RH TT ROOM

Relative Humidity (RH), Temperature Transmitter (TT)

The ACI Relative Humidity with Temperature Transmitter Room Series utilizes a thermoset polymer capacitive sensing element with a 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 Room 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 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. The temperature transmitter must be powered with 13.5 to 24 VDC power source and can be ordered as either a two-wire 4-20 mA or 3-wire voltage output sensor. The temperature transmitter is installed on the back of the enclosure and must be mounted over a single gang junction box in the wall. There are two styling options in this series which should satisfy most commercial decors. Both styles feature four-way airflow to minimize self-heating. NIST Calibration Certificates (Temperature and RH) are included for all TTM RH part series.

Applications: Monitor Room RH Levels, Humidification, Dehumidification, Hospitals, Clean Rooms, Office Buildings, Schools, Museums, Process Control, ESD (Anti-Static) Control, Data Centers

The ACI RH TT 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.

PRODUCT SPECIFICATIONS

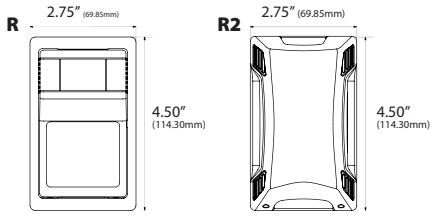
RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current 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
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%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
TT Supply Voltage | Supply Current::	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
TT Maximum Load Resistance:	(Terminal Voltage – 8.5 V) | 0.020 A
TT Output Signals:	**Current Output:** 4-20 mA (2-Wire Loop Powered) | **Voltage Output:** 1-5 VDC/2-10 VDC (3-Wire)
TT Calibrated Accuracy | Linearity [1]:	**Temperature Spans < 500°F (260°C):** +/- 0.2% | Temp Spans > 500°F (260°C): +/- 0.5%
TT Temperature Drift [2]:	**Temperature Spans < 100°F (38°C):** +/- 0.04%/°F | Temp Spans > 100°F (38°C): +/- 0.02%/°F
TTM1K Certification Points:	**3 Point NIST:** 20%, 50%, 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
TT Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Transmitter Operating Temperature/RH Range:	-40 to 185°F (-40 to 85°C) / 0 to 90% RH, non-condensing
Platinum RTD (PTC) Number Wires | Wire Colors:	Two | **A/TT100/TTM100 Series:** Brown/Brown | **A/TT1K/TTM1K Series:** Black/Black
Platinum RTD Sensor Output @ 32°F (0°C):	**A/TT100/TTM100 Series:** 100 Ohms Nominal | **A/TT1K/TTM1K Series:** 1000 Ohms Nominal
Platinum RTD Tolerance Class | Accuracy:	+/- 0.06% Class A | **Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|) where |t| is the absolute value of Temperature above or below 0°C in °C)
Platinum RTD Sensor Stability:	+/-0.03% after 1000 Hours @ 572°F (300°C)
Platinum RTD Response Time (63% Step Change):	8 Seconds nominal

PRODUCT SPECIFICATIONS

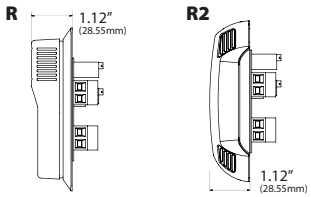
Enclosure Material (Color):	**"-R2" Enclosure:** ABS (White) | **"-R" Enclosure:** ABS (Beige)
Enclosure Flammability Rating:	UL94-HB
Product Dimensions (L x W x D):	**"-R2" Enclosure:** 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm) **"-R" Enclosure:** 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm)
Product Weight:	**A/RHx-TT-R2 Series:** 0.21 lbs. (0.096 kg) | **A/RHx-TT-R Series:** 0.21 lbs. (0.096 kg)
Agency Approvals:	RoHS2, WEEE

Note[1]: A Transmitter is calibrated at 71ºF (22ºC) Nominal | **Note[2]:** Temperature Drift is referenced to 71ºF nominal calibration temperature

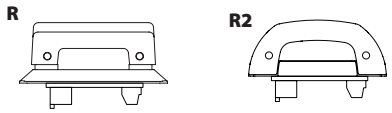
DIMENSIONAL DRAWING



Front View



Right View



Top View

CUSTOM ORDERING

Model # Example: A/ (A.) | RH1 (B.) | TT100 (C.) | R2 (D.) | 20 (E.) | -100ºF (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. Model Series *Select One (1)*	**TT100** = 100 Ohms | **TT1K** = 1K Ohms | **TTM1K** = Matched 1K Ohms (3 Point RH & Temperature NIST)	
D. Configuration *Select One (1)*	**R** = Room | **R2** = Room	
E. Transmitter Output *Select One (1)*	**4** = 4 to 20 mA | **1** = 1 to 5 VDC* | **2** = 2 to 10 VDC*	
F. Calibrated Span	**Specify Span in ºF or ºC (Best Accuracy in 100ºF Increments)**	

Note*: A Temperature Transmitter Output of 1-5 VDC or 2-10 VDC would have a RH Output of 0-5 VDC or 0-10 VDC

Note: If a 5 Point NIST is required, put -5PTNIST at the end of the part number.

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)

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	TTM Calibration Certificate (5 Point NIST)

Note: For TTM100 or TTM1K part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST' at the end of any TTM part number.