Micro Thermo Technologies®
WMDisplay

Wall Mount Display

INSTALLATION INSTRUCTIONS
SD-487 / 52025

OVERVIEW

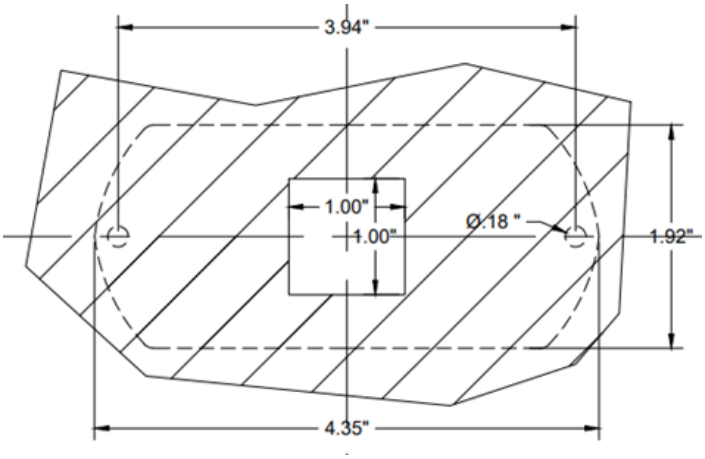
The WMDisplay is a remote display module designed for use with Micro Thermo's MT Alliance control systems. It connects to the RS-485 terminals on the MT-722 board to show basic sensor data. The WMDisplay must be connected to an MT-722 configured as a sensor node within MT Alliance. Once configured, it can display readings such as temperature, pressure, leak detection (ppm), and relative humidity (%). The WMDisplay mounts on a surface and requires a hole in the mounting surface to pass the wiring through. It is compatible with MT Alliance version 8.8.0 and later.

MOUNTING

To mount the display cut out a 1.0 x 1.0-inch rectangle in the panel/bulkhead. Use self-drill #6 screws to secure the display in place. Attach power and communication wiring to the back of the display.

The WMDisplay has two mounting ears with holes for mounting. The holes are 4.57mm (0.18") in diameter and will accept a common #6 self-tapping screw. The WMDisplay is designed for its feed wires to run from the back. Therefore, a minimum 25.4 mm by 25.4 mm (1.0" by 1.0") square hole must be cut in the mounting surface to allow the wires and terminal block to pass through. Alternately, a round hole may be cut with a 1-inch hole saw. See the mounting diagram below in Figure 1.

Figure 1: Mounting Diagram



WIRING

The WMDisplay must be powered from a 12 to 24 VDC power supply with at least 200 milliamps. **DO NOT** power the display with AC voltage.

The external DC power supply must be Class 2 and Class II Rated. The 15VDC output on the MT-722 can not power the WMDisplay.

Micro Thermo Technologies offers a suitable power supply, listed below.

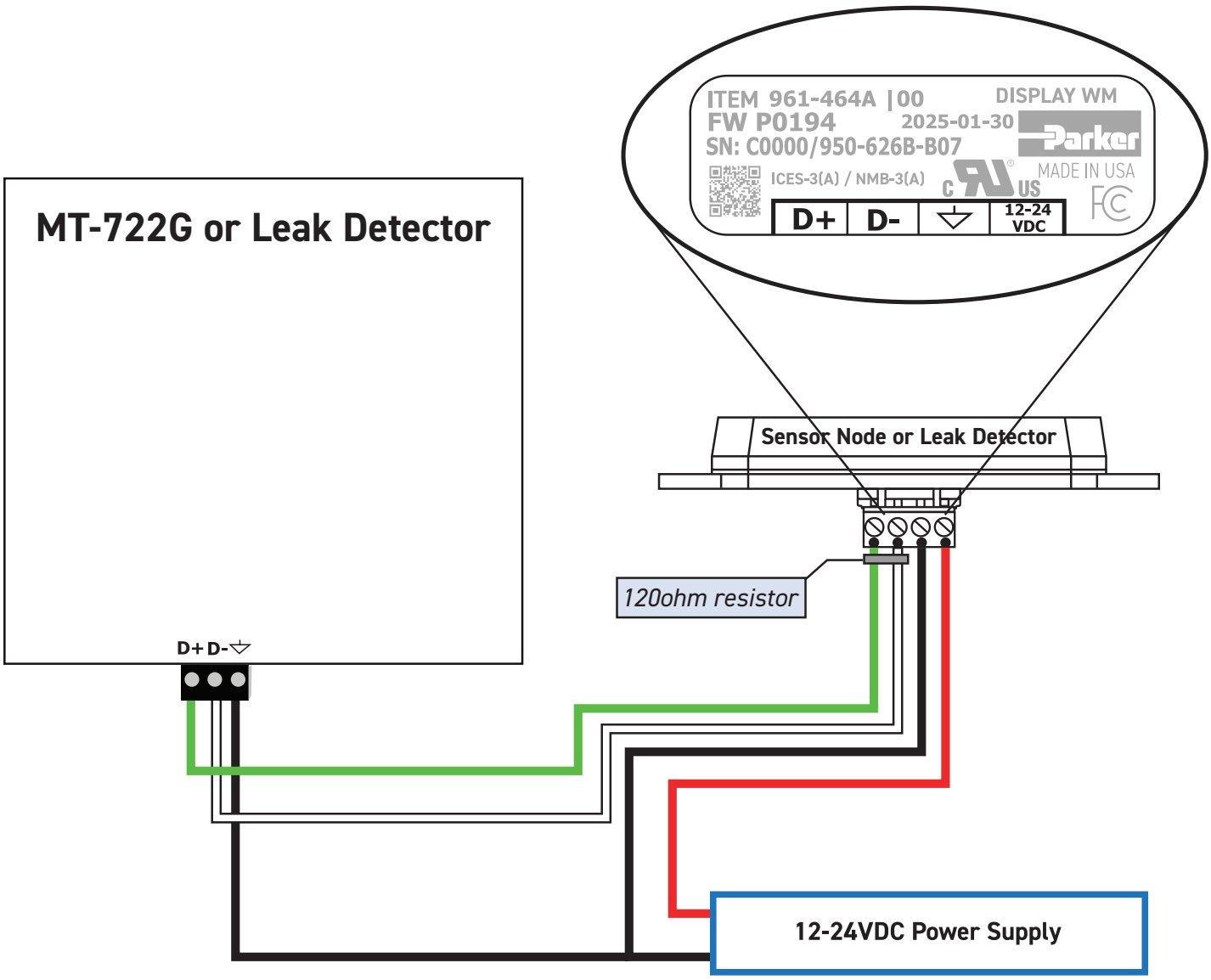
Part Number	Description
400-0018	Power Supply 90-264VAC to 24VDC/340mA, 8W

See table below for maximum power wire distance based on wire gauge

22 AWG Maximum Distance	20 AWG Maximum Distance
60 meters or 200 feet	121 meters or 400 feet

The WMDisplay can be configured to read values from sensors connected locally to a sensor node or from sensors set up as remote inputs on a sensor node. It can also read values directly from certain models of leak detectors. In all cases, the WMDisplay requires its own DC power supply. The negative terminal of this power supply must be connected to both the WMDisplay's DC power negative terminal and the RS-485 ground terminal of either the sensor nodes or the leak detectors. Reference the wiring diagram in Figure 2 below. A 120ohm modbus termination resistor must be added to the communication loop.

Figure 2: WMDisplay Wiring



* Note that the 15VDC output on the MT-722 can not power the WMDisplay

CONFIGURATION USING A SENSOR NODE

Before configuring the WMDisplay, make sure the following conditions are met:

- MT Alliance v8.8.0 or above.
- WMDisplay mounted and wired to sensor node.
- The sensor you want to use the WMDisplay with is configured and reading on the sensor node within MT Alliance.

Follow the steps below for configuring a new display to read a sensor that is equipped with a sensor node:

1. Within MT Alliance, open the sensor that you wish to map to the WMDisplay and navigate to the "Details" tab.
2. In the bottom-left corner of the screen, check the box for "Enable sending of the sensor value".
3. Enter the display's modbus address in the text field. Each display must have a unique address. Press OK to apply the changes.
4. Go to the WMDisplay, which should already be wired per the instructions above. Once the display is turned on, it should briefly show **"oPMd"** and then **"U700".**
5. Use the arrow buttons to scroll between either "**U700"** or **"LEAK"** to choose the configuration mode. Scroll to **"U700"** and press the SET button.
6. The display will show a number that represents the Modbus address. Each display must have a unique address. Use the arrow buttons to select the desired address and then press the SET button. The address chosen should match the number that was selected in step 3 above.
7. The display will show **"rst"** to indicate a reset and then will begin displaying the mapped sensor value after a few seconds.
8. Confirm that the value on the WMDisplay matches the value in MT Alliance.

See the example screenshots below for a local sensor input (Figure 3) and for a remote sensor input (Figure 4).

Notes

1. WMDisplay modbus addresses 1 through 247 are supported.
2. The maximum number of WMDisplays on the same bus segment is 20.

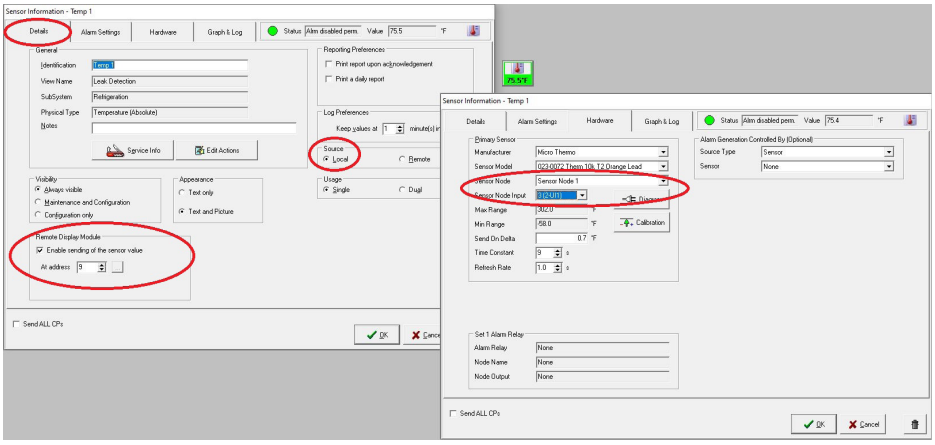


Figure 3: Local Sensor Configuration

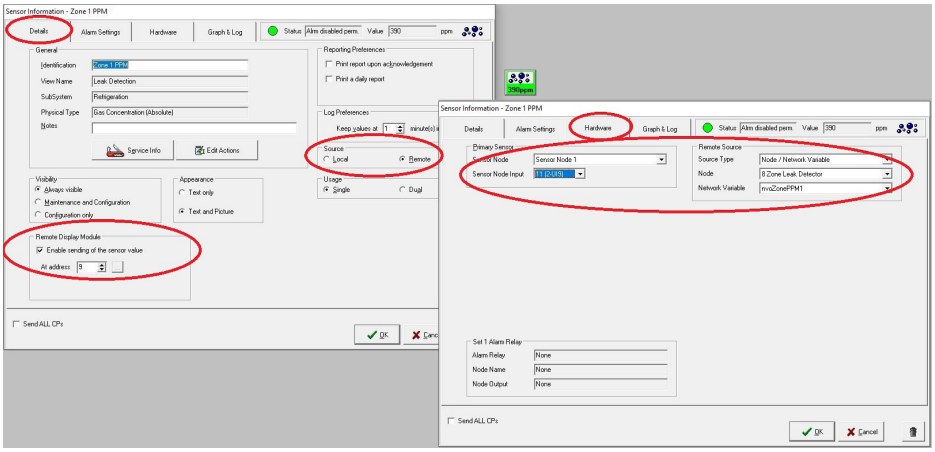


Figure 4: Remote Sensor Configuration

CONFIGURATION USING A COMPATIBLE LEAK DETECTOR

Before configuring the WMDisplay, make sure the following conditions must be met:

- WMDisplay mounted and wired to leak detector.

Follow the steps below for configuring a new display to PPM values from a compatible leak detector:

1. Go to the WMDisplay, which should already be wired per the instructions above. Once the display is turned on, it should briefly show **"oPMd"** and then **"U700"**.
2. Use the arrow buttons to scroll between either **"U700"** or **"LEAK"** to choose the configuration mode. Scroll to **"LEAK"** and press the SET button.
3. The display will show **"rst"** to indicate a reset.
4. The display will show **"scan"** for a few moments while it scans for connected leak detectors.
5. Once a leak detector has been found, the display will briefly show a value that represents the leak detector model that has been found. See the notes section below for model descriptions.
6. The display will then begin to scroll the leak detector's reading. For multi-zone leak detectors, the display will automatically cycle through all zones.
7. Confirm that the value on the WMDisplay matches the value in MT Alliance.

Notes

1. The maximum number of WMDisplays on the same bus segment is 20.
2. "**Er-1"** on the display the indicates that the device is not properly plugged in. Try reversing the polarity on the modbus communication wires A & B.
3. "**Er-2"** on the display indicates that the device is not found in the database.
4. Supported Leak Detectors are listed in the table below.

Micro Thermo P/N	WMDisplay Identifier	Description
023-0480	d-02	Leak detector IR user select 1000ppm Disp 1AO/1RO 24Vac/dc
023-0551	d-03	Wall mount, Industrial CO2 sensor (R744), IP41 (-40F)
844-REFR	d-01	4 Zone Leak Detector, for HFC/HFO
845-REFR	d-01	8 Zone Leak Detector, for HFC/HFO
846-REFR	d-01	16 Zone Leak Detector, for HFC/HFO
844-RCO2	d-01	4 Zone Leak Detector, for CO2
845-RCO2	d-01	8 Zone Leak Detector, for CO2
846-RCO2	d-01	16 Zone Leak Detector, for CO2

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