



RH TT REMOTE PROBE

Relative Humidity (RH), Temperature Transmitter (TT)

The ACI Relative Humidity with Temperature Transmitter Series Remote Probe utilizes a thermoset polymer capacitive sensing element with a hydrophobic filter to deliver a proportional relative humidity analog output and can also be configured with any resistive temperature sensor such as a thermistor or RTD. The remote probe wiring harness comes in lengths of 3, 6, 10, or 20 feet to provide mounting flexibility for your remote sensing applications. Single point field calibration can be done on the humidity transmitter, by using the increment and decrement dip switches. Each toggle of the increment and decrement switches will allow for a $\pm 0.5\%$ RH increase or decrease. Calibration of the RH transmitters electronics can also be done using both the Zero and Span potentiometers depending on

whether it is a current or voltage output device. All models feature conformally coated circuit boards to improve the reliability of the product in both high moisture and mildly corrosive atmospheres. The standard enclosure is an IP66/NEMA 4X rated moisture and corrosion resistant enclosure. A vinyl cap is provided to place over the sintered filter in applications in wash down applications to protect the sensing element from getting moisture sprayed directly on the sensor. NIST Calibration Certificates (Temperature and RH) are included for all TTM RH part series.

Applications: Clean Rooms, Process Control, Environmental Chambers, Stability Chambers, Pharmaceutical Labs, Remote Sensing Applications

ACI's RH TT Remote Probes are 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:	+/- 2%, or +/- 3% from 10 to 95% RH
Operating RH Range:	0 to 100%
Operating Temperature Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Storage Temperature Range:	-40 to 140°F (-40 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)
	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
TT Maximum Load Resistance:	250 Ohm Load: +13.5 to 32 VDC 500 Ohm Load: +18.5 to 32 VDC
TT Output Signals:	(Terminal Voltage - 8.5 V) 0.020 A
TT Calibrated Accuracy Linearity¹:	Current Output: 4-20 mA (2-Wire Loop Powered)
TT Temperature Drift²:	Voltage Output: 1-5 VDC or 2-10 VDC (3-Wires)
TTM1K Certification Points:	Temperature Spans < 500°F (260°C): +/- 0.2% Temperature Spans > 500°F (260°C): +/- 0.5%
TT Warm Up Time Warm Up Drift:	Temperature Spans < 100°F (38°C): +/- 0.04%/°F Temperature Spans > 100°F (38°C): +/- 0.02%/°F
Operating TT Temperature/RH Range:	3 Point NIST: 20%, 50%, 80% of span 5 Point NIST: 20%, 35%, 50%, 65%, 80% of span
Platinum RTD (PTC) Number Wires Wire Colors:	10 Minutes +/- 0.1%
Platinum RTD Sensor Output @ 32°F (0°C):	-40 to 185°F (-40 to 85°C) 0 to 90% RH, non-condensing
Platinum RTD Tolerance Class Accuracy:	Two A/TTM1K Series: Black/Black
	A/TTM1K Series: 1000 Ohms Nominal
	+/- 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
Sensor Lead Length:	3.0' (0.914 m), 6.0' (1.829 m), 10.0' (3.048 m), 20.0' (6.096 m)
Cable Operating Temperature Range:	32 to 167°F (0 to 75°C)
Minimum Cable Bend Radius:	1.92" (48.77 mm) or 10x the Cable Diameter
Cable Ratings Cable Jacket Material:	UL(CMP, CL3P, FPLP); CSA (CMP, FT6), Plenum Rated Polyvinyl Chloride (PVC)
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Ratings):	"-4X" Enclosure: Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Sensing Tube Material Filter Material:	304 Series Stainless Steel 304 Series Stainless Steel
Enclosure Dimensions (L x W x D):	See drawings on back of data sheet
Product Weight:	A/RHx-TTM1K-RP2-4X Series: 1.25 lbs (0.566 kg)
Agency Approvals:	RoHS2, WEEE

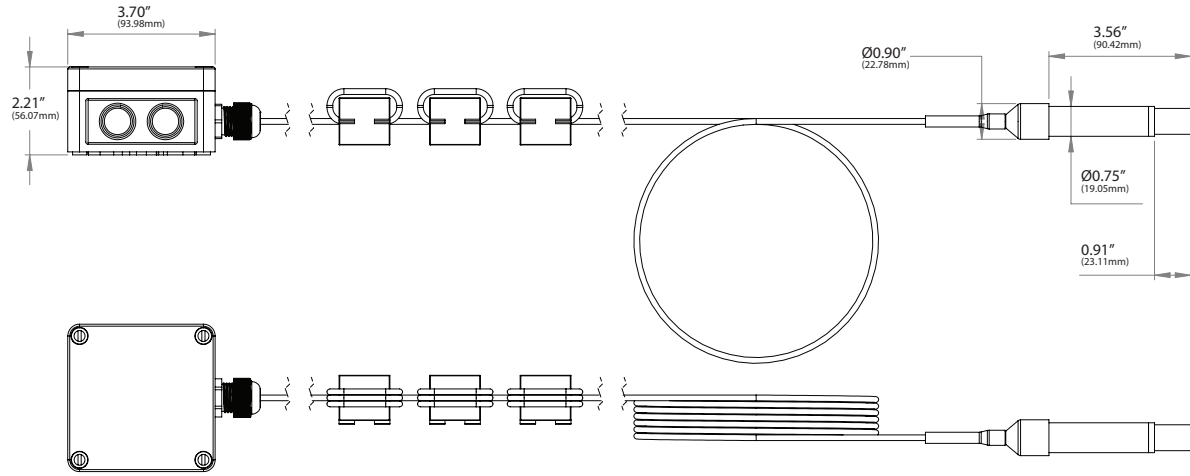
Note 1: A Transmitter is calibrated at 71°F (22°C) Nominal | **Note 2:** Temperature Drift is referenced to 71°F nominal calibration temperature





DIMENSIONAL DRAWING

Remote Probe [4X]



Standard View

CUSTOM ORDERING

Model # Example: **A/** **RH2** **TTM1K** **RP2-6'** **4X** **1** **50-150°F**

MODEL #

A. Sensor Series <i>No Selection Required</i>	A/	A/
B. Accuracy <i>Select One (1)</i>	RH1 = +/-1% RH2 = +/-2% RH3 = +/-3%	
C. Model Series <i>No Selection Required</i>	TTM1K = Matched 1K Ohms (Specify 3 or 5 Point NIST)	TTM1K
D. Configuration <i>Select One (1)</i>	RP2-3' = 3' Cable RP2-6' = 6' Cable RP2-10' = 10' Cable RP2-20' = 20' Cable	
E. Enclosure <i>No Selection Required</i>	4X = NEMA 4X Enclosure	4X
F. Transmitter Output <i>Select One (1)</i>	4 = 4 to 20 mA 1 = 1 to 5 VDC* 2 = 2 to 10 VDC*	
G. Calibrated Span	Specify Span in °F or °C (Best Accuracy in 100°F 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

ACCESSORIES ORDERING

Model # Example: **A/SINTERED FILTER** -OR- **143433**

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8" Sintered Filter for RH Duct/Stainless Plate/Remote Probes
A/1" VINYL PULL CAP	143462	1" EZ Vinyl Filter Cover for RH Stainless Plates & Remote Probes

ACCESSORIES ORDERING [NIST]

Model # Example: **NIST TTM Cert - 5PT.**

Model #	Description
NIST TTM CERT - 5PT.	TTM Calibration Certificate (5 Point NIST)

Note: When ordering NIST certificates, please add an additional line item under the corresponding A/RHx-TTMxx-RP Model Number

