



RH OUTSIDE AIR

Relative Humidity, Outside Air, Thermistors

The ACI Relative Humidity with Thermistor Outside Air Series utilizes a thermoset polymer capacitive sensing element with factory applied hygroscopic filter to deliver a proportional analog current or voltage output signal. The hygroscopic filter provides added resistance to moisture, dust, and other chemicals for greater long term reliability. The RH Outside Air transmitter features integral DIP switches for field selection of the proper output signal and supply voltage to meet your applications requirements. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration also can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability. Outside Air configurations feature a

weatherproof Euro style enclosure with gasketed cover and conformally coated circuit boards for added moisture and chemical resistance. Three and Five-point NIST Calibration Certificates are available upon request but they must be ordered separately.

Applications: Monitor Outdoor Air Humidity, Economizer Control, Psychrometric calculations such as Enthalpy and Dew point, Wash down Applications

The ACI RH Thermistor Outside Air is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog

PRODUCT SPECIFICATIONS

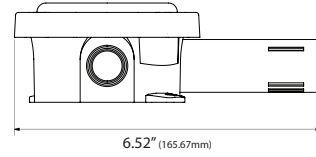
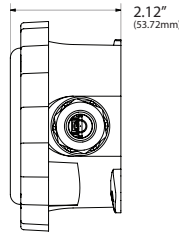
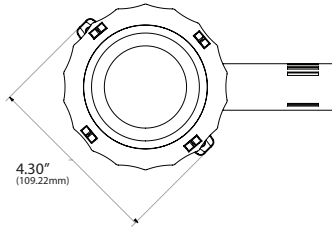
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| RH Supply Voltage (Reverse Polarity Protected): | 4-20 mA: 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC 500 Ohm Load: 18 - 40 VDC / 18 - 28 VAC | |
| RH Supply Current (VA): | 0-5 VDC: 12 - 40 VDC / 18 - 28 VAC 0-10 VDC: 18 - 40 VDC / 18 - 28 VAC | |
| RH Output Load Resistance: | Voltage Output: 8 mA maximum (0.32 VA) Current Output: 24 mA maximum (0.83 VA) | |
| RH Output Signal: | 4-20 mA: 700 Ohms maximum 0-5 VDC or 0-10 VDC: 4K Ohms Minimum | |
| RH Accuracy @ 77°F (25°C): | 2-wire: 4 - 20 mA (Factory Default) 3-wire: 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable) | |
| RH Measurement Range: | +/- 1% over 20% RH Range between 20 to 90% +/- 2%, 3%, or 5% from 10 to 95% | |
| Operating RH Range: | 0-100% | |
| Operating Temperature Range: | 0 to 95% RH, non-condensing (Conformally Coated PCB's) | |
| Storage Temperature Range: | -40 to 140°F (-40 to 60°C) | |
| RH Stability Repeatability Sensitivity: | -40 to 149°F (-40 to 65°C) | |
| RH Response Time (T63): | Less than 2% drift / 5 years 0.5% RH 0.1% RH | |
| RH Sensor Type: | 20 Seconds Typical | |
| RH Transmitter Stabilization Time: | Capacitive with Hydrophobic Filter | |
| RH Connections Wire Size: | 30 Minutes (Recommended time before doing accuracy verification) | |
| RH Terminal Block Torque Rating: | Screw Terminal Blocks (Polarity Sensitive) 16 (1.31 mm ²) to 26 AWG (0.129 mm ²) | |
| RH NIST Test Points: | 4.43 to 5.31 lb-in (0.5 to 0.6 Nm) | |
| Nominal Thermistor Resistive Output @ 77°F (25°C) (Lead Wire Colors): | Default Test Points: 3 Points (20%, 50% & 80%) or 5 Points (20%, 35%, 50%, 65% & 80%) | |
| | RHx-1.8K Series: 1.8KΩ (Red/Yellow) | RHx-10KS Series: 10KΩ (White/Blue) |
| | RHx-3K Series: 3KΩ (White/Brown) | RHx-10K-E1 Series: 10KΩ (Gray/Orange) |
| | RHx-AN Series (Type III): 10KΩ (White/White) | RHx-20K Series: 20KΩ (Brown/Blue) |
| | RHx-AN-BC Series: 5.238KΩ (White/Yellow) | RHx-50K Series: 50KΩ nominal (Brown/Yellow) |
| | RHx-CP Series (Type II): 10KΩ (White/Green) | RHx-100KS Series: 100KΩ (Black/Yellow) |
| | RHx-CSI Series: 10KΩ (Green/Yellow) | |
| Thermistor Accuracy 32-158°F (0-70°C): | +/- 0.36°F (0.2°C) except 10K-E1 Series: +/- 0.54°F (0.3°C) | |
| Thermistor Power Dissipation Constant: | 1.8K Series: +/- 0.9°F (0.5°C) @ 77°F (25°C) & +/- 1.8°F (1.0°C) from 32 to 158°F (0 to 70°C) | |
| Thermistor Sensor Response Time (T63): | 3 mW/°C except 1.8K Series: 1 mW/°C; 10K-E1 Series: 2 mW/°C | |
| Lead Wire Length Conductor Size: | 10 Seconds nominal | |
| Insulation Rating: | 14" (35.6 cm) 22 AWG (0.65 mm) | |
| Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating): | Etched Teflon (PTFE) Colored Leads Mil Spec 16878/4 Type E | |
| Sensing Tube Dimensions (Length x Diameter): | "-EH" Enclosure: ABS Plastic; UL94-V0; -40 to 140°F (-40 to 60°C) | |
| | "-4X" Enclosure: Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66) | |
| | "-EH" Models: 3.00" (76.20 mm) x 1.125" (28.75 mm) | |
| | "-4X" Models: 4.73" (120.14 mm) x 0.845" (21.46mm) | |
| Product Dimensions (L x W x D): | See drawings on back of data sheet | |
| Product Weight: | A/RHx-xx-O Series: 0.59 lbs. (0.27 kg) A/RHx-xx-O-4X Series: 0.45 lbs. (0.204 kg) | |
| Agency Approvals: | CE, RoHS2, WEEE | |



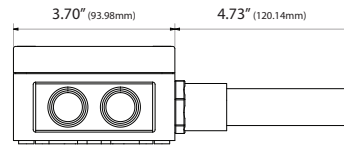
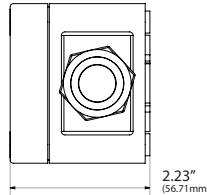
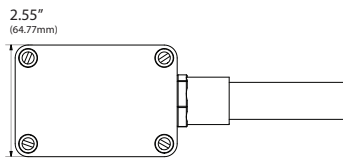


DIMENSIONAL DRAWING

Euro Enclosure [EH]



NEMA 4X Enclosure [4X]



Front View

Right View

Top View

CUSTOM ORDERING

Model # Example: A/ RH2 CP O NIST

MODEL #

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|--|--|
| A. Sensor Series <i>No Selection Required</i> | A/ → |
| B. Accuracy <i>Select One (1)</i> | RH1 = +/-1% (Specify a 20% Range between 20 to 90% RH) RH2 = +/-2% RH3 = +/-3% RH5 = +/-5% |
| C. Temperature Sensor <i>Select One (1)</i> | 1.8K 3K 10KS AN (Type III) AN-BC CP (Type II) CSI 10K-E1 20K 50K 100KS |
| D. Configuration <i>Select One (1)</i> | O = Outside Air (Euro Enclosure) O-4X = Outside Air (NEMA 4X Enclosure) |
| E. Output Signal <i>Select One (1)</i> | ---- = 4 to 20 mA (Default) 0 to 10 VDC (Field Selectable) 0 to 5 VDC (Field Selectable) |
| F. NIST (Temperature) <i>Select One (1)</i> | ---- = No NIST Certificate NIST = NIST Certificate (Must Specify 1, 3 or 5 Points) |

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| A/ |
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Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING [NIST]

Model # Example: NIST RH CERT

| Model # | Description |
|--------------|--|
| NIST RH CERT | RH Calibration Certificate (Specify 3 Point or 5 Point NIST) |

Note: When ordering NIST certificates, please add an additional line item under the corresponding A/RHx-XX-O Model Number

