



# RH ROOM

## Relative Humidity Room



The ACI Relative Humidity 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.

**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 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, [workaci.com](http://workaci.com).

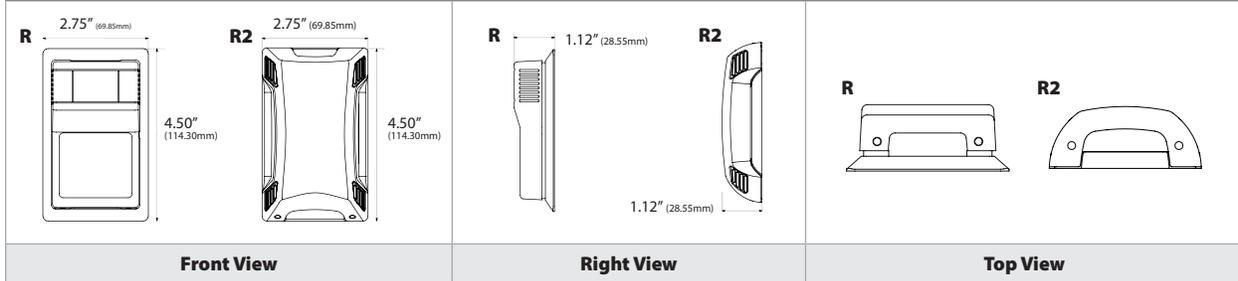
## PRODUCT SPECIFICATIONS

<b>RH Supply Voltage (Reverse Polarity Protected):</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>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 and 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>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-R2 Series:</b> 0.17 lbs. (0.077 kg)   <b>A/RHx-R Series:</b> 0.17 lbs. (0.077 kg)
<b>Agency Approvals:</b>	CE, RoHS2, WEEE





**DIMENSIONAL DRAWING**



**STANDARD ORDERING**

Model #	Item #	Description
A/RH1-R	122538	RH Room, +/- 1%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH1-R-NIST	149233	RH Room, +/- 1%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH1-R2	130822	RH Room, +/- 1%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH1-R2-NIST	149263	RH Room, +/- 1%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH2-R	122708	RH Room, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH2-R-NIST	148191	RH Room, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH2-R2	130553	RH Room, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH2-R2-NIST	145405	RH Room, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH3-R	122944	RH Room, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH3-R-NIST	148194	RH Room, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH3-R2	130554	RH Room, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH3-R2-NIST	148195	RH Room, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH5-R	123099	RH Room, +/- 5%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH5-R2	130555	RH Room, +/- 5%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)

**ACCESSORIES ORDERING**

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)