.0 °C
- Alarm Set Time:** 00 h 01 m
- Alarm Recall Time:** 00 h 01 m
- Alarm Relay:** CASES
- Alarm Priority:** High

At the bottom right, there are three buttons: 'OK' (with a green checkmark icon), 'Cancel' (with a red X icon), and 'Delete' (with a trash can icon).

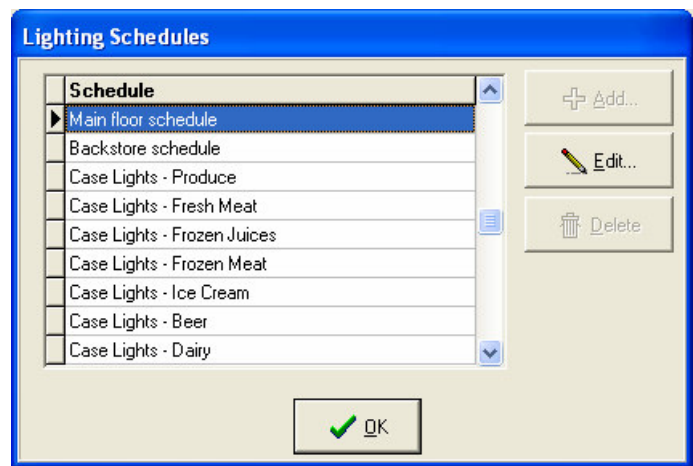
The current High Limit, the Optimal Value, the Low Limit, Alarm Set Time is displayed in this window. For detailed information on these settings, please see the Alarm Concepts section.

3.9 Editing HVAC or Lighting Control Schedules

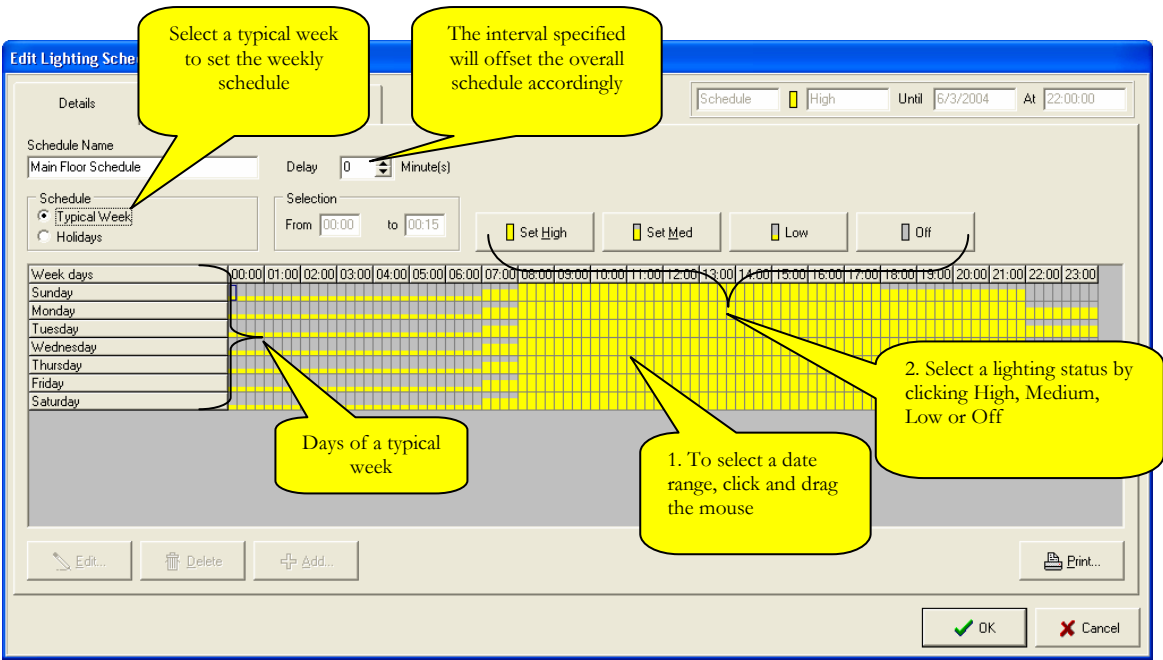
First, select the desired subsystem (HVAC or Lighting). Click the Schedules button in the HVAC/Lighting Management box on the right of the screen.



The HVAC or Lighting Schedules window will open. Select a schedule in the list and click Edit.

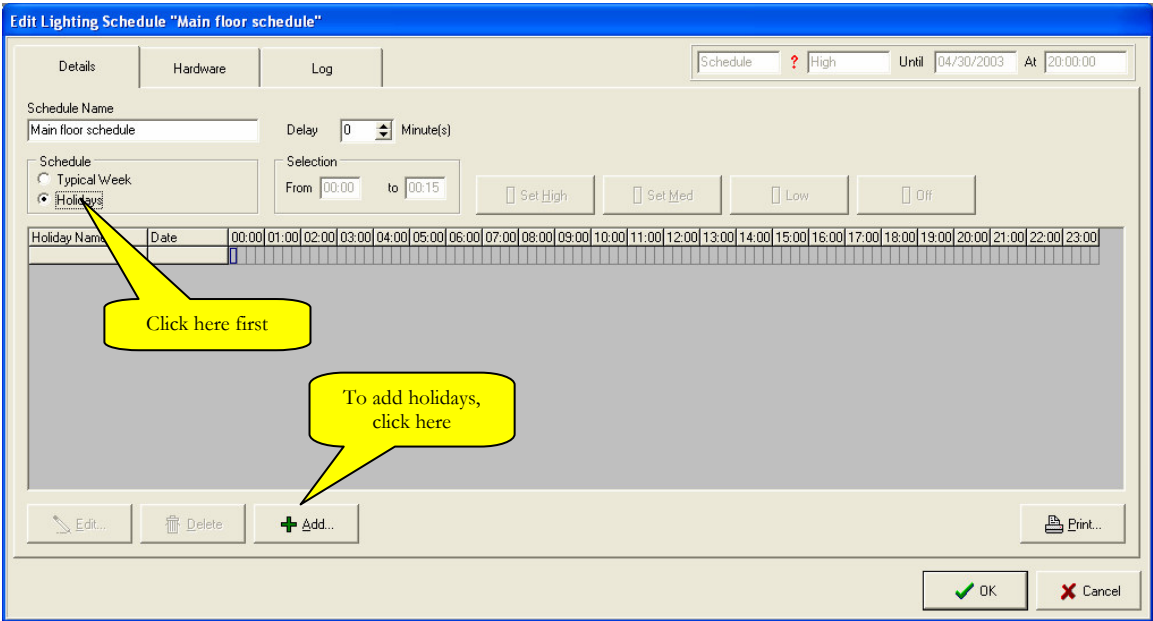


The Edit Lighting Schedules window will open on a typical week, as follows:



Select a date range by clicking and dragging the mouse. Select High, Med, Low or Off. If your site is equipped with a dual function lighting system (on/off only), selecting Medium or Low will correspond to High.

You can also set holidays affecting the schedule of a typical week. Select Holidays as follows:



To add holidays, make sure you have selected the Maintenance or Configuration mode before editing schedules. There are two types of holiday schedules: recurring holidays, that **repeat every** year or single holidays that occur **only on** a specific date (year, month/day). The **Only on** schedules have priority on **Repeat every** schedules. If you wish to add an annual holiday, select **Repeat every** and select the date.

Recurring holiday

The screenshot shows a dialog box titled "Edit 'New Year's Day' for Schedule 'Main Floor ...'". It contains a text field for "Holiday Name" with the value "New Year's Day". Below this are two radio button options: "Repeat every" and "Only on". The "Repeat every" option is selected, with a spinner set to "1" and a dropdown menu set to "January". The "Only on" option is unselected, with a date field showing "1/ 1/2005". At the bottom are "OK" and "Cancel" buttons.

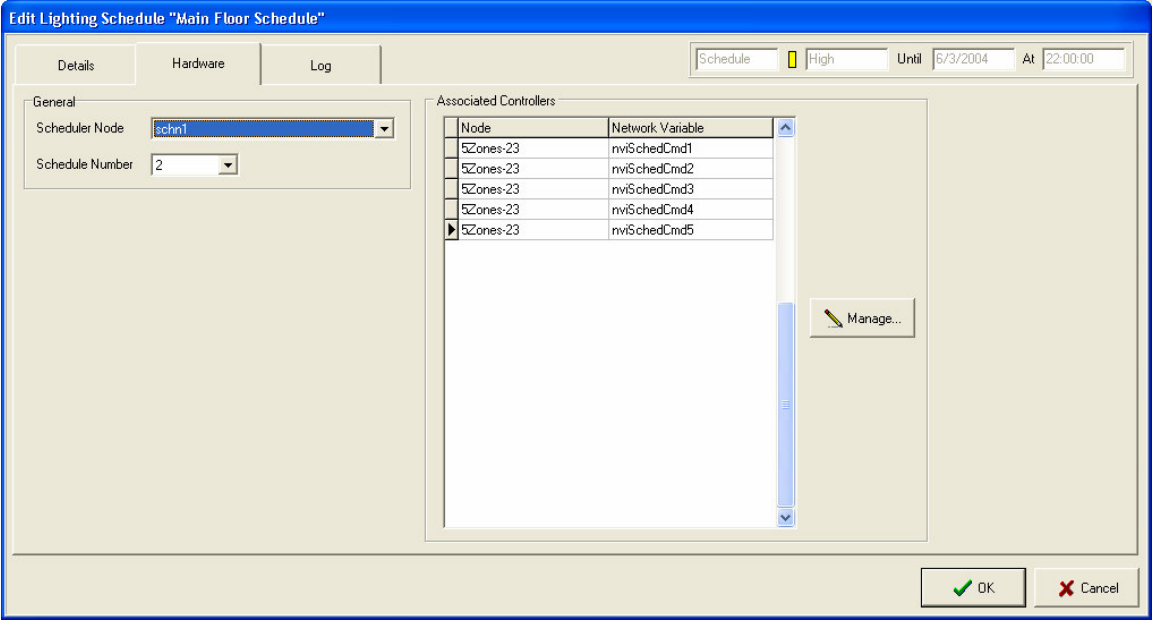
If you wish to run a holiday schedule only once, select **Only on** and choose a unique date. If you attempt to use a past date, it will not display in the window and the old date will be kept.

The screenshot shows a dialog box titled "Add New Holiday for Schedule 'Main Floor Sche...'". It contains a text field for "Holiday Name" with the value "Easter". Below this are two radio button options: "Repeat every" and "Only on". The "Repeat every" option is unselected, with a spinner set to "3" and a dropdown menu set to "June". The "Only on" option is selected, with a date field showing "4/10/2005". At the bottom are "OK" and "Cancel" buttons.

A new schedule will display especially for this date. Edit it as required as for the typical week.

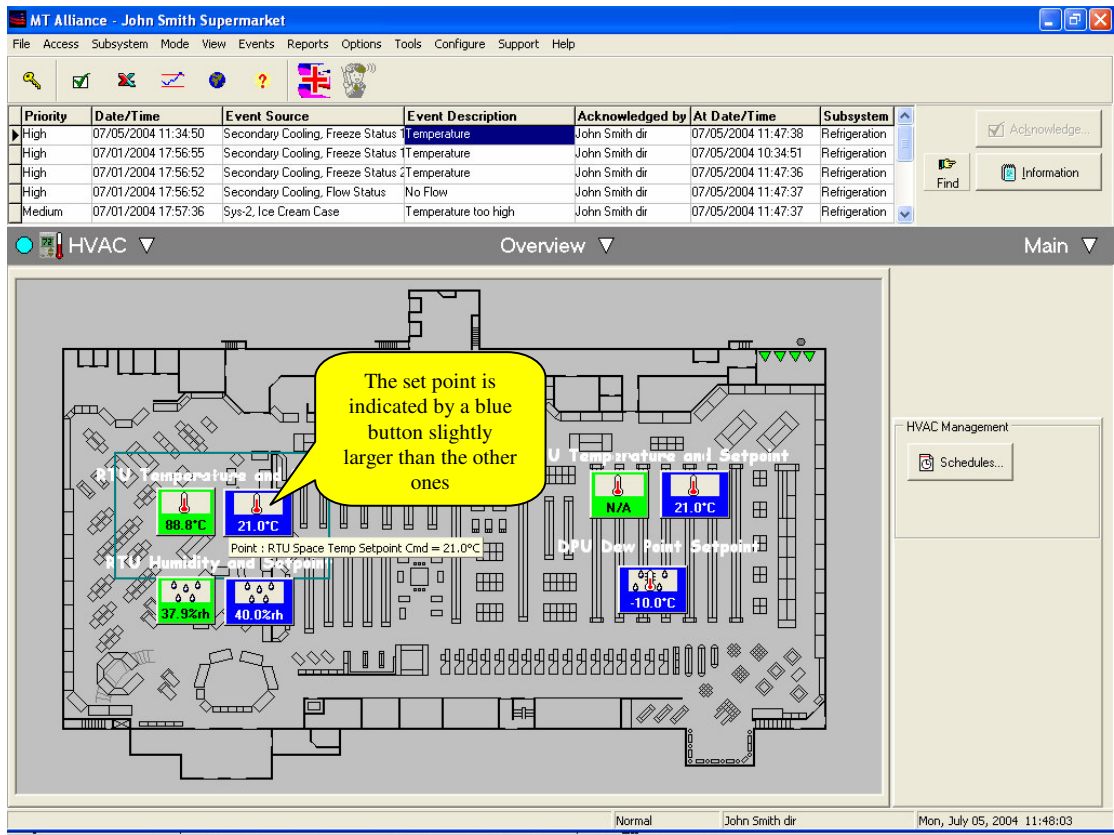
The screenshot shows the "Edit Lighting Schedule 'Main Floor Schedule'" window. It has tabs for "Details", "Hardware", and "Log". The "Details" tab is active, showing a "Schedule Name" field with "Main Floor Schedule", a "Delay" of "0" minutes, and a "Selection" section with a "From" time of "00:00" and a "to" time of "00:15". There are buttons for "Set High", "Set Med", "Low", and "Off". Below this is a table with columns for "Holiday Name" and "Date". The table lists "New Year's Day" on "01 Jan" and "Easter" on "10 Apr 2005". A yellow callout bubble points to the "Easter" entry with the text "If it is a recurring holiday, the year does not display". At the bottom are "Edit...", "Delete", "Add...", and "Print..." buttons, along with "OK" and "Cancel" buttons.

The Hardware tab allows you to see the various technical specifications of your lighting control schedule, such as the node that hosts the schedule and the connections between the schedule and the controlled lighting zone.

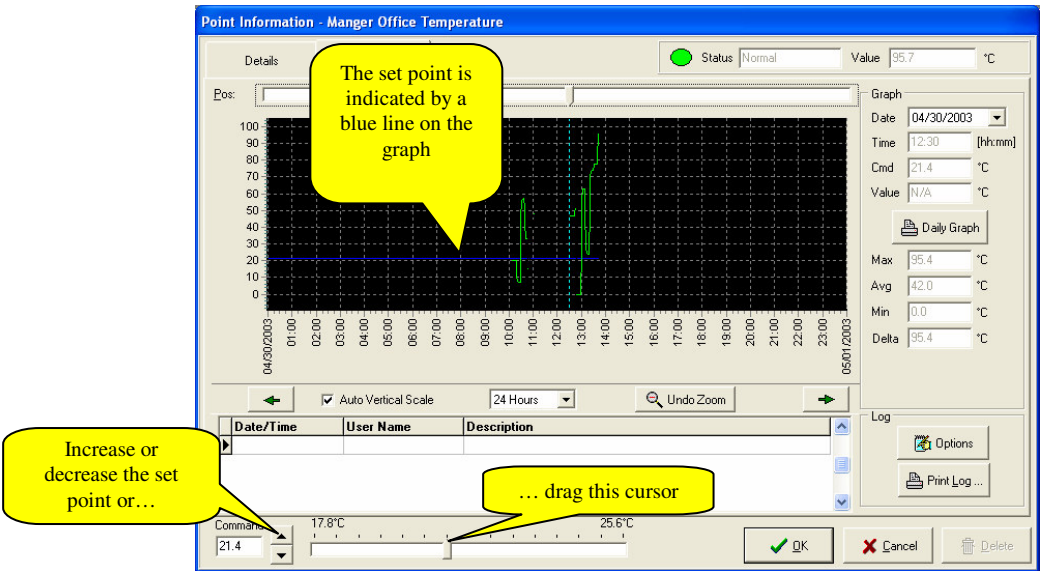


To set a new schedule for a section of your store, you must first enter the Configuration mode. This task is usually reserved for experienced lighting technicians. To implement the HVAC schedules, proceed exactly as for lighting, except that the HVAC schedule can only be Occupied or Unoccupied.

3.10 Setting the Temperature or the Humidity Level



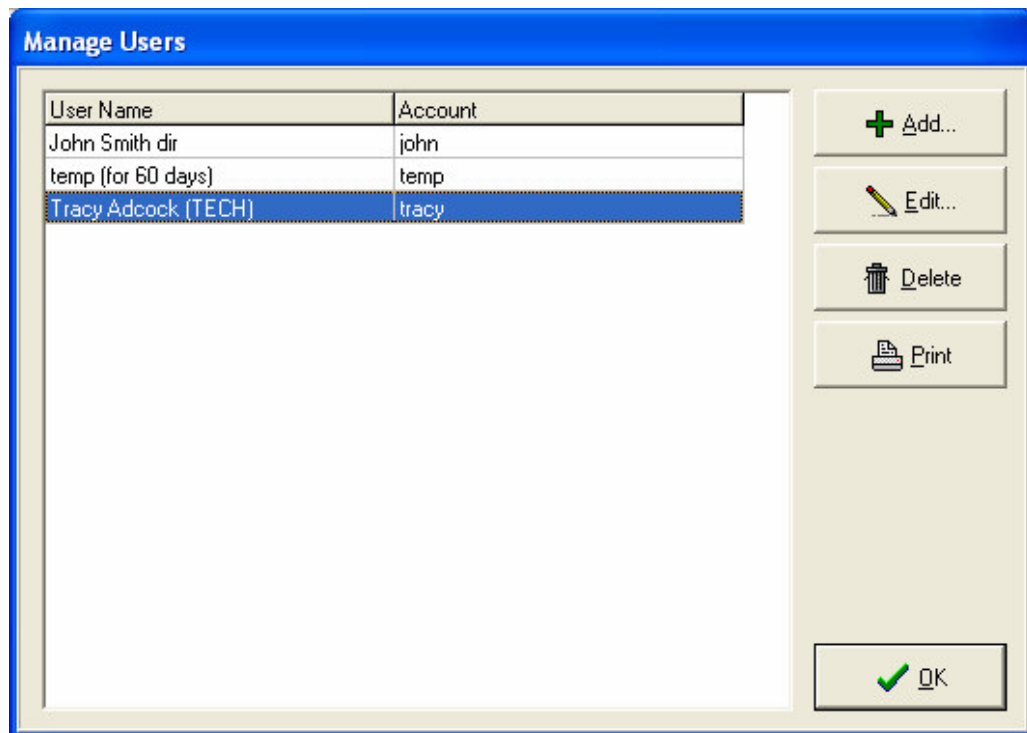
Click the HVAC control button. A window similar to the following will open.



Adjust the temperature or humidity level according to the desired value and click OK. The HVAC system will react immediately. However, certain programmed delays can postpone the activation or deactivation of some devices. Several minutes will elapse before the room temperature reaches the new set point. Be patient and avoid readjusting the settings repeatedly. The humidity level set point operates in exactly the same way. If you cannot access the set point editing features, you do not have the permission to do so.

3.11 Managing Users

From the Main menu, select **Access – Manage Users**. A list of users currently set up in your system will appear. This list allows you to view the User Name and Account of each user set up. Each user must have a unique User Name and Account. When you log in using your Account and Password, your User Name displays in the status bar at the bottom of the main window. Every action or change made within MT Alliance is saved under your User Name.



3.11.1 Adding a User

To add a user, click Add... The Add User window will open.

The image displays two side-by-side screenshots of the 'Add User' window. Both windows have a blue title bar and a light beige background. The fields are as follows:

- Full User Name:** James Woodbridge (Nordic Refr)
- Account:** JamesW
- New Password:** (masked with 'xxxxxx')
- Confirm Password:** (masked with 'xxxxxx')
- Account type:** Permanent (dropdown menu)

Below the fields are two tabs: 'User Permissions' and 'Technician Permissions'. The left window has 'User Permissions' selected, showing a list of permissions with checkboxes. A yellow callout bubble labeled 'Copy' points to the 'New Password' field. The right window has 'Technician Permissions' selected, showing a similar list of permissions. A yellow callout bubble labeled 'Paste' points to the 'New Password' field. At the bottom of each window are 'OK' and 'Cancel' buttons.

If you do not have permission to manage technicians, the Technician Permissions tab will be hidden. Give a User Name (family name and first name) to the new user. If two employees have the same name, add a distinctive mark to their names to distinguish them. Assign your new user to a unique Account (if it isn't unique, MT Alliance will tell you so). For external consultants, add to their name the name or acronym of the firm for whom they work. The Account can be made up of any character, except for the dollar (\$) sign. The Account is not case sensitive (a=A). Then, assign a Password to your user. You must enter the password a second time to confirm it.

By default, new users are set up as permanent type. If you elect to give a temporary type to one of your users, you can specify the exact date on which the user will be disabled and deleted from your user list.

In the User Permissions tab, you must specify what the new user will be authorized to do. Most permissions are self-explanatory. With the Change Site Information feature, the user can edit the information of this site, such as the store name, its address, etc. Avoid giving your users the Exit Alliance permission because when they exit Alliance, all data history collection processes are stopped. Technicians often have need of this information.

You can also copy a complete set of permissions from one user to another. Once you have copied a user's permissions with the Copy command, you can edit another user and click Paste to assign them the same set of permissions.

If you wish to grant a user the possibility to adjust set points related to HVAC temperature and humidity level, select the Change HVAC Setpoints permission. If you wish for a user to be able to override or edit lighting schedules, select Change Lighting Setpoints.

The Change Refrigeration Setpoints permission allows a user to adjust certain items, such as Suction Pressure Setpoints. It goes without saying that you should grant this permission only to a qualified refrigeration technician.

In the Technician Permissions tab, you can grant a user the permission to perform maintenance tasks in a particular subsystem. Permissions associated with maintenance should only be granted to experienced technicians. Access to the Maintenance mode allows the technician to adjust the control system settings.

In the same tab, you can also grant a user the permission to perform configuration tasks in a particular subsystem. Permissions associated with Configuration should always be granted to experienced system installers. Access to the Configuration mode allows the installer to add or delete electronic control modules.

The Configure Alliance and Connect Subsystems permissions should only be granted to technicians trained by Micro Thermo Technologies.

3.11.2 Editing a User

In the Manage Users window, select the User Name and Account you wish to edit and click Edit. When you access this new window, you can edit the User Name, the Password and the User and Technician permissions. Once you have completed all your changes, click OK to save them.

Edit Permissions

Full User Name: James Woodbridge

Account: jamesw

New Password: xxxxxxxx

Confirm Password: xxxxxxxx

Account type: Permanent

☐ ☐

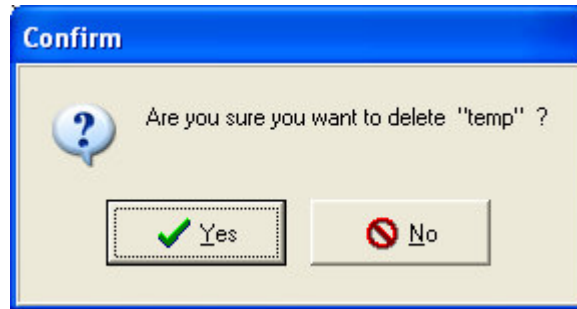
User Permissions Technician Permissions

- ☒ Manage Users
- ☒ Acknowledge Events
- ☒ Activate Alarm Monitoring
- ☒ Temporarily Deactivate Alarm Monitoring
- ☒ Permanently Deactivate Alarm Monitoring
- ☒ Change Site Information
- ☒ Use Excel Reports
- ☒ Exit Alliance
- ☒ Change Refrigeration Setpoints
- ☒ Change HVAC Setpoints
- ☒ Change Lighting Setpoints
- ☒ Change Energy Setpoints
- ☒ Change Other Subsystem Setpoints

☒ OK ☐ Cancel

3.11.3 Deleting a User

In the Manage Users window, select the user you would like to delete and click Delete. You can confirm or cancel the deletion.



3.11.4 Changing Your Password

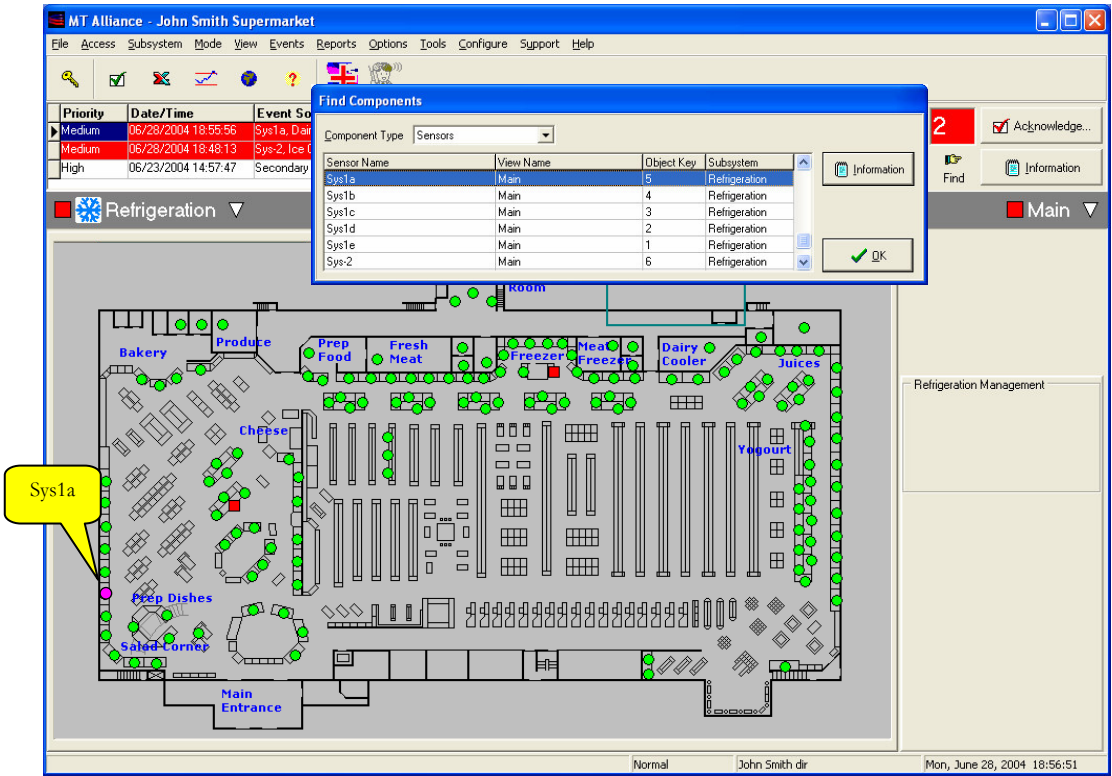
Even if you do not have permission to manage users, you can still change your password. To do so, from the Main menu, select **Access – Change Password**.



You must enter the old password and type your new password twice to confirm the change. Once you have completed all your changes, click OK to save them.

3.12 Finding a Component by its Name

MT Alliance contains a tool that can help you find a component (sensor, equipment, relay, etc.) and the subsystem where it is located. Select the appropriate subsystem, then click **Tools – Find Components** and select the type of component you are looking for from the list. MT Alliance will change views automatically. The selected component will be highlighted by changing colour in the site plan.

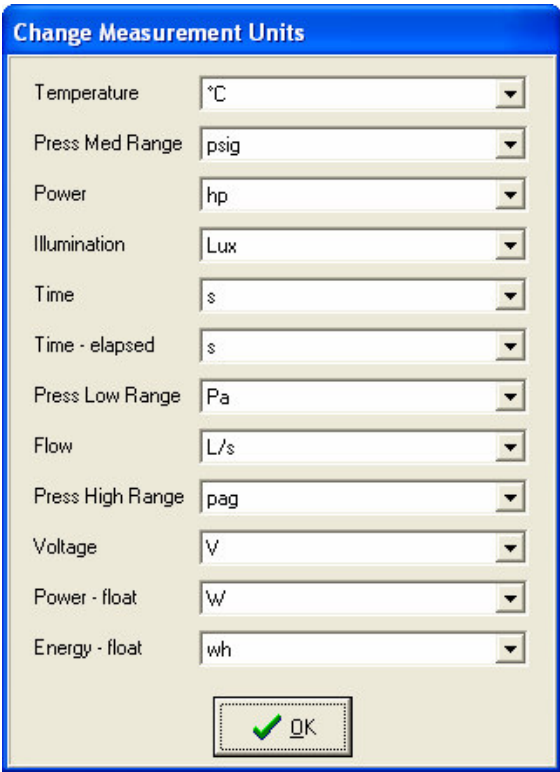


The list only contains components of the type selected and from the currently active subsystem. If you cannot find the component, you are probably not in the correct subsystem or mode. If you click on the Information button, the component Information window appears as if you had clicked on the component itself.

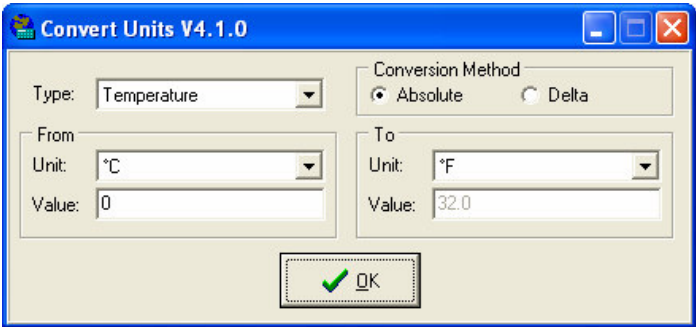
3.13 Changing Measuring Units



To change the measuring units for the temperature, pressure, etc., select **Options – Change Measure Units** in the Main menu or click on the globe in the toolbar. It may take a moment before all sensors display the new measuring unit. These units are saved until a user changes them again. Measures are automatically converted in reports and graphs.



To convert a written value without changing the measuring unit on the whole system, use the conversion utility in the Main menu, **Tools – Unit Conversions**.

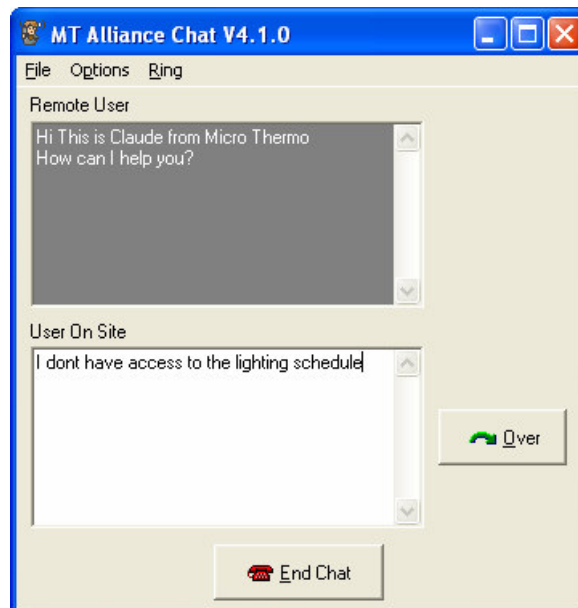


3.14 Chatting with Remote Support



On occasion, Technical Support or another division of our company connects via modem or Internet to assume remote control of the PC. To chat with the remote person when they are connected, select **Help – Chat** or click on the shortcut showing a boy using a walkie-talkie in the toolbar (if this option has been installed). A ringing tone will be heard when this utility is launched. If you hear this ring and there's no one at the PC, a remote user is probably asking for local assistance.

Just like CB radios, only one user at a time can write a message. The active user (white box) can write a message to the other user. When the message is complete, the active user returns control to the inactive user by clicking the Over button. The white box becomes greyed out and vice-versa. If you are the local user, you must type in the bottom box (User On Site). If it isn't white, it's not your turn yet. Don't forget to click Over when you are done. When you have completed your chat, you can quit the utility by closing it (End Chat or press X), but if you only wish to put the box aside to review the notes or resume the chat later, you can minimize it (_).

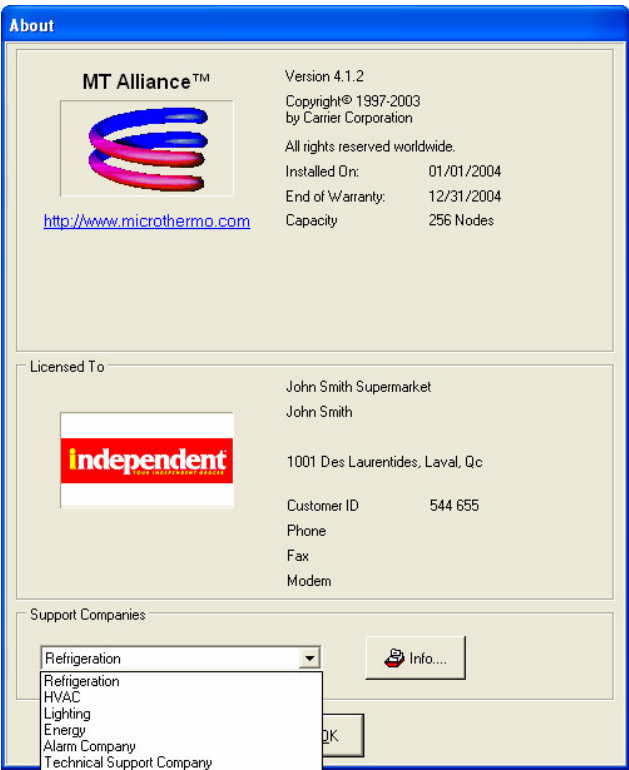


This utility works even if Support is not connected, but there won't be anyone to chat with you.

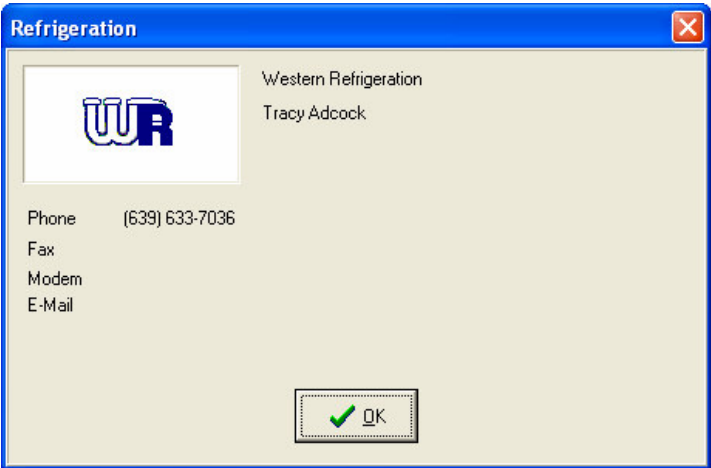
3.15 Reviewing the Site and Support Company Information



To find out which software version is being used and see the name and address of the client who owns the license, select **Help – About**.



To contact the Technical Support of a particular subsystem, you can get the information by selecting the subsystem and clicking on Infos... For example:

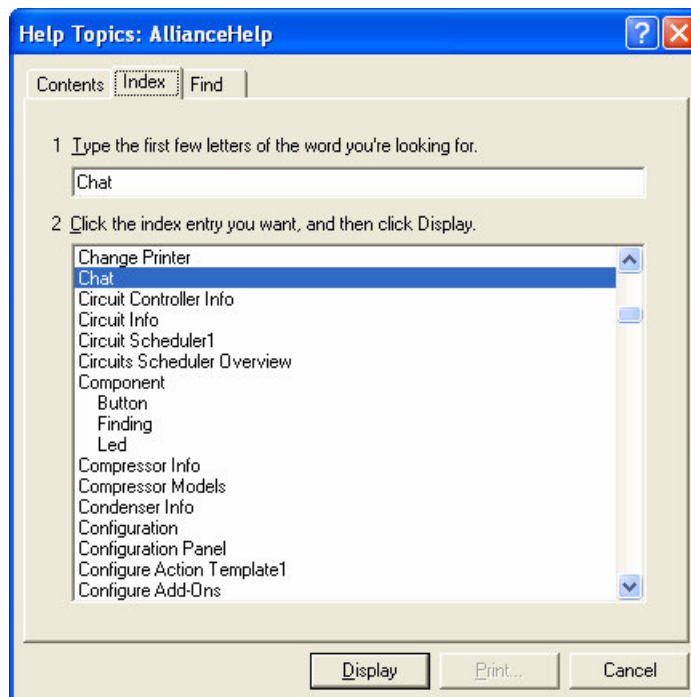


3.16 Online Help

If you are looking how to use a feature, consult the MT Alliance online for help. This Help is built into the software and you can search the information in three ways:

- by topic (Content)
- by alphabetical order of keywords (Index)
- by searching any term contained in the topic (not commonly used).

To use the built-in help, select **Help – Help Topics**.



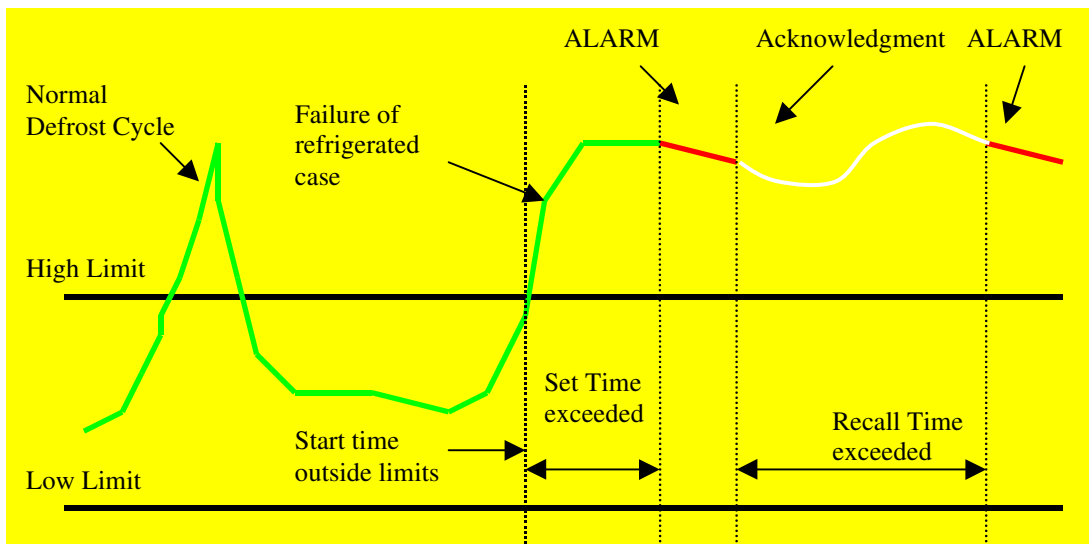
4. Alarm Concepts

It is vital to master alarm concepts to take proper action and make the best possible decision during a recurring alarm.

The MT Alliance information and control system uses predefined alarm settings for most types of food products. However, your site could have special requirements: that is why MT Alliance allows a technician to edit the predefined settings for a given sensor.

MT Alliance uses the following alarm pattern: each sensor has its own High and Low temperature limit. It also includes a set time period, a recall time as well as an alarm relay. If the sensor value is outside the limits for a period longer than that specified in Set Time, an alarm is triggered. The MT Alliance system will sound an alarm and display the sensor using a red square. The alarm relay associated with the sensor is enabled so that your local alarm service can notify you that an alarm was triggered. The alarm relay can also be connected to a blinking light, a buzzer or another display panel.

As for refrigerated cases, you should always select an alarm interval slightly longer than the typical defrost cycle. If you respond to the alarm within 10 to 15 minutes, you will have enough time to take action and prevent food spoilage (e.g.: by moving the products to another case).



A certain amount of time elapsed before you acknowledged the alarm. At the time of acknowledgement, the sensor value either returned within the specified limits (the problem has been solved) or remained outside of the specified limits (the problem persists).

If the problem no longer exists when you acknowledge the alarm, we strongly urge you review the sensor graph to determine the period during which the sensor value was outside the limits. In the case of a refrigerated case, this will allow you to assess the condition of your food products after this temperature variance. After the alarm is acknowledged, the sensor button takes the shape of a green circle and the MT Alliance system automatically reboots the alarm monitoring on this sensor.

If the problem persists when you acknowledge the alarm, take immediate steps to find its source (e.g.: is the fan working? Was a door left open too long?). After the alarm is acknowledged, the sensor button takes the shape of a yellow diamond if the sensor value remains outside of the alarm limits. When the sensor value falls within the limits, the sensor button takes the shape of a green circle and the MT Alliance system automatically reboots the alarm monitoring for this sensor.

If the problem persists on this unit and you believe you can solve it within the set time (usually one hour), acknowledge the alarm. From this moment, only two courses of action are available to you: either the sensor value will fall within the limits and the MT Alliance system will resume its alarm monitoring or the sensor value will remain outside of the limits long enough for the recall time to elapse, which will trigger the alarm again. This recall time (usually 60 minutes) protects you and shows you the step you took didn't solve the problem.

If you have reason to believe that you will need more than an hour to solve the problem, acknowledge the alarm, then click the yellow sensor button. Select the Alarm Settings tab and temporarily disable monitoring on that sensor. You should choose a realistic time interval. As soon as this interval expires, the MT Alliance system will automatically resume its monitoring.

If the sensor or the refrigerated case was deleted, you can also permanently disable monitoring. A service technician can eventually delete the button corresponding to the sensor.

5. Revision History

REV	Description	Révisé Par	Date
1.1	Document creation and formatting	CBC	05-jun-03
1.2	Start of document redaction	CBC	06-jun-03
1.3	Document update	CBC	09-jun-03
1.4	Document update (cont')	CBC	11-jun-03
1.5	Inclusion Addendum (Y. Roy)	CBC	11-jun-03
1.6	Document corrections and ToC update	CBC	13-jun-03
2.0	First release for revision	CBC	16-jun-03
2.1	Final revision	CBC / JRT	07-jul-03
2.2	New login procedure (Win XP)	CBC	07-jul-03
2.3	ToC revision	CBC	04-aug-03
3.0	Final revision for publication	CBC	13-nov-03
3.1	Revision (also from 71-GEN-0089) using standard TT template, for V4.1.4 updates	MAC	02-aug-04
3.2	Final Revision	JG	04-aug-04
4.0	Publication	JG	06-aug-04