



Refrigeration Controls



Customer Value

Micro Thermo's Refrigeration controllers are designed to interface with any type of refrigeration system.

MT controllers are engineered to enhance the operating efficiency of your refrigeration equipment ensuring accurate control of all temperature and pressure settings.

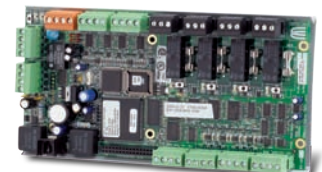
The hardware consists of intelligent boards, referred to as "nodes", that control and monitor all types of refrigeration equipment including compressors, condensers, refrigeration cases, suction groups, defrost refrigeration circuits, secondary coolant systems, subcoolers and anti-sweat and EEPR valves.

Each suction group, compressor, condenser and refrigeration circuit is easily configured using the MT Alliance™ Refrigeration software configuration tool. The tool creates a hierarchical view of each rack and simplifies installation, commissioning and operation. Various rack and store views display all critical operating data in a single screen. Data for all points is stored in a database for historical record.

Refrigeration Nodes



MT-Condenser



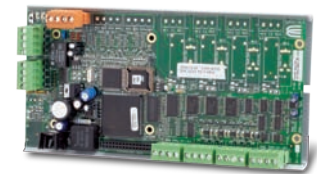
MT-Suction Group



MT-Circuit



MT-Compressor



MT-Sensor

Key Features and Benefits

- Seamless integration and control of all functions of all types of multi-compressor refrigeration systems
- Monitoring of key parameters to ensure safe operating conditions at all times
- Provides compressor sequencing to avoid unnecessary cycling and stagger runtime for longer life
- Multiple strategies for hot gas, off-time and electric defrost
- Visual point and click defrost scheduling to balance defrost cycles across all circuits
- Provision to easily add additional intelligent nodes as your equipment needs grow, without compromising overall system performance
- Easy to install, operate and maintain with reduced wiring requirements



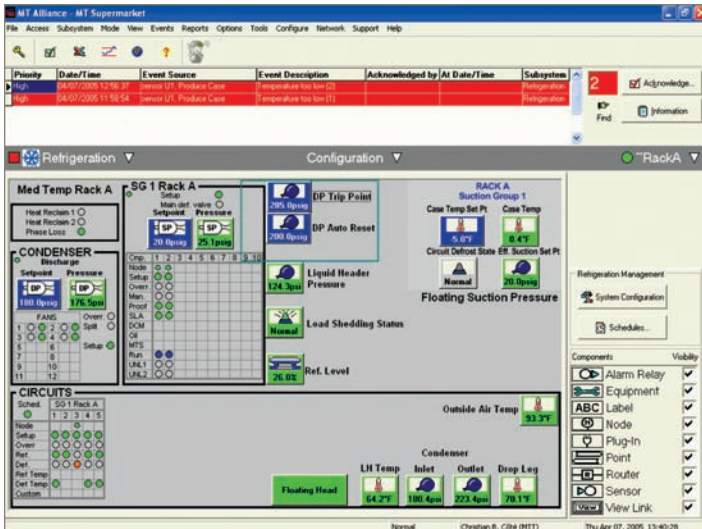
ENGINEERING YOUR SUCCESS.

Specifications

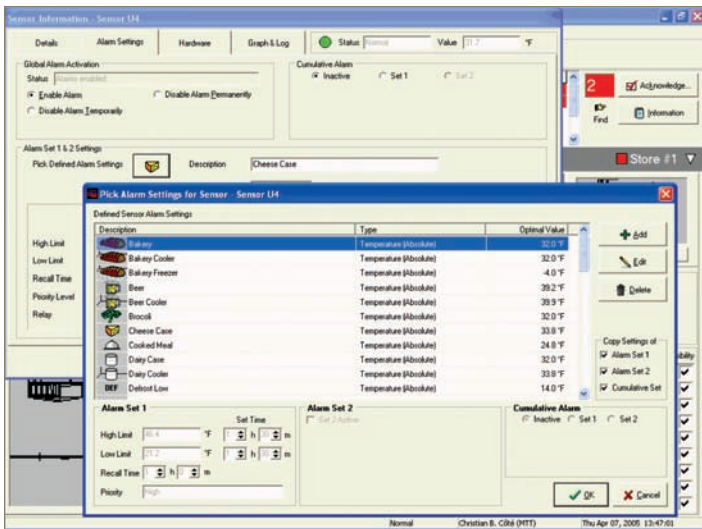
	MT-Compressor	MT-Condenser MT-504 / MT-508 / MT-512	MT-Circuit
Applications	Control of reciprocating, scroll and screw compressors. Support for up to (2) unloaders per compressor	Control of condensers with 4, 8 or 12 fans (more with pairs)	Control of up to (5) refrigeration circuits using hot gas, off time or electric defrost
Universal Inputs	None	8 Universal Inputs (Analog or Digital): 0-5V, 0-10V, 4-20mA, 10K Thermistor Low-pass filter input conditioning	None
Digital Inputs	3 Digital Inputs: (Dry contacts): Low Pressure Switch, Safety Line Switch, Proof of Running Switch	0/4/8 Digital Inputs: Optically Isolated (0-15V)	None
Digital Outputs	2 Type C Relay Outputs: SPDT, 2A, 250 Vac. Protected by on-board circuit breaker	4/8/12 Type C Relay Outputs: SPDT, 2A, 250 Vac. Protected by on-board fuses	10 Type C Relay Outputs: SPDT, 2A, 250 Vac. Protected by on-board fuses
Local Status/ Switching	LEDs: Power, Auto, Proof-of-running, Alarm, Run Switch: Auto, Off, Manual On	LEDs: Power, Relay Status	Optional: LEDs: Refrigeration and Defrost Switch: Auto, Off, Manual On
Analog Outputs	None	4 Analog Outputs configurable: 4-20 mA, 0-5V, 0-10V, 2-10V Protected by current limit (max 20 mA)	None
Dimensions	7.44" x 4.0" x 3.0" (w/Unloader) (189mm x 102mm x 38mm) (w/Unloader)	MT 504: 8.0" x 4.0" x 1.5" (204mm x 102mm x 38mm) MT 508: 12.25" x 4.0" x 1.5" (312mm x 102mm x 38mm) MT 512: 16.375" x 4.0" x 1.5" (416mm x 102mm x 38mm)	12.50" x 4.00" x 1.25" (318mm x 102mm x 32mm) 12.50" x 4.00" x 2.25" with Display (318mm x 102mm x 42mm)
Mounting	Panel Mounting Vertically	SnapTrak Panel or Wall Mounting	SnapTrak Panel or Wall Mounting
Electrical	24 Vac Center-tap Transformer 5VA	MT 504: 24 Vac Center-tap Transformer 12VA MT 508: 24 Vac Center-tap Transformer 15VA MT 512: 24 Vac Center-tap Transformer 20VA	24 Vac Center-tap Transformer 10VA
Environmental	Operating and Storage: -40 – 168°C (-40 – 75°F) 5 to 95% RH, non-condensing	Operating and Storage: -40 – 168°C (-40 – 75°F) 5 to 95% RH, non-condensing	Operating and Storage: -40 – 168°C (-40 – 75°F) 5 to 95% RH, non-condensing
Listings	UL Listed, CSA Approved	UL Listed, CSA Approved	UL Listed, CSA Approved

Specifications

MT-Suction Group Controller	MT-Sensor Node	MT-Subcooling	MT-AntiSweat Controller
Control of suction group and monitoring and dynamic staging of compressors	Configurable sensor node to monitor temperature, humidity, pressure and other sensor types	Control of Condensor subcooling and control of 2 Mechanical Subcoolers	MT Alliance Compatible or Standalone Controller. Can control Power DriverUnit with a maximum of 24 AntiSweat circuit heaters
8 Universal Inputs (Analog or Digital): 0-5V, 0-10V, 4-20 mA, Thermistor, Low-pass filter input conditioning	8 Universal Inputs (Analog or Digital): 0-5V, 0-10V, 4-20 mA, Thermistor, Low-pass filter input conditioning	8 Universal Inputs (Analog or Digital): 0-5V, 0-10V, 4-20mA, Thermistor, Low-pass filter input conditioning	2 Analog Inputs: 10K Thermistor (Temperature), 0-5V (Humidity) Low-pass filter input conditioning
None	None	None	None
4 Type C Relay Outputs: SPDT, 2A, 250 Vac. Protected by on-board fuses	None	8 Type C Relay Outputs: SPDT, 2A, 250 Vac. Protected by on-board fuses	4 Outputs 20V @ 100 mA for external Power Driver Unit. Protected by on-board fuses 1 Local Alarm Relay
LEDs: Power, Relay Status	LEDs: Power	LEDs: Power, Relay Status	LEDs: Power, Bypass, Alarm, Heat Pulse Numerical Display: % Energy Saving Switch: Reset, Bypass, Clear Alarm
4 Analog Outputs configurable: 0-20 mA, 0-5V, 0-10V, 2-10V Protected by current limit (max 20 mA)	None	4 Analog Outputs configurable: 0-20 mA, 0-5V, 0-10V, 2-10V Protected by current limit (max 20 mA)	1 Analog Output 0-5V: % Energy Saving Protected by current limit (max 20 mA)
8.0" x 4.0" x 1.5" (204mm x 102mm x 38mm)	8.0" x 4.0" x 1.5" (204mm x 102mm x 38mm)	12.25" x 4.0" x 1.5" (312 mm x 102mm x 38mm)	6.5" x 4.0" x 1.5" (165mm x 102mm x 38mm)
SnapTrak Panel or Wall Mounting	SnapTrak Panel or Wall Mounting	SnapTrak Panel or Wall Mounting	SnapTrak Panel or Wall Mounting
24 Vac Center-tap Transformer 12VA	24 Vac Center-tap Transformer 12VA	24 Vac Center-tap Transformer 12VA	24 Vac Center-tap Transformer 10VA
Operating and Storage: -40 – 168°C (-40 – 75°F) 5 to 95% RH, non-condensing	Operating and Storage: -40 – 168°C (-40 – 75°F) 5 to 95% RH, non-condensing	Operating and Storage: -40 – 168°C (-40 – 75°F) 5 to 95% RH, non-condensing	Operating and Storage: -40 – 168°C (-40 – 75°F) 5 to 95% RH, non-condensing
UL Listed, CSA Approved	UL Listed, CSA Approved	UL Listed, CSA Approved	UL Listed, CSA Approved



You can view Refrigeration Rack operating conditions at a glance including setpoints, circuit, and compressor statuses.



Configuring Refrigeration Case alarm settings is simple and intuitive with MT Alliance's graphical user interface.

Supermarket Controls Solutions...Simply Powerful



MICRO THERMO
TECHNOLOGIES

Specifications subject to change without notice
MT Alliance™ is a trademark of Parker Hannifin Corporation
LonWorks® is a registered trademark of Echelon Corporation
Windows® is a registered trademark of Microsoft Corporation



Parker Hannifin Corporation
Sporlan Division
206 Lange Drive • Washington, MO 63090 USA
phone 636 239 1111
fax 636 239 9130
www.microthermo.com