DESCRIPTION
The ultra-fast Series HU Transmitter provides a stable, repeatable, and accurate means of measuring both temperature and humidity in the harshest of environments. The polymer capacitance sensor is not affected by condensation, fog, high humidity or contaminants. Sophisticated integrated circuits provide a high level, fully conditioned, and temperature compensated 4-20 mA output signal. For humidity or temperature/humidity control, a rugged NEMA 4 (IP56) fully gasketed duct mount enclosure is available or for monitoring space humidity, choose the ABS plastic wall mount enclosure. Units also feature non-interacting zero and span adjustments, short circuit protection and reverse polarity protected output.

INSTALLATION
WARNING:
Disconnect power supply before installation to prevent electrical shock and equipment damage.

Make sure all connections are in accordance with the job wiring diagram and in accordance with national and local electrical codes. Use copper conductors only.

CAUTION:
Use electrostatic discharge precautions (e.g., use of wrist straps) during installation and wiring to prevent equipment damage.

Avoid locations where severe shock or vibration, excessive moisture or corrosive fumes are present. NEMA Type 4 (IP56) housings are intended for outdoor use primarily to provide a degree of protection against wind-blown dust, rain, and hose-directed water.

Do not exceed ratings of the device.

Mounting
The duct mount models must be mounted as described below:
1. Drill a 5/8" holes in the appropriate locations.
2. Mount transmitter on a vertical surface with two #8 self-tapping screws (not provided).

PHYSICAL DATA
Relative Humidity Range: 0 to 100% RH.
Temperature Range: -30 to 130˚F (-35 to 55˚C).
Accuracy: ±2% RH (includes non-linearity and non-repeatability); ±0.12% @ 0˚C.
Hysteresis: ±1%.
Output: 4-20 A, 2-wire.
Supply Voltage: 12-40 VDC.
Supply Current: 20 mA maximum.
Loop Resistance: 3000 ohms max. @ 40VDC.
Response Time: 60 msec.
Operating Temperature Range: -30 to 130°F (-35 to 55°C).
Operating Humidity Range: 10-90% RH, non-condensing.
Compensated Temperature Range: -30 to 130°F (-35 to 55°C).
Temperature Sensor: Pt 1000Ω RTD.
Zero & Span Adjustment: ±15%, non-interactive.
Enclosure: Duct Mount: Cold-Rolled Steel, NEMA 4 (IP56); Wall Mount: ABS plastic.
Finish: Baked on gray enamel.
Electrical Connections: Unpluggable screw terminal block.
Wire Size: 12 AWG max.
Conduit Connection: 1/2" (22.3 mm) knockout.
Weight: Duct Mount: 1.0 lbs (.45 kg); Wall Mount: 0.5 lbs (.25 kg).
Stability: ±2 RH over 2 years.

STOCKED MODELS

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>HU0142</td>
<td>Humidity Transmitter, duct mount.</td>
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<tr>
<td>HU0242</td>
<td>Humidity Transmitter, wall mount.</td>
</tr>
<tr>
<td>HU1142</td>
<td>Humidity/Temp. Transmitter, duct mount.</td>
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The wall mount models must be mounted as described below:

1. Turn both allen screws CW on bottom of unit—remove cover.
2. Select the mounting location, locate away from diffusers, lights, or any external influences.
3. Mount transmitter on a vertical surface with two screws provided.
4. Pull wires through sub base hole and make necessary connections (see Figure 2).
5. Replace plastic cover and turn allen screws CCW.

Wiring
Use maximum 12 AWG wire for wiring terminals. Refer to Figures 1 & 2 for wiring information.

The Series HU Humidity Transmitters are 4-20 mA output units powered with a 12-40 VDC supply. The following describes the proper wiring of these transmitters with mA output.
1. Remove the blue terminal block by carefully pulling it off the circuit board.
2. Locate the [+] and [-] terminal markings on the board.
3. Attach the supply voltage to the [+] lead.
4. Connect the 4-20 mA output ([+] terminal) to the controller's input terminal.
5. Ensure that the power supply common is attached to the common bus of the controller.
6. Re-insert the terminal block to the circuit board and apply power to the unit.
7. Check for the appropriate output signal using a DVM set on DC milliamps connected in series with the [-] terminal.

CHECKOUT
1. Verify that the unit is mounted in the correct position.
2. Verify appropriate input signal and supply voltage.

Caution: Never connect 120 VAC to these transmitters. Never connect AC voltage to a unit intended for DC supply.
3. Verify appropriate configuration range.

CALIBRATION
All units are factory calibration to meet or exceed published specifications. If field adjustment is necessary, follow the instructions below. Calibration of the Series HU Humidity Transmitter Field Calibration instructions are provided with the following precautions and advice.

1. Do not verify comparative RH with a sling Psychrometer. There are far too many variables which induce errors into this process. New transmitters are already supplied with calibration.
2. Recalibration must be done in a controlled environment. Relative humidity must be held stable while making any adjustment.
3. Verify the output from the device directly with calibrated instrumentation and verify the RH with calibrated instrumentation, (NOT A CONTROLLER OUTPUT). With the correct power applied and only a meter connected to the output of the transmitter, ensure that the output is proportional to the true RH.

4. A. SINGLE POINT CALIBRATION (Note: Select either option 1 or option 2, but not both).

OPTION 1. Select a controlled humidity environment between 10 & 40% R.H. Insure humidity is stable and adjust zero trimmer (z).

OPTION 2. Select a controlled humidity environment between 40 & 70% R.H. Insure humidity is stable and adjust span trimmer (s).

5. B. TWO POINT CALIBRATION
1. Select a controlled humidity environment between 10 & 40% R.H. Insure humidity is stable and adjust zero trimmer (z). Then select a controlled humidity environment between 70 & 75% R.H. Insure humidity is stable and then adjust span trimmer (s).

MAINTENANCE/REPAIR
Regular maintenance of the total system is recommended to assure sustained optimum performance. These devices are not field repairable and should be returned to the factory if recalibration or other service is required. After first obtaining a Returned Goods Authorization (RGA) number, send the unit, freight prepaid to the following address. Please include a clear description of the problem plus any application information available.

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