



# 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 point NIST Calibration Certificates are available.

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**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](http://www.workaci.com).**

### PRODUCT SPECIFICATIONS

<b>RH Supply Voltage:</b>	<b>4-20 mA:</b> 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC   <b>500 Ohm Load:</b> 18 - 40 VDC / 18 - 28 VAC	
<b>(Reverse Polarity Protected):</b>	<b>0-5 VDC:</b> 12 - 40 VDC / 18 - 28 VAC   <b>0-10 VDC:</b> 18 - 40 VDC / 18 - 28 VAC	
<b>RH Supply Current (VA):</b>	<b>Voltage Output:</b> 8 mA maximum (0.32 VA)   <b>Current Output:</b> 24 mA maximum (0.83 VA)	
<b>RH Output Load Resistance:</b>	<b>4-20 mA:</b> 700 Ohms maximum   <b>0-5 VDC or 0-10 VDC:</b> 4K Ohms Minimum	
<b>RH Output Signal:</b>	<b>2-wire:</b> 4 - 20 mA (Factory Default)   <b>3-wire:</b> 0-5 or 0-10 VDC & 4 - 20 mA (Field Selectable)	
<b>RH Accuracy @ 77°F (25°C):</b>	+/- 1% over 20% RH Range between 20 to 90%   +/- 2%, 3%, or 5% from 10 to 95%	
<b>RH Measurement Range:</b>	0-100%	
<b>Operating RH Range:</b>	0 to 95% RH, non-condensing	
<b>Operating Temperature Range:</b>	35 to 122°F (1.5 to 60°C)	
<b>Storage Temperature Range:</b>	-40 to 149°F (-40 to 65°C)	
<b>RH Stability   Repeatability   Sensitivity:</b>	Less than 2% drift / 5 years   0.5% RH   0.1% RH	
<b>RH Response Time (T63):</b>	20 Seconds Typical	
<b>RH Sensor Type:</b>	Capacitive with Hydrophobic Filter	
<b>RH Transmitter Stabilization Time:</b>	30 Minutes (Recommended time before doing accuracy verification)	
<b>RH Connections   Wire Size:</b>	Screw Terminal Blocks (Polarity Sensitive)   16 (1.31 mm <sup>2</sup> ) to 26 AWG (0.129 mm <sup>2</sup> )	
<b>RH Terminal Block Torque Rating:</b>	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)	
<b>RH NIST Test Points:</b>	<b>Default Test Points:</b> 3 Points (20%, 50% & 80%) <b>1% NIST Test Points:</b> 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)	
<b>Nominal Thermistor Resistive Output @ 77°F (25°C) (Lead Wire Colors) Non-Linear NTC (Negative Temperature Coefficient):</b>	<b>RHx-1.8K Series:</b> 1.8KΩ (Red/Yellow)	<b>RHx-10KS Series:</b> 10KΩ (White/Blue)
	<b>RHx-3K Series:</b> 3KΩ (White/Brown)	<b>RHx-10K-E1 Series:</b> 10KΩ (Gray/Orange)
	<b>RHx-AN Series (Type III):</b> 10KΩ (White/White)	<b>RHx-20K Series:</b> 20KΩ (Brown/Blue)
	<b>RHx-AN-BC Series:</b> 5.238KΩ (White/Yellow)	<b>RHx-50K Series:</b> 50KΩ nominal (Brown/Yellow)
	<b>RHx-CP Series (Type II):</b> 10KΩ (White/Green)	<b>RHx-100KS Series:</b> 100KΩ (Black/Yellow)
	<b>RHx-CSI Series:</b> 10KΩ (Green/Yellow)	
<b>Thermistor Accuracy 32-158°F (0-70°C):</b>	+/- 0.36°F (0.2°C) except 10K-E1 Series: +/- 0.54°F (0.3°C)	
	<b>1.8K Series:</b> +/- 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)	
<b>Thermistor Power Dissipation Constant:</b>	3 mW/°C except 1.8K Series: 1 mW/°C; 10K-E1 Series: 2 mW/°C	
<b>Thermistor Sensor Response Time (T63):</b>	10 Seconds nominal	
<b>Temperature Connections   Wire Size:</b>	Screw Terminal Blocks   16 (1.31 mm <sup>2</sup> ) to 26 AWG (0.129 mm <sup>2</sup> )	
<b>Temperature Terminal Block Torque Rating:</b>	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)	
<b>Enclosure Material (Color):</b>	<b>"-R2" Enclosure:</b> ABS (White)   <b>"-R" Enclosure:</b> ABS (Beige)	
<b>Enclosure Flammability Rating:</b>	UL94-HB	
<b>Product Dimensions (L x W x D):</b>	<b>"-R2" Enclosure:</b> 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm) <b>"-R" Enclosure:</b> 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm)	
<b>Product Weight:</b>	<b>A/RHx-xx-R2 Series:</b> 0.17 lbs. (0.077 kg)   <b>A/RHx-xx-R Series:</b> 0.17 lbs. (0.077 kg)	
<b>Agency Approvals:</b>	CE, RoHS2, WEEE	



