MT-700 Monitoring Node

Supermarket Control Solutions

Installation and Operation Manual, Bulletin 100-50-10.2

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Introduction

The MT-700 Monitoring Node is an electronic controller dedicated to sensor input, monitoring and alarming.

MT-700 Monitoring Node

The Micro Thermo Technologies™ MT-700 Monitoring Node features 18 universal inputs—compatible with a wide range of sensor and signal types—for monitoring any point and process in a store. Advanced alarming includes two alarm sets plus a cumulative alarm, to ensure proper system operation and decrease product shrinkage.

The MT-700 is a part of the Micro Thermo Technologies monitoring and controls platform, and integrates into the MT Alliance™ software. Together, the MT-700 and Alliance provide enhanced visibility into any system within a store – whether it is real-time sensor status, historical graphing, or comprehensive change tracking, it's critical to have the right information to make the right decisions.

Key Features

- Advanced alarming, including 2 alarm sets plus cumulative alarm
- Easy set up and at-a-glance status through Windows® interface
- Quickly disable alarms during maintenance, with automatic reactivation
- View historical performance, with readings every minute for 5 years
- Integrate existing sensors into MT Alliance™ for improved visibility

Installing the Controller

Requirements

Hardware:

- MT-722A Module
- MT-716U Module
- Up to 18 sensors
- Eight #6 screws for wall mounting
- DIN Rail with two #6 screws for mounting (if not wall mounted)
- 18 AWG 7/26 stranded, unshielded twisted pair network cable (Belden 8461 or equivalent)

Software:

- MT Alliance, Version 7.2.2 or higher

Tools:

- Phillips and Flat screwdrivers
- Small Flat screwdriver for terminal connections
- Wire cutters / strippers

Hardware Installation

Mounting the MT-700 Monitoring Node

The MT-700 Monitoring Node should be installed only by a qualified professional. There are no user-serviceable components inside the MT-700. To ensure safety and proper operation, the case should not be opened at any time.

The MT-700 Monitoring Node has two mounting options: DIN rail; or Direct Mounting by the eight screw holes (four per controller module).

For DIN Rail Mounting:

Hold the DIN rail horizontally in the desired location. Attach the two controller modules to the rail separately, with the MT-722A to the left of the MT-716U as pictured. Ensure the controllers' communication ports are correctly aligned, and gently slide the units together until the plastic housings are flush.

For Direct Mounting:

The controller modules must be mounted one at a time. Start by securing the MT-722A Controller module in place using four #6 screws. Place the MT-716U to the right of the MT-722A; align the controllers' communication ports, and gently push the units together until the plastic housings are flush. Secure the second module in place using four #6 screws.

Wiring the MT-700 Monitoring Node

For proper operation, the MT-700 Monitoring Node requires the power supply and LonWorks® network be connected. Up to (18) sensors can be connected for monitoring and alarming. Refer to the wiring diagram on the following page and instructions supplied with the sensor for proper wiring connections.

Note: All connections should be made with the controller powered off.

Micro Thermo Technologies™ supplied sensors should be connected as follows:

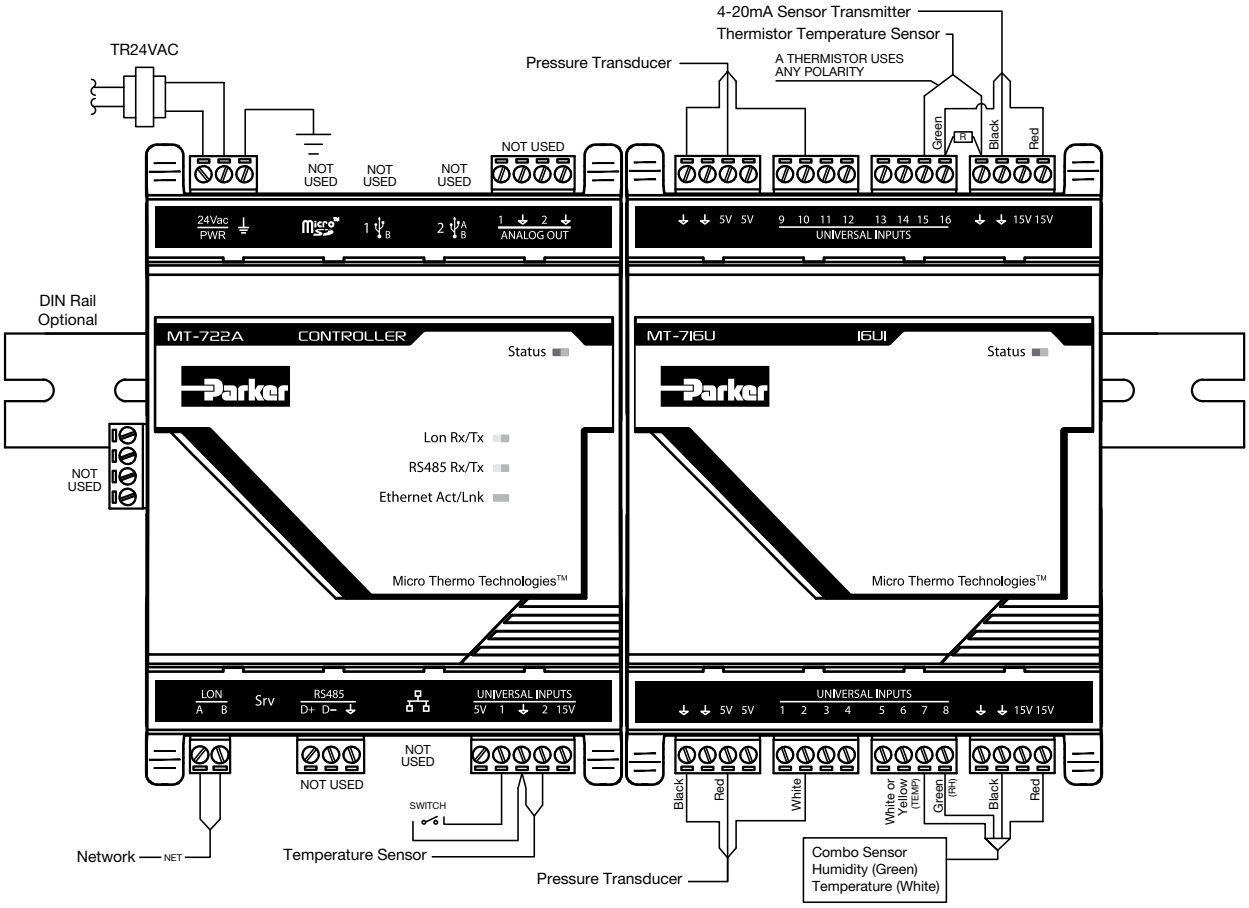
- **Temperature Sensors:** Connect one lead to Signal Common ⏚; connect the other lead to the desired Universal Input (UI). *Temperature sensors are not polarized.*
- **Pressure Transducers:** Connect the Red lead to controller's five volt supply (5V); connect the Black lead to Signal Common ⏚; connect the Green lead to the desired Universal Input (UI).

Wiring the MT-700 Monitoring Node *(cont.)*

- **Humidity Sensors:** Connect the Red lead to the controller's fifteen volt supply (15V); connect the Black lead to Signal Common ⏚; connect the Green lead to the desired Universal Input (UI).
- **Switch:** Connect one lead to Signal Common ⏚; connect the other lead to the desired Universal Input (UI). Switches are not polarized.

For all other sensor types, refer to the instructions supplied with the sensor for proper wiring.

Observe all local electrical codes. Use caution when working around high voltage components.



Basic Setup

Initial Controller Setup

Getting Started

In order to complete the setup, the installer needs the correct permissions to access the Configuration mode of the Subsystem in which the controller is being installed.

With the controller wired and powered on, the MT-700 controller must now be installed through MT Alliance™. Complete the following:

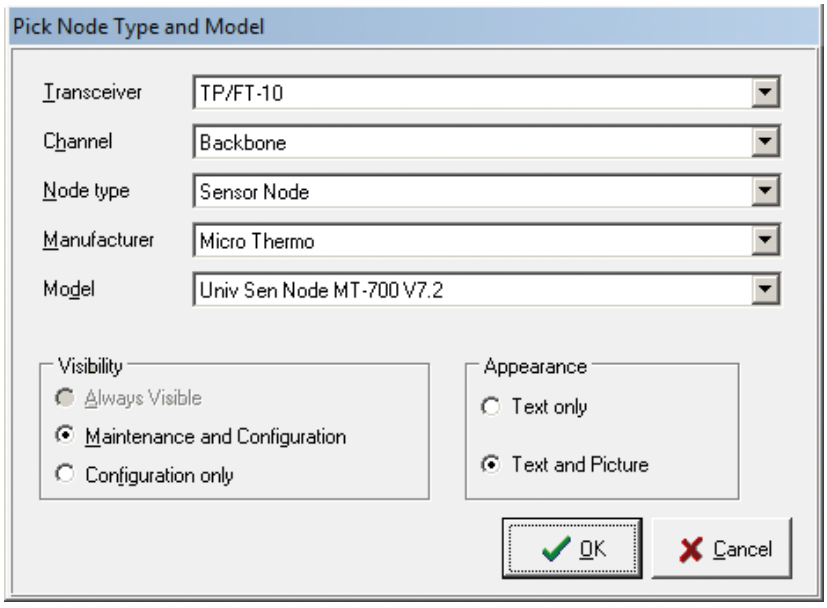
- Select the appropriate Subsystem for the points being monitored (e.g., Refrigeration).
- Select Configuration mode.
- Select the desired view and zoom level where the Sensor Node is installed.

Note: The MT-700 Monitoring Node requires MT Alliance version 7.2.2 or higher.

Dropping a Sensor Node

To begin, an instance of the controller must be created in Alliance. This is done by adding a node in the Alliance view:

1. Drag a Node from the Component list into the view where the controller is installed.
2. In the "Pick Node Type and Model" window that opens, select:
   Transceiver: TP/FT-10
   Channel: Select the correct network channel; default: Backbone
   Node Type: Sensor Node
   Manufacturer: Micro Thermo
   Model: Univ Sen Node MT700
3. Confirm the Visibility and Appearance settings, and press 'OK'.



NOTE: The node icon can be moved to a different position in the current view. While holding the CTRL key, click-and-drag the icon to the desired location.

Installing the Node

Next, the controller will be paired with Alliance and the firmware installed on the controller:

1. Click on the newly created node icon.
2. In the configuration window that opens, give the controller a unique, meaningful name in the 'Identification' field.
3. Select the 'Commands/Status' tab.
4. Click the 'Install' button. If prompted, click 'Yes' to save changes.
5. On the MT-700 controller, press the Service button.
6. After Alliance finishes sending the firmware and configuration parameters, Alliance will return to the Sensor Node Information window. Click 'OK' to close.

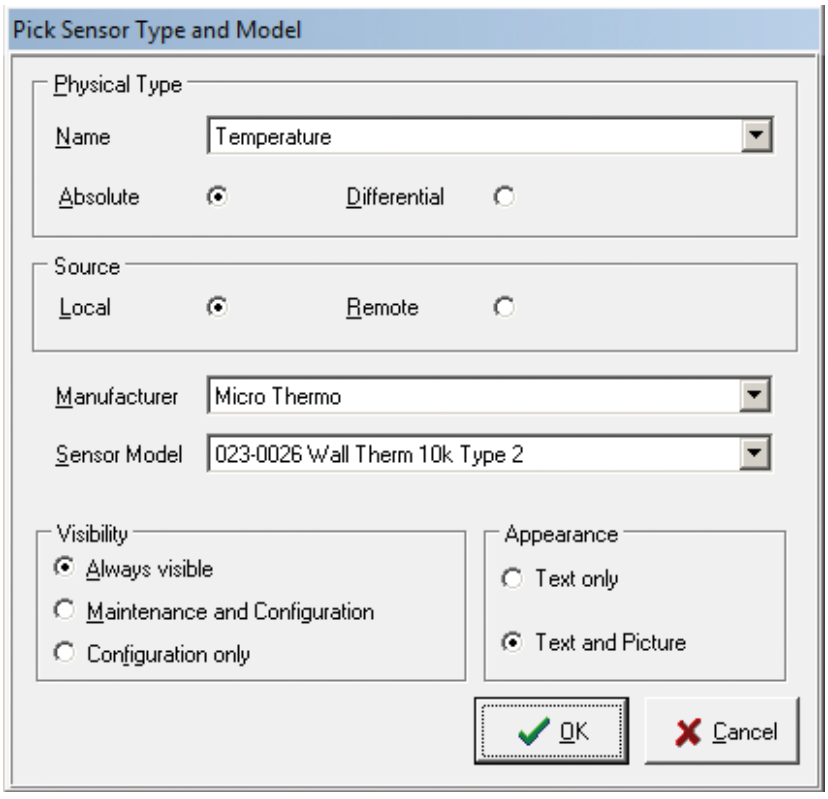
Adding Sensors in Alliance

Each sensor connected to the Sensor Node will have its own entity in Alliance. This entity hosts the configuration settings for the particular sensor, and acts as a visual representation of the sensor status. The following must be completed for each sensor:

Dropping a Sensor

1. Drag a Sensor from the Component list into the Alliance view where the sensor is installed.
2. In the "Pick Node Type and Model" window that opens, select:
   Name: Select the sensor type (temperature, pressure, etc.)
   Manufacturer: Select the sensor manufacturer (Micro Thermo, Sporlan, etc.)
   Sensor Model: Select the specific sensor installed
3. Leave all other defaults, and press 'OK'.

NOTE: The sensor's icon can be moved to a different position on the current view. While holding the CTRL key, click-and-drag the icon to the desired location.

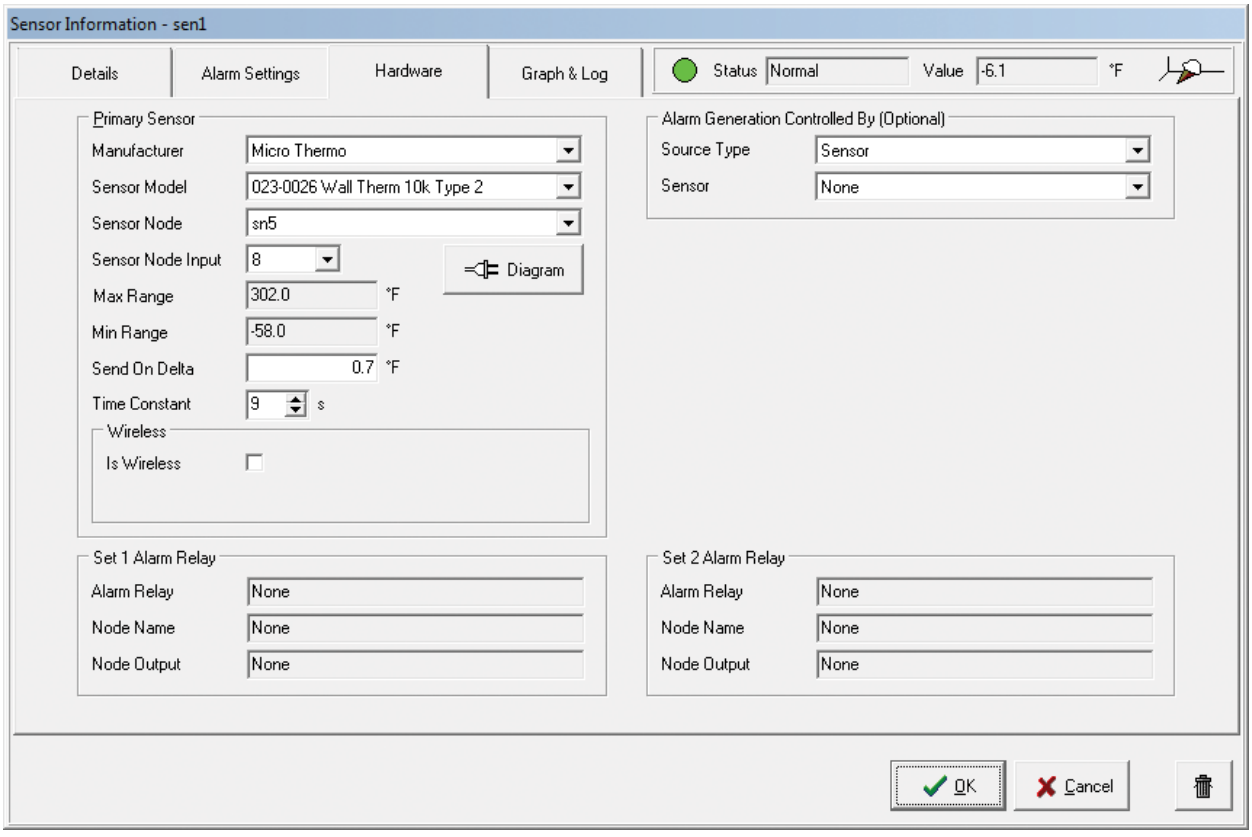


Basic Setup

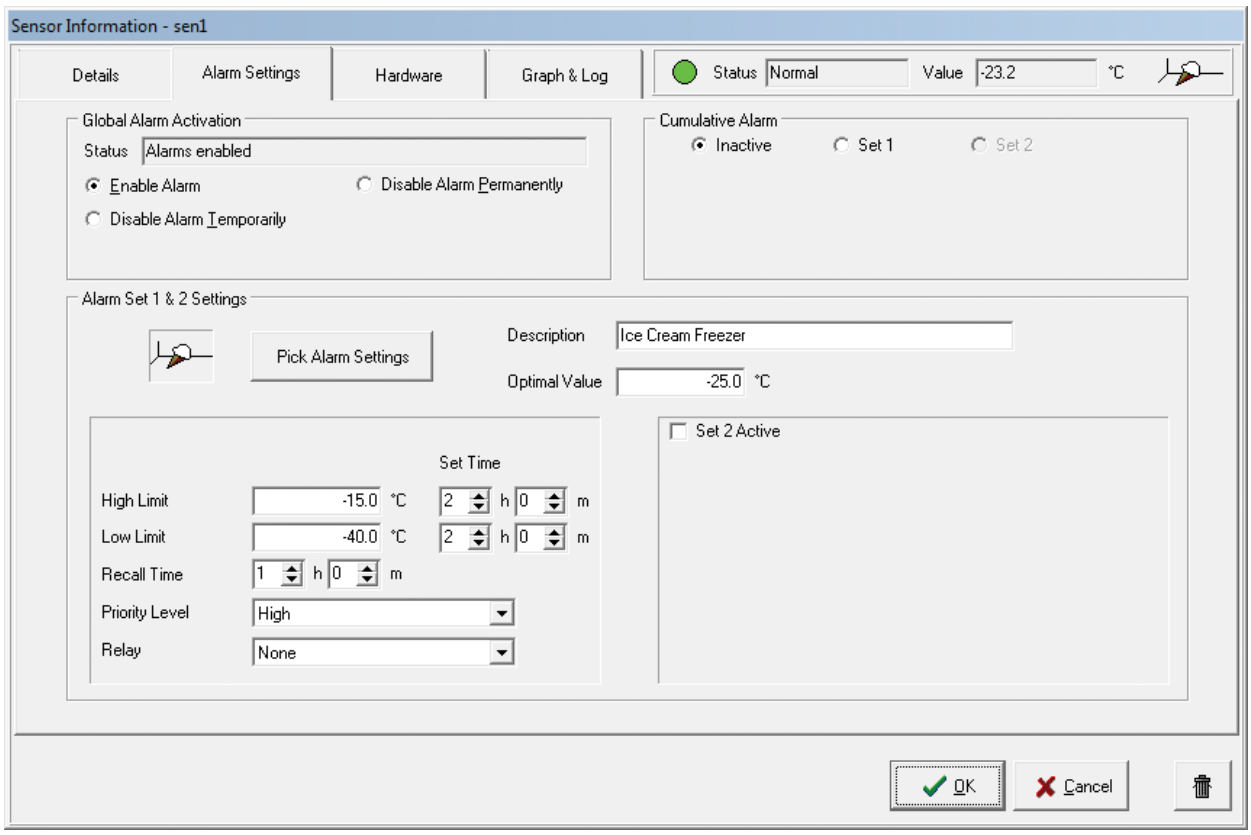
Configuring a Sensor

1. Click on the newly created sensor icon.
2. In the sensor configuration window, give the sensor a unique, meaningful name in the 'Identification' field.
3. Select the 'Hardware' tab.
4. Confirm the manufacturer and sensor model are correct from earlier.
5. In the 'Sensor Node' field, select the controller that is connected to this sensor.
6. In the 'Sensor Node Input' field, select the input location for the sensor. The inputs are numbered sequentially, starting with two inputs on the Main controller and proceeding to the first expansion module. The inputs are also identified – in parenthesis – by two numbers, corresponding to the module number and input number.

   For example: Input (1-2) is Input No. 2 on the Main Controller; Input (2-6) is Input No. 6 on the second module.



Configuring a Sensor *(cont.)*



7. Select the 'Alarm' tab.
8. Configure the sensor's alarm settings, by either selecting a preset or manual configuration. To select a preset: click the 'Pick Alarm Settings' button, select a preset from the list, and click 'OK'. Or to manually configure the alarm settings, fill in the following fields:

   Description: (Optional)

   Optimal Value: Specify the desired sensor reading – displayed on trend graph for reference.

   High/Low Limit: Specify the upper/lower threshold, above/below which an alarm will be generated.

   Set Time: Specify the time delay, during which the sensor must remain outside of the high/low limit, before an alarm is generated.

   Recall Time: If an alarm is acknowledged in Alliance but the alarm condition persists, the alarm signal will be re-activated after the delay specified here. This feature ensures alarms conditions are not dismissed or forgotten without being resolved.

   Priority Level: Specify the severity of the alarm. Temperature alarms should be considered high priority.

   Relay: Specify the external relay to be activated when an alarm is generated (optional).
9. Click 'OK' to close the sensor window. If prompted, click 'Yes' to save changes.

Basic Operation

Status Key

The MT-700 controller has five LED status lights. These indicators represent the basic operational status of the controller.

Off

On

Flashing

Main Controller Status

LED shows the current programming status of the controller.

In Normal mode, the light will flash twice followed by a delay. This pattern repeats every two seconds.

In Wink mode, the light will flash fast for up to 60 seconds.

Unconfigured.

Second Module Status

LED shows the communication status with the main controller.

The light flashes green during normal operation.

The light flashes red if communication is lost.

LON Rx/Tx

Indicates activity on the LonWorks® network. The controller is either sending or receiving data.

RS485 Rx/Tx and Ethernet Act/Lnk

Unused on MT-700 Monitoring Node.

Status

Alliance Status Monitoring

Alliance utilizes the sensor icon to display general status information for quick view and monitoring. Each sensor icon is color coded for its current state and, depending on the zoom level, displays the sensor value and an image corresponding to the sensor type. The sensor icon will appear similar to the following:

Normal Operation

The sensor is operating normal and is within all alarm limits.

Attention Required

The sensor alarm is active and requires attention.

Recall Mode

The sensor alarm is in Recall mode; the first alarm has been acknowledged, but the cause has not been resolved and the alarm has been reactivated.

Disabled

The alarm for this sensor has been disabled, either temporarily or permanently.

Lost Communication

Communication has been lost with the sensor controller, and Alliance does not know the current status of the sensor.

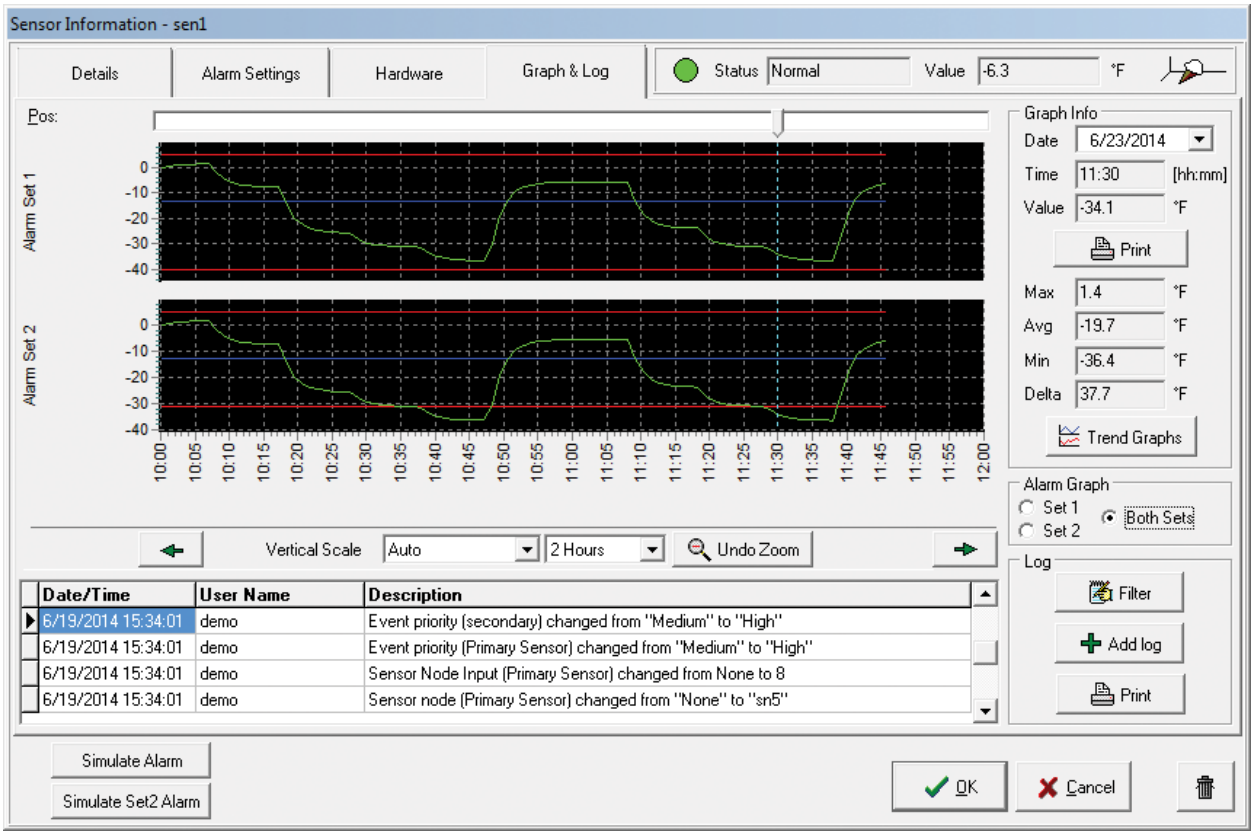
Clicking on the icon opens the Sensor Information window, where detailed status and sensor history is available.

Trend Graphs and Sensor History

Graph & Log Tab

The 'Graph & Log' tab in the sensor configuration window provides access to the complete history of the sensor. The graph displays sensor readings for up to five years, along with the optimal value, high/low alarm limits, when the alarm was active, and the cumulative alarm time (if applicable). The graph's zoom level can be set to display between 1-Hour and 4-Days of data at a time; and the statistical data displayed along the right-hand side is continuously updated to correspond to the time period of the graph. For more in depth diagnostic, the 'Trend Graphs' button opens the Trends Graph window, where the sensor's value can be displayed simultaneously with any other MT Alliance™ saved point.

The lower section of the 'Graph & Log' tab provides a detailed list of all modifications made to the sensor since it was installed. In addition to standard log events, new entries can be created manually; this allows explanations, reminders, or general notes to be permanently recorded and attached to the individual sensor.



Basic Operation

Reports

Sensors can generate automatic, printed reports. These reports can be generated upon acknowledgment of an alarm, as a daily report, or both. To configure reports, open the 'Details' tab in the sensor configuration window. In the upper right section, select the desired Reporting Preferences. *Additional Daily Report settings can be found on the Alliance 'Reports' menu.*

Changing Settings

Many settings for sensors can be changed at any time, should the need arise. However, there are a few exceptions:

1. The (hardware) Model cannot be changed on a Node after it has been dropped in Alliance. To change hardware type, the node must be deleted and a new node dropped.
2. The Subsystem cannot be changed on a Node after it has been dropped in Alliance. To change subsystems, the node must be deleted and a new node dropped.
3. The sensor type cannot be changed on a Sensor after it has been dropped in Alliance. To change sensors, the sensor must be deleted and a new sensor dropped.

NOTE: If a Node or Sensor is deleted in Alliance, its history and logs will also be removed.

Additional Features

Alarms

Alarm Set 2

In addition to the standard alarm threshold, the controller provides a second set of alarm parameters that can be used to complement the primary alarm. The second set is usually configured with narrower alarm limits, but a longer set time. This can be used to identify poorly performing equipment and warn when product shelf life may be reduced. For example, the primary alarm can be set to activate if the measured temperature is 15°F above optimal for one hour; but the second alarm can be set to activate if the measured temperature is 8°F above optimal for four hours. This second condition may not warrant a high priority alarm; but it can be a good indicator that the system needs attention.

By default, Alarm Set 2 is inactive and must be enabled on each sensor.

To configure Set 2, open the 'Alarm Settings' tab in the sensor configuration window. In the lower right portion, click 'Set 2 Active' and modify the alarm settings as desired. Click the 'OK' button to save changes.

NOTE: When a sensor is configured for Dual Use, Set 2 is used as the primary alarm for the second temperature setting. For details, see the Dual Use Sensors section.

Cumulative Alarms

One advanced feature built into Micro Thermo monitoring is Cumulative Alarming. The Cumulative Alarm monitors an input over an extended period of time (usually 24 or 48 hours), and calculates the total time that the input exceeds the high/low limits. This differs from the standard alarm sets, which require a continuous high/low measurement to activate. Instead of resetting every time the measurement returns within limits, the Cumulative Alarm counts all current and previous exceptions that occur within the Cumulative Period.

The Cumulative Alarm is an integral part of temperature monitoring, for maintaining food quality and shelf life. The cumulative effect of temperature variations has a significant impact on refrigerated food.

The variations can also be an indicator of current or developing issues in the system – the instability being caused either adjacent to the sensor or propagating from elsewhere in the system. In either case, a Cumulative Alarm should be investigated to determine the cause.

To configure the Cumulative Alarm, open the 'Alarm Settings' tab in the sensor configuration window. In the upper right section, select the alarm set to use for high/low limits and then specify the Set Time and Cumulative Period parameters.

Disabling Alarms

The MT-700 Monitoring Node allows alarms to be disabled for individual sensors. Permanently disabling an alarm inhibits all alarms for that specific sensor. This remains in effect until a technician manually re-enables the alarm through Alliance. While an alarm is disabled, the icon in Alliance will appear light blue for easy identification. However, if a sensor never requires an alarm (e.g., an auxiliary input), it may be preferable to leave the alarm enabled with the alarm limits set to the sensor's min/max range. This will effectively disable the alarm, but will not affect the Alliance display.

Alarms can also be temporarily disabled on sensors. This is often used during a maintenance call when it is known that repair work will exceed the alarm set time (or recall time); in this case, the alarm is disabled to prevent nuisance alarms. Temporarily disabling an alarm requires the technician to specify an end time. At this time, the controller automatically reactivates the alarm.

To disable an alarm, open the 'Alarm Settings' tab in the sensor configuration window. In the

Additional Features

Disabling Alarms *(cont.)*

upper left portion, select 'Disable Alarm Permanently' or 'Disable Alarm Temporarily'. Specify a reason (optional) for the action, which will be visible to other users and recorded in the historical log. When disabling temporarily, specify the end time. Leaving this at the default value will cause the alarm to remain enabled.

Dual Use Sensors

The MT-700 Monitoring Node includes Dual Use capability for each sensor on the controller. Dual use sensors allow for two sets of alarm limits to be configured and stored, with only one applied at a time. When an assigned switch is toggled (either a software or physical switch), the controller automatically applies the sensor's alternate alarm settings. When the switch is toggled back, the controller returns to the primary settings. This feature allows for quick, error-free changeover in dual use equipment.

Each dual use sensor must be associated with a switch. But one switch can control multiple dual use sensors, including sensors on different controllers. At any point, a sensor can be changed back to Single Usage, and the Alarm Set 1 settings will be retained.

To configure a sensor for dual use, first open the 'Details' tab in the sensor configuration window. In the lower right section, select Dual Usage. Open the 'Hardware' tab and locate the Dual Use Switch settings in the top right. For a **physical switch**, select the Hardware Switch option and then specify the Sensor Node and Input where the switch is wired. For a **software switch**, select the Software Switch option.

When the software switch is enabled, changing the dual use from Set 1 to Set 2 is as simple as clicking on an icon. Click on the sensor icon in Alliance to open the Sensor Information window. At the bottom, center of the window, locate the two alarm settings with the image of a light switch between. Click on the desired alarm setting to activate that Alarm Set. Alternatively, click on the switch icon to toggle back and forth between the two settings. Click 'OK' and save modifications when complete.

Remote Sensors

The MT-700 monitoring node includes the capability to monitor network variables, in the same way the controller would monitor the values from a physical sensor. This Remote Sensor feature allows the MT Alliance system to: (1) record history and generate alarms for Calculation Block values; (2) generate custom alarms for sensors connected to other Micro Thermo Technology controllers, without needing to add duplicate sensors.

To configure a remote sensor, open the 'Details' tab in the sensor configuration window. In the Source section, select Remote. Open the 'Hardware' tab and select the Sensor Node and Input (under Primary Resource) where the sensor value will be simulated. In the Remote Source section, select the source type and location from where the value is generated.

NOTE: Remote sensors utilize the same resources on the Sensor Node as a physical sensor. Therefore, a remote sensor requires an open input on the controller; and a physical sensor cannot be assigned to an input already assigned to a remote sensor.

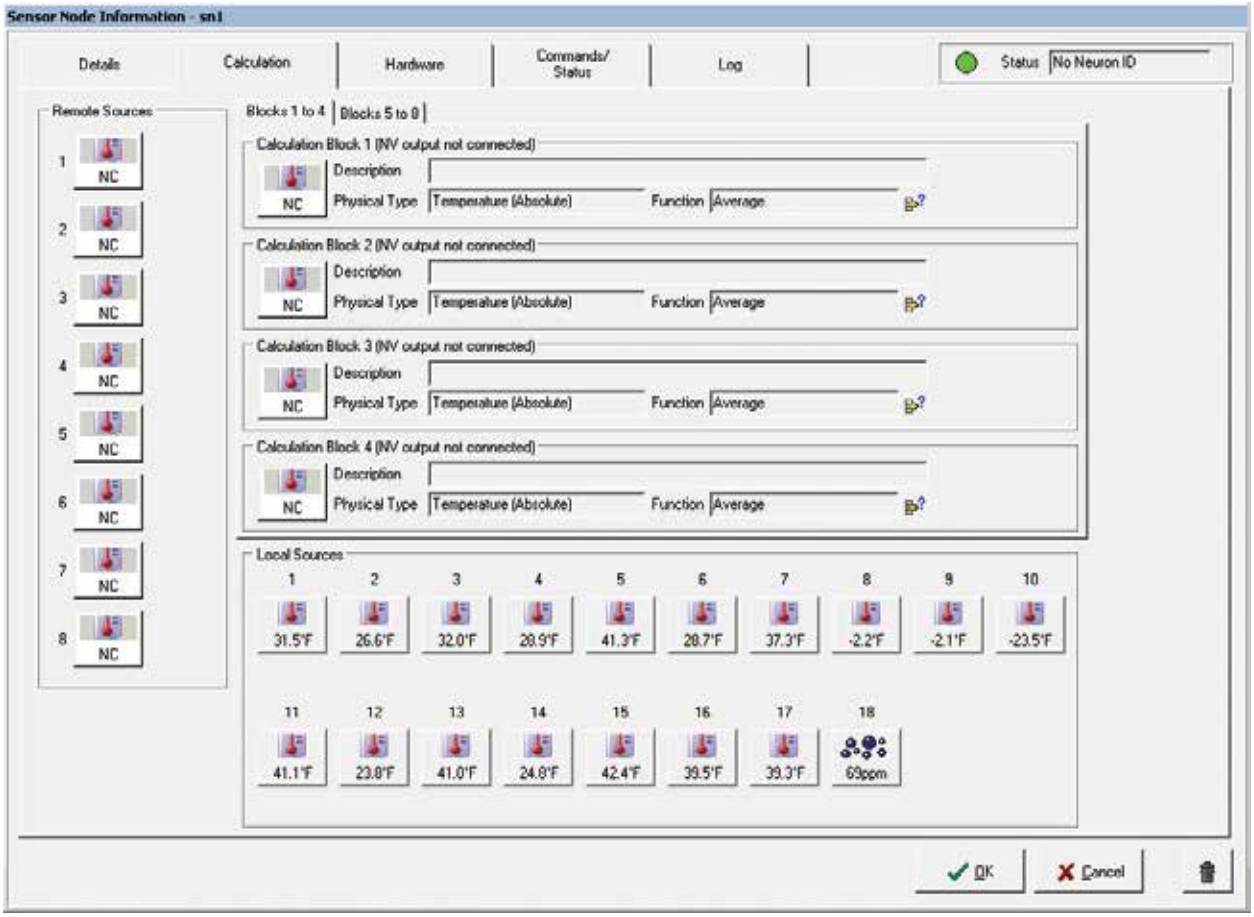
Calculation Blocks

The Calculation Block provides basic mathematical functions, which allow the MT-700 controller to calculate the Minimum, Maximum, or Average of specified values. Each block accepts up to 18 local inputs and 8 remote inputs. Remote inputs can be any combination of remote sensor values, network variables, and results from another calculation block (local or remote). The result is calculated and available through a new Remote Sensor or the nvoUnivCalc network variables. Each MT-700 controller features eight Calculation Blocks.

To configure a Calculation Block, open the node configuration window and select the 'Calculation' tab. Local and Remote resources must be configured before the calculation blocks can be set up. For Remote sources, click one of the Remote Source buttons and specify the Type and Source. After all sources are set up, click one of the Calculation Block buttons. Give the block a Description, check all of the Sources to use in the calculation, and specify the Type, Operator, Range, and Send on Delta values.

NOTE: The standard calculations cannot be performed on a switch-type (on/off) input. Instead, when 'Switch' is selected, the Calculation Block allows the following bitwise operations: AND, NAND, OR, NOR, XOR, XNOR.

> NOTE: Calculations can only be performed on inputs of the same data type. MT Alliance™ enforces this rule, and will only allow the user to select inputs that match the specified data type.



Appendices

Technical Specs

Power Supply:
24VAC, 50/60Hz
20VA max

Analog Inputs:
(18) Universal Inputs:

- Micro Thermo Technologies 10K thermistor
  -58°F to 302°F (-50°C to 150°C)
- 0-5 VDC (Ratiometric)
- 0-10 VDC
- 4-20mA (with external resistor)
- PT1000
  -148°F to 617°F (-100°C to 325°C)
- Switch (dry contact)

Network Connection:
(1) LonWorks® TP/FTT-10 Network @ 78kbps
Wire: 18 AWG 7/26 stranded unshielded twisted pair
(Belden 8461 or equivalent)

Operating Temperature:
-13°F to 140°F (-25°C to 60°C)
0-90% RH (non-condensing)

Storage Temperature:
-13°F to 140°F (-25°C to 60°C)
0-90% RH (non-condensing)

Wiring:
Extractable Screw Terminals

Mounting:
Wall mount or DIN rail (EN 50022)

Dimensions:
8.90 x 5.97 x 2.14 inches
226 x 152 x 54 mm

Compliance:
UL/CUL (recognized per UL 508)
CE
RoHS

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9. Special Tooling. A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture Products. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the Products, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

10. Buyer's Obligation; Rights of Seller. To secure payment of all sums due or otherwise, Seller shall retain a security interest in the goods delivered and this agreement shall be deemed a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect its security interest.

11. Improper use and Indemnity. Buyer shall indemnify, defend, and hold Seller harmless from any claim, liability, damages, lawsuits, and costs (including attorney fees), whether for personal injury, property damage, patent, trademark or copyright infringement or any other claim, brought by or incurred by Buyer, Buyer's employees, or any other person, arising out of: (a) improper selection, improper application or other misuse of Products purchased by Buyer from Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of patterns, plans, drawings, or specifications furnished by Buyer to manufacture Product; or (d) Buyer's failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as otherwise provided.

12. Cancellations and Changes. Orders shall not be subject to cancellation or change by Buyer for any reason, except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller may change product features, specifications, designs and availability with notice to Buyer.

13. Limitation on Assignment. Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.

14. Force Majeure. Seller does not assume the risk and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter "Events of Force Majeure"). Events of Force Majeure shall include without limitation: accidents, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller's reasonable control.

15. Waiver and Severability. Failure to enforce any provision of this agreement will not waive that provision nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of this agreement by legislation or other rule of law shall not invalidate any other provision herein. The remaining provisions of this agreement will remain in full force and effect.

16. Termination. Seller may terminate this agreement for any reason and at any time by giving Buyer thirty (30) days written notice of termination. Seller may immediately terminate this agreement, in writing, if Buyer: (a) commits a breach of any provision of this agreement (b) appointments a trustee, receiver or custodian for all or any part of Buyer's property (c) files a petition for relief in bankruptcy on its own behalf, or by a third party (d) makes an assignment for the benefit of creditors, or (e) dissolves or liquidates all or a majority of its assets.

17. Governing Law. This agreement and the sale and delivery of all Products hereunder shall be deemed to have taken place in and shall be governed and construed in accordance with the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to this agreement.

18. Indemnity for Infringement of Intellectual Property Rights. Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Section. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets ("Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that a Product sold pursuant to this Agreement infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If a Product is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Product, replace or modify the Product so as to make it noninfringing, or offer to accept return of the Product and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to Products delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any Product sold hereunder. The foregoing provisions of this Section shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

19. Entire Agreement. This agreement contains the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged.

20. Compliance with Law, U. K. Bribery Act and U.S. Foreign Corrupt Practices Act. Buyer agrees to comply with all applicable laws and regulations, including both those of the United Kingdom and the United States of America, and of the country or countries of the Territory in which Buyer may operate, including without limitation the U. K. Bribery Act, the U.S. Foreign Corrupt Practices Act ("FCPA") and the U.S. Anti-Kickback Act (the "Anti-Kickback Act"), and agrees to indemnify and hold harmless Seller from the consequences of any violation of such provisions by Buyer, its employees or agents. Buyer acknowledges that they are familiar with the provisions of the U. K. Bribery Act, the FCPA and the Anti-Kickback Act, and certifies that Buyer will adhere to the requirements thereof. In particular, Buyer represents and agrees that Buyer shall not make any payment or give anything of value, directly or indirectly to any governmental official, any foreign political party or official thereof, any candidate for foreign political office, or any commercial entity or person, for the purpose of influencing such person to purchase products or otherwise benefit the business of Seller.

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