



# OEM Humidity Sensor

Unit Mount

RoHS

## Model HU-921



- Ultra fast response cross-linked bulk polymer capacitive sensing element
- Proprietary hydrophobic and oleophobic ePTFE filter to protect the sensing element from condensation, fog, salt air, pollutants and other contaminants.
- Conformal coated and moisture sealed electronics
- Rugged 20% glass-filled low smoke UL-95-V-O polycarbonate enclosure with external mounting bracket to accommodate uneven mounting surface
- NIST traceable  $\pm 3\%$  RH calibration accuracy
- Two temperature compensated output versions, 4-20 mA 2-wire or 0-10 VDC

The HU-921 is designed for humidification/dehumidification and economizer control on packaged roof-top air handlers. Humidity sensors are calibrated over 0 to 100% RH and offer  $\pm 3\%$  accuracy over 30 to 70% RH and are temperature compensated from  $-30^{\circ}\text{F}$  ( $-35^{\circ}\text{C}$ ) to  $130^{\circ}\text{F}$  ( $55^{\circ}\text{C}$ ). By limiting the accuracy over the usable range for controls, significant cost reductions can be provided to OEM manufacturers. HU-921 humidity sensor is designed to handle 100% condensing humidity. The electronics are moisture sealed with an acrylic coating, and the sensing element is protected with an ePTFE (expanded Teflon) filter media. The sensor is designed to be factory or field installed in fresh air hoods, discharge or return air ducts of air handlers. Rugged 20% glass-filled low smoke UL-95-V-O polycarbonate enclosure, external mounting bracket to accommodate uneven mounting surface, and 1/4" quick disconnect terminals for wire harnesses are some of the features which make the HU-921 a reliable and cost-effective solution for OEM humidity and economizer controls. HU-921 is available with more than 16 types of interchangeable NTC thermistors, precision platinum, nickel or balco RTDs for universal compatibility.



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# HU-921

## HUMIDITY TRANSDUCER SPECIFICATIONS:

**Accuracy\*:**  $\pm 3\%$  RH (30% to 70% RH)  
**Range:** 0-100% RH  
**Hysteresis:**  $\pm 1\%$   
**Supply Voltage:** 12-40 VDC  
12-35 VAC (VDC output units only)  
**Compensated Temp Range:** -30°F to 130°F  
(-35°C to 55°C)  
**Load Impedance:** 1.5K ohms max. at 40 VDC  
(mA output units)  
1K ohms min.  
(VDC output units)

\* Includes non-linearity and non-repeatability

## PLATINUM RTD SENSOR SPECIFICATIONS:

**Accuracy:** 0.12% at 0°C  
**Resistance:** 100 or 1,000 ohm at 0°C  
**Standard:** DIN 43760  
**Heat Dissipation:** 3.0 mW/°C  
**R/T Characteristics:** Refer to TI.700-11  
(See Temperature Sensor section)  
**Operating Temp Range:** -30°F to 130°F  
(-35°C to 55°C)

## ORDERING INFORMATION: HU-921-

Output	Temperature Sensor
<b>mA</b> (4-20 mA 2-wire)	<b>1</b> 100 ohm Platinum RTD
<b>VDC</b> (0-10 VDC)	<b>2</b> 1,000 ohm Nickel RTD (5000 PPM)
	<b>3</b> 1,000 ohm Platinum RTD
	<b>4</b> 1,000 ohm Nickel RTD (6000 PPM)
	<b>5</b> 1,000 ohm Balco RTD
	<b>7</b> 10,000 ohm NTC thermistor (Type III)
	<b>8</b> 10,000 ohm NTC thermistor (Carel)
	<b>10</b> 3,000 ohm NTC thermistor
	<b>12</b> 10,000 ohm NTC thermistor (Type II)
	<b>13</b> 5,000 ohm NTC thermistor
	<b>14</b> 1,035 ohm Silicon PTC
	<b>15</b> 100,000 ohm NTC thermistor
	<b>16</b> 10,000 ohm NTC thermistor (Eliwell)
	<b>17</b> 20,000 ohm NTC thermistor
	<b>18</b> 2,252 ohm NTC thermistor
	<b>21</b> 1,800 ohm NTC thermistor

**Example: (Humidity Only) HU-921-mA:** OEM Humidity Sensor (unit mount) with 4-20mA output.

**(Humidity/Temp Combined) HU-921-mA-3:** Humidity Sensor (unit mount) with 4-20 mA output and 1,000-ohm Platinum RTD.

For Resistance vs. Temperature Tables, please refer to TI.700-11.

## THERMISTOR SENSOR SPECIFICATIONS:

**Interchangeability:**  $\pm 0.2^\circ\text{C}$   
**Heat Dissipation:** 3.0 mW/°C  
**R/T Characteristics:** Refer to TI.700-11  
(See Temperature Sensor section)  
**Operating Temp Range:** -30°F to 130°F  
(-35°C to 55°C)

## GENERAL SPECIFICATIONS:

**Environmental:** 10-100%RH  
**Enclosure:** 20% glass filled polycarbonate  
**Bracket:** 18 Ga galvanized steel  
**Termination:** 1/4" quick disconnect terminals  
**Wire Size:** 12 Ga maximum  
**Weight:** 0.5 lbs. (.20 kg)

## CONFORMANCE & TESTING:

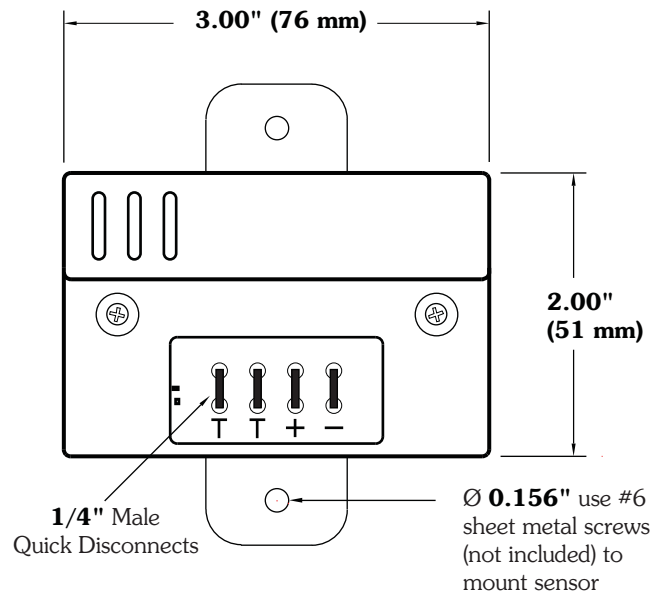
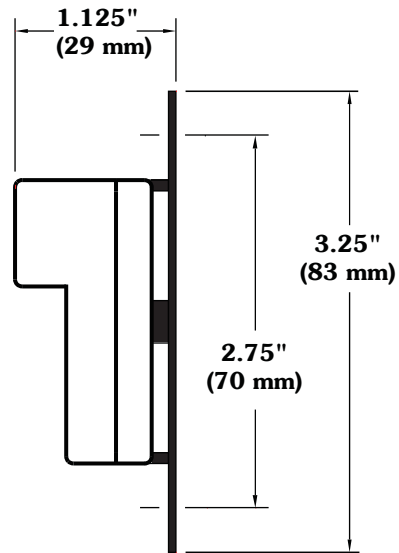
RoHS Compliant

### EMC Testing:

BS EN 55022:1998, BS EN 55024:1998,  
EN 61000-3-3, EN 61000-4-2,  
EN 61000-4-3, EN 61000-4-4,  
EN 61000-4-5, EN 61000-4-6,  
EN 61000-4-11

**CAUTION: Do not use in explosive/hazardous environment or with flammable/combustible media.**

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**All MAMAC products are manufactured in the USA.**

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