



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, Process Control, Laboratories, Museums, Schools, Office Buildings, Data Centers, ESD (Anti-Static) Control

The ACI RH Thermistors Room 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.

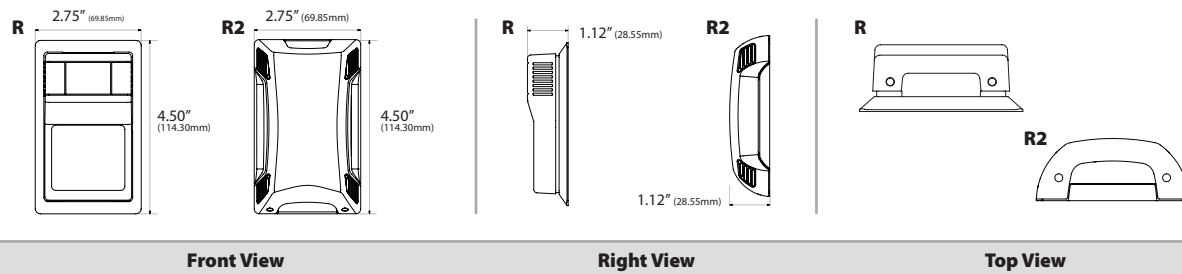
PRODUCT SPECIFICATIONS

RH Supply Voltage: (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 & 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
Storage Temperature Range:	35 to 122°F (1.5 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) Non-Linear NTC (Negative Temperature Coefficient):	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)
Thermistor Accuracy 32-158°F (0-70°C):	RHx-1.8K Series: 1.8KΩ Nominal RHx-3K Series: 3KΩ Nominal RHx-AN Series (Type III): 10KΩ Nominal RHx-AN-BC Series: 5.238KΩ Nominal RHx-CP Series (Type II): 10KΩ Nominal
Thermistor Power Dissipation Constant:	RHx-CSI Series: 10KΩ Nominal RHx-10KS Series: 10KΩ Nominal RHx-10K-E1 Series: 10KΩ Nominal RHx-20K Series: 20KΩ Nominal RHx-100KS Series: 100KΩ Nominal
Thermistor Sensor Response Time (T63):	+/- 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)
Temperature Connections Wire Size:	3 mW/°C except 1.8K Series: 1 mW/°C; 10K-E1 Series: 2 mW/°C
Temperature Terminal Block Torque Rating:	10 Seconds nominal
Enclosure Material (Color):	Screw Terminal Blocks (Polarity Sensitive) 16 (1.31 mm ²) to 26 AWG (0.129 mm ²)
Enclosure Flammability Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
Product Dimensions (L x W x D):	"-R2" Enclosure: ABS (White) "-R" Enclosure: ABS (Beige)
Product Weight:	UL94-HB
Agency Approvals:	"-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)
	A/RHx-xx-R2 Series: 0.17 lbs. (0.077 kg) A/RHx-xx-R Series: 0.17 lbs. (0.077 kg)
	CE, RoHS2, WEEE





DIMENSIONAL DRAWING



CUSTOM ORDERING

Model # Example:

A/

RH2

CP

R50

010

0 Ohms

1K Ohms

DA

+ to -

MODEL #

A. Sensor Series No Selection Required

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)

R = Room R2 = Room
 RO = Room with Override R2O = Room with Override
 RS = Room with Setpoint R2S = Room with Setpoint
 R50 = Room with Setpoint and Override R250 = Room with Setpoint and Override

E. Output Signal Select One (1)

---- = 4 to 20 mA (Default) | 010 = 0 to 10 VDC | 05 = 0 to 5 VDC

Setpoint Configuration Options Select Options below if RS, R50, R2S or R250 was selected as a Configuration (C).

1. Offset Resistor Select One (1)

0 Ohms | 51.1 Ohms | 499 Ohms | 750 Ohms | 806 Ohms | 1K Ohms | 2K Ohms
 2.49K Ohms | 4.75K Ohms | 6.19K Ohms | 7.87 Ohms | 10K Ohms | 20K Ohms

2. Potentiometer Select One (1)

400 Ohm | 1K Ohms | 2K Ohms | 5K Ohms | 8.5K Ohms | 10K Ohms
 20K Ohms | 100K Ohms

3. Setpoint Direction Select One (1)

DA = Direct Acting (Bottom to Top (Smaller to Larger))
 RA = Reverse Acting (Bottom to Top (Larger to Smaller))

4. Setpoint Indication Select One (1)

+ to - | Cool | Warm | 55 to 85F | 10-30C (R Only)
 Blue | Red (R2 Only)

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

ACCESSORIES ORDERING

Model # Example:

A/MOUNTING PLATE BEIGE R

-OR-

106821

Model #	Item #	Description
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige ("R")
A/MOUNTING PLATE WHITE R2	143369	Wall Mounting Back Plate, Plastic, White ("R2")
LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile
A/ROOM-FOAM-PAD	125690	1/8" Foam Insulation Pad with Adhesive (3" x 2", Black)

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-R/R2 Model Number