



RH ROOM

Relative Humidity Room, Thermistor

The ACI Relative Humidity with Thermistor Room Series utilizes a thermoset polymer capacitive sensing element with a factory fitted hydrophobic filter to improve its moisture resistance. The sensing elements multilayer construction also provides excellent resistance in applications where dust, dirt, oils and common environmental chemicals are found. The RH room sensors include on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources. Single point field calibration can be performed by using the increment and decrement calibration DIP switches to adjust your curve up or down in +/- 0.5% increments with each toggle of the corresponding switches. These enhancements provide increased flexibility and outstanding long-term reliability without the need to replace the sensors in the field. There are two enclosure options in this series which should satisfy most

commercial decors. Both enclosures feature four-way airflow to minimize self-heating. Three and Five-point NIST Calibration Certificates are available and must be ordered separately when placing your order.

Applications: Humidification, Dehumidification, Monitoring Indoor Space Humidity, Clean Rooms, Hospitals, Access Control, Laboratories, Museums, Schools, Office Buildings, Data Centers, ESD (Anti-Static) Control

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 & 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	
Operating Temperature Range:	35 to 122°F (1.5 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) (Lead Wire Colors) Non-Linear NTC (Negative Temperature Coefficient):	RHx-1.8K Series: 1.8KΩ Nominal	RHx-CSI Series: 10KΩ Nominal
	RHx-3K Series: 3KΩ Nominal	RHx-10KS Series: 10KΩ Nominal
	RHx-AN Series (Type III): 10KΩ Nominal	RHx-10K-E1 Series: 10KΩ Nominal
	RHx-AN-BC Series: 5.238KΩ Nominal	RHx-20K Series: 20KΩ Nominal
	RHx-CP Series (Type II): 10KΩ Nominal	RHx-100KS Series: 100KΩ Nominal
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	
Temperature Connections Wire Size:	Screw Terminal Blocks (Polarity Sensitive) 16 (1.31 mm ²) to 26 AWG (0.129 mm ²)	
Temperature Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)	
Enclosure Material (Color):	"-R2" Enclosure: ABS (White) "-R" Enclosure: ABS (Beige)	
Enclosure Flammability Rating:	UL94-HB	
Product Dimensions (L x W x D):	"-R2" Enclosure: 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm)	
	"-R" Enclosure: 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm)	
Product Weight:	A/RHx-xx-R2 Series: 0.17 lbs. (0.077 kg) A/RHx-xx-R Series: 0.17 lbs. (0.077 kg)	
Agency Approvals:	CE, RoHS2, WEEE	

