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

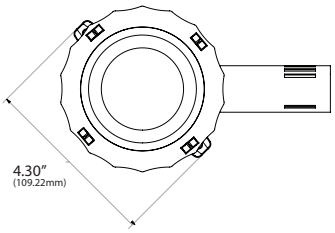
The ACI RH Thermistor Outside Air is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

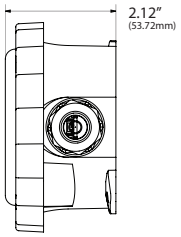
PRODUCT SPECIFICATIONS

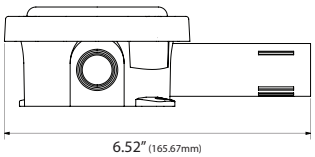
RH Supply Voltage	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC	
(Reverse Polarity Protected):	**0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC	
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)	
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum	
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)	
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%	
RH Measurement Range	0-100%	
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)	
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)	
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)	
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH	
RH Response Time (T63):	20 Seconds Typical	
RH Sensor Type:	Capacitive with Hydrophobic Filter	
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)	
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)	
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)	
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) or 5 Points (20%, 35%, 50%, 65% & 80%)	
	1% NIST Test Points: 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)	
Nominal Thermistor Resistive Output @ 77°F (25°C)	**RHx-1.8K Series:** 1.8KΩ (Red/Yellow)	**RHx-CSI Series:** 10KΩ (Green/Yellow)
(Lead Wire Colors):	**RHx-3K Series:** 3KΩ (White/Brown)	**RHx-10KS Series:** 10KΩ (White/Blue)
	RHx-AN Series (Type III): 10KΩ (White/White)	**RHx-10K-E1 Series:** 10KΩ (Gray/Orange)
	RHx-AN-BC Series: 5.238KΩ (White/Yellow)	**RHx-20K Series:** 20KΩ (Brown/Blue)
	RHx-CP Series (Type II): 10KΩ (White/Green)	**RHx-100KS Series:** 100KΩ (Black/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)	
	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 Power Dissipation Constant:	3 mW/°C except 1.8K Series: 1 mW/°C; 10K-E1 Series: 2 mW/°C	
Thermistor Sensor Response Time (T63):	10 Seconds nominal	
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)	
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E	
Enclosure Specifications (Material, Flammability,	**"-EH" Enclosure:** ABS Plastic; UL94-V0; -40 to 140°F (-40 to 60°C)	
Temperature, NEMA/IP Rating):	**"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)	
Sensing Tube Dimensions (Length x Diameter):	**"-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

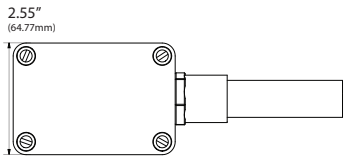
Euro Enclosure [EH]

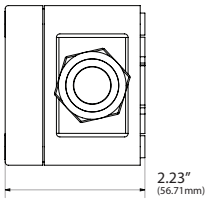


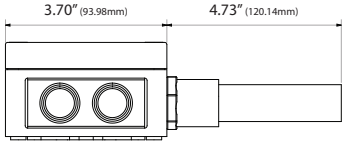




NEMA 4X Enclosure [4X]







Front View | **Right View** | **Top View**

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | CP (C.) | O (D.) | 010 (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Temperature Sensor *Select One (1)*	**1.8K** | **3K** | **10KS** | **AN** (Type III) | **AN-BC** | **CP** (Type II) | **CSI** | **10K-E1** | **20K** | **100KS**	
D. Configuration *Select One (1)*	**O** = Outside Air (Euro Enclosure) | **O-4X** = Outside Air (NEMA 4X Enclosure)	
E. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | **010** = 0 to 10 VDC | **05** = 0 to 5 VDC	
F. NIST (Temperature) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (Must Specify 1, 3 or 5 Points)	

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