



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°F (-35°C) to 130°F (55°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)

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

ORDERING INFORMATION: HU-921-

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

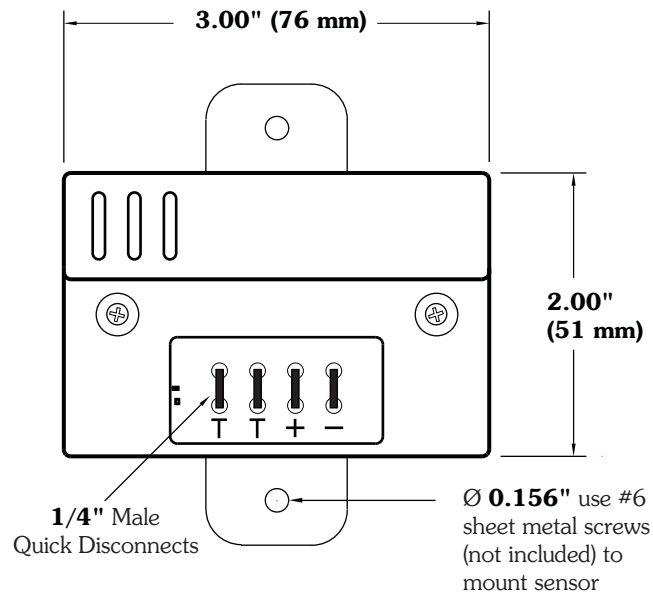
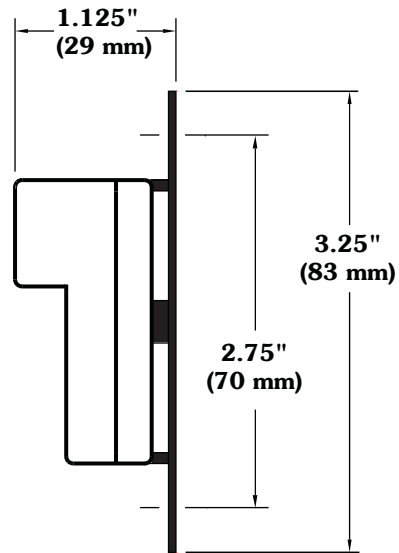
Example: (Humidity Only) HU-921-mA: OEM Humidity Sensor (unit mount) with 4-20mA output.

(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.

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

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MAMAC Systems is the leading global manufacturer of sensors, transducers, control peripherals and web browser based IP appliances. MAMAC products are used for HVAC and environmental controls, remote monitoring, alarming, energy metering and industrial automation.

All MAMAC products are manufactured in the USA.

WARRANTY: MAMAC Systems, Inc. and its subsidiaries (hereinafter referred to as MAMAC Systems) warrants its products to be free of defects in material and workmanship for a period of five (5) years from date of shipment. If a unit is malfunctioning, it must be returned to the factory for evaluation. A return authorization number (RMA) will be issued by the customer service department and this number must be written or prominently displayed on the shipping boxes and all related documents. The defective part should be shipped freight pre-paid to the factory. Upon examination by MAMAC Systems, if the unit is found to be defective, it will be repaired or replaced at no charge to the customer. However, this warranty is void if the unit shows evidence of being tampered with, damaged during installation, misapplied, misused, or used in any other operating condition outside of the unit's published specifications.

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