

Installation and Maintenance Manual

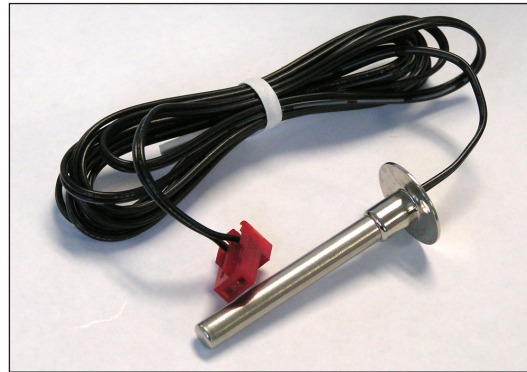
IM 956-5

Group: **WSHP**

Part Number: **IM956-5**

Date: **April 2024**

Temperature Sensors for Units with MicroTech® III or MT2300 Unit Controller and LonWORKS® or BACnet® Communication Module



Discharge Air Temperature Sensor

Note: For instructions on how to install the LonWORKS Communication Module refer to IM 927. To install the BACnet Communication Module refer to IM 928.

Note: LonWORKS Communications module is not currently supported in the MT2300 Unit Controller.

LonWORKS Field Installation Kit

Qty	Description
1	LonWORKS Communication Module
1	IM 927 MicroTech WSHP LonWORKS Communication Module
1	IM 956 Temperature Sensors for Units with MicroTech III or MT2300 Unit Controller and LonWORKS or BACnet Communication Module
1	Return Air Temperature Sensor, flanged with two-pin connector
1	Water Temperature Sensor, with two-pin connector
4	Stand-off 7/16"
5	Wire Tie, 8"
1	Supply Air Temperature Sensor, flanged with terminal connector

BACnet Field Installation Kit

Qty	Description
1	BACnet Communication Module
1	IM 928 MicroTech WSHP BACnet MS/TP Communication Module
1	IM 956 Temperature Sensors for Units with MicroTech III or MT2300 Unit Controller and LonWORKS or BACnet Communication Module
1	Return Air Temperature Sensor, flanged with two-pin connector
1	Water Temperature Sensor, with two-pin connector
4	Stand-off 7/16"
5	Wire Tie, 8"
1	Supply Air Temperature Sensor, Flanged with terminal connector

All Wiring must comply with the National Electric Code (NEC), and local codes.

⚠ CAUTION

Sharp edges can cause personal injury. Avoid contact with them.

Installation - WSHP Vertical (Floor) & Horizontal (Ceiling) Models

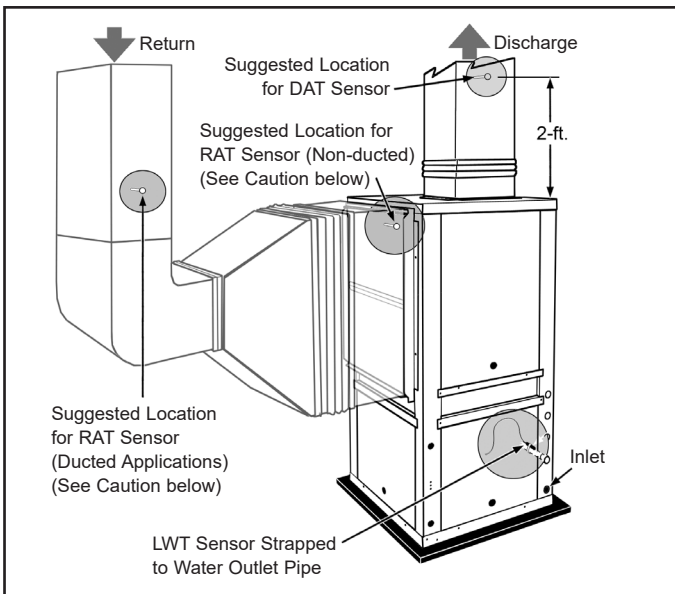
1. The Leaving Water Temperature (LWT) sensor is typically installed on the outlet water line, just inside the unit cabinet (Figure 1). Thermal grease can be used between the sensor and the water line to improve thermal conductivity between the two metal surfaces. Insulation must be applied over the sensor.

Notes: 1. *The LWT sensor may already be factory installed on some units. If the LWT is already factory installed the LWT sensor supplied with the kit can be discarded.*

2. *On some MicroTech III units the H4 connector will already be connected to the control board and the kit supplied connector can be discarded.*

- On MicroTech III units, the LWT sensor wires will terminate on pins 3 and 4 on header H4 (Figure 2).
- On MT2300 units, the LWT sensor wires will terminate on pins 1 and 2 on header H2 (Figure 5).

Figure 1: Mounting locations for the temperature sensors (vertical floor model shown)

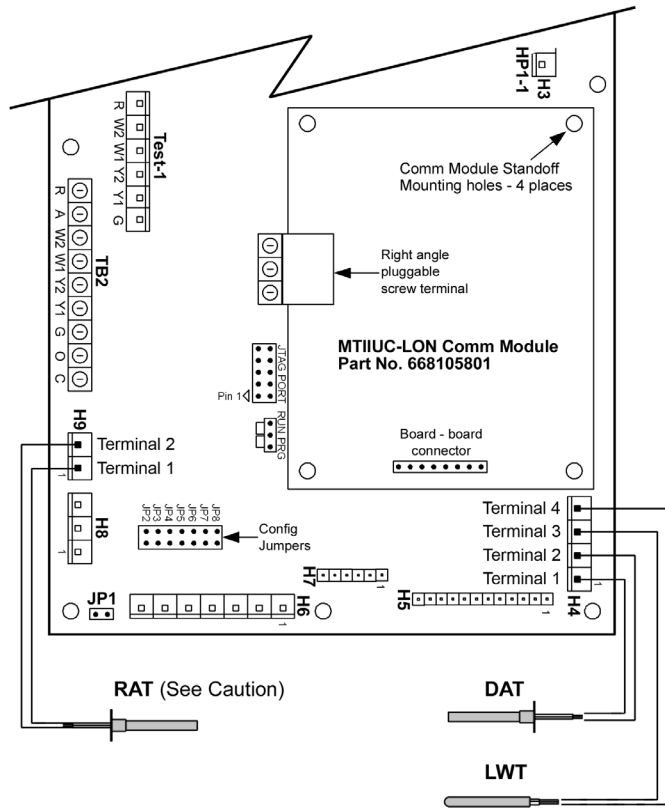


⚠ CAUTION

On MicroTech III units, when an optional wall-mounted room temperature sensor is connected to the unit controller, the Return Air Temperature (RAT) sensor must not be installed. A wall-mounted room temperature sensor and the return air temperature sensor must not be connected simultaneously or the unit will not operate properly.

2. The Return Air Temperature (RAT) sensor is typically installed upstream of the evaporator coil, either in the return ductwork or connected to the filter rack if return ductwork is not present (Figure 1).
 - On MicroTech III units, the RAT sensor wires will terminate on pins 1 and 2 on terminal block H9 (Figure 2).
 - On MT2300 units with an optional MT2310 I/O expansion module, the RAT sensor wires will terminate on pins 3 and 4 on MT2310 I/O expansion module header H4 (Figure 6).
 - On MT2300 units with no MT2310 I/O expansion module and no optional wall-mounted room temperature sensor, the RAT sensor can be connected to the space temperature inputs on the MT2300 controller. To do this, cut off connector on the RAT sensor, and wire the RAT sensor to the MT2300 TB2 RM and GND terminals (Figure 5).
3. The Discharge Air Temperature (DAT) sensor is typically installed 2-ft. to 3-ft. down stream of the fan housing (Figure 1). Because the airflow is more uniform at this location in the airstream, a more accurate reading of the discharge air temperature is possible.
 - On MicroTech III units, the DAT sensor wires will terminate on pins 1 and 2 on header H4 (Figure 2).
 - On MT2300 units, the DAT sensor wires will terminate on pins 3 and 4 on header H2 (Figure 5).

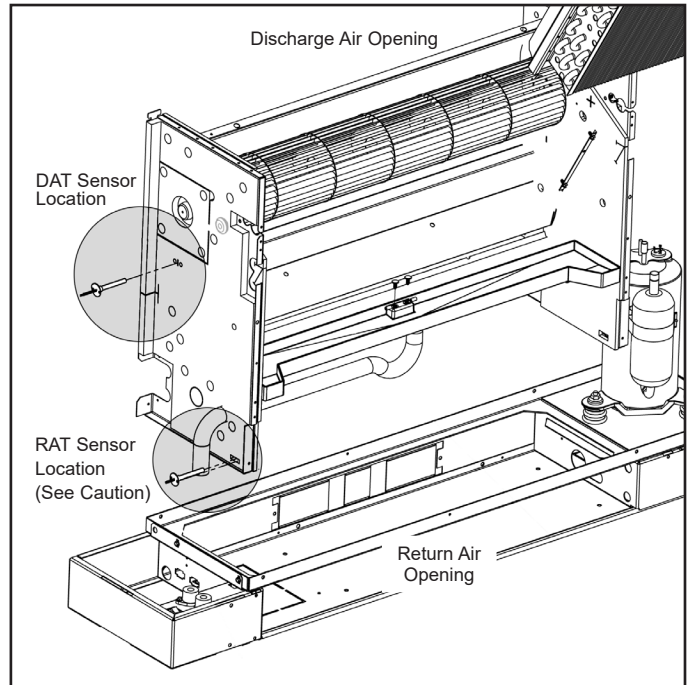
Figure 2: Terminal connections for temperature sensors on the MicroTech III Unit controller



Installation - WSHP Console Models

1. The Discharge Air Temperature (DAT) sensor is installed between the coil and fan housing (Figure 3).
 - On MicroTech III units, the DAT sensor wires will terminate on terminals #1 and #2 on terminal block H4 (Figure 2).
 - On MT2300 units, the DAT sensor wires will terminate on pins 3 and 4 on header H2 (Figure 5).

Figure 3: Discharge Air Temperature Sensor (DAT) & Return Air Temperature (RAT) sensor locations



⚠ CAUTION

On MicroTech III units, when an optional wall-mounted room temperature sensor is connected to the unit controller, the Return Air Temperature (RAT) sensor must not be installed. A wall-mounted room temperature sensor and the return air temperature sensor must not be connected simultaneously or the unit will not operate properly.

2. The Return Air Temperature (RAT) sensor is installed before the evaporator coil, just above the return air opening (Figure 3).
 - On MicroTech III units, the RAT sensor wires will terminate on pins 1 and 2 on header H9 (Figure 2).
 - On MT2300 units with an optional MT2310 I/O expansion module, the RAT sensor wires will terminate on pins 3 and 4 on MT2310 I/O expansion module header H4 (Figure 6).

- For units with a MT2300 controller and no I/O expansion and no wall mounted room sensor installed, the RAT sensor can be connected directly to the space temperature inputs (RM & GD) on the MT2300 controller. Note: The terminal connector must first be removed from the RAT sensor prior to connecting to the board (Figure 5).
3. The Leaving Water Temperature (LWT) sensor is installed on the outlet water line (Figure 4). Thermal grease can be used between the sensor and the water line to improve thermal conductivity between the two metal surfaces. Insulation must be applied over the sensor.
- On MicroTech III units, the LWT sensor wires will terminate on pins 3 and 4 on header H4 (Figure 2)
 - On MT2300 units, the LWT sensor wires will terminate on pins 1 and 2 on header H2 (Figure 5).

Figure 4: Leaving Water Temperature Sensor (LWT) location for units using a communication module

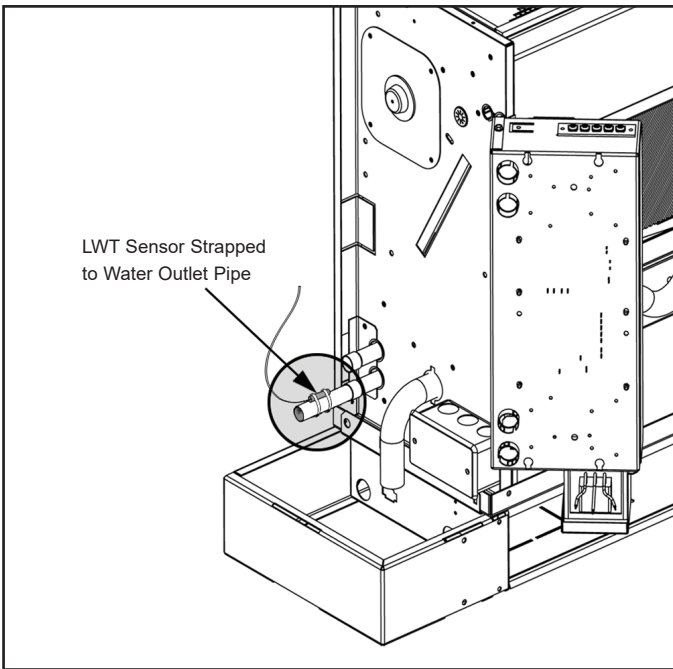


Figure 5: Terminal connections for temperature sensors on the MT2300 unit controller

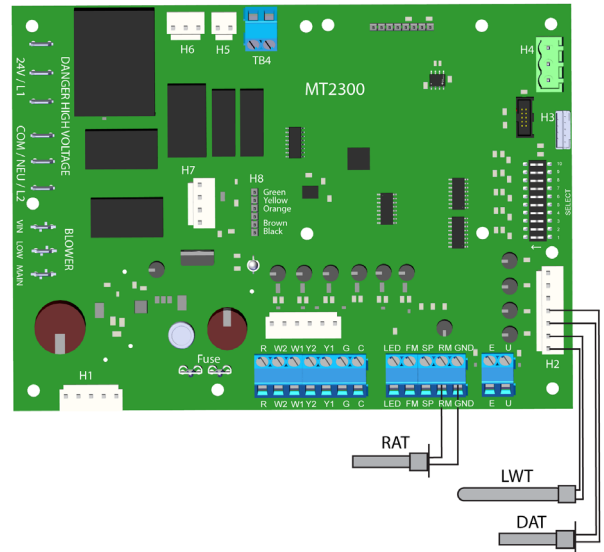
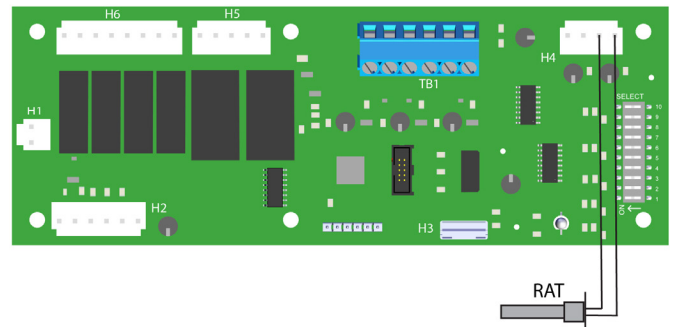


Figure 6: Terminal connections for RAT sensor on the MT2310 I/O Expansion Board





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