



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

The ACI 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, 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 & 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% +/- 2% or 3% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
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 or 2-10 VDC (3-Wires)
TT Calibrated Accuracy Linearity ¹:	Temperature Spans < 500°F (260°C): +/- 0.2% Temperature Spans > 500°F (260°C): +/- 0.5%
TT Temperature Drift ²:	Temperature Spans < 100°F (38°C): +/- 0.04%/°F Temperature 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/TTM1K Series: Black/Black
Platinum RTD Sensor Output @ 32°F (0°C):	A/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





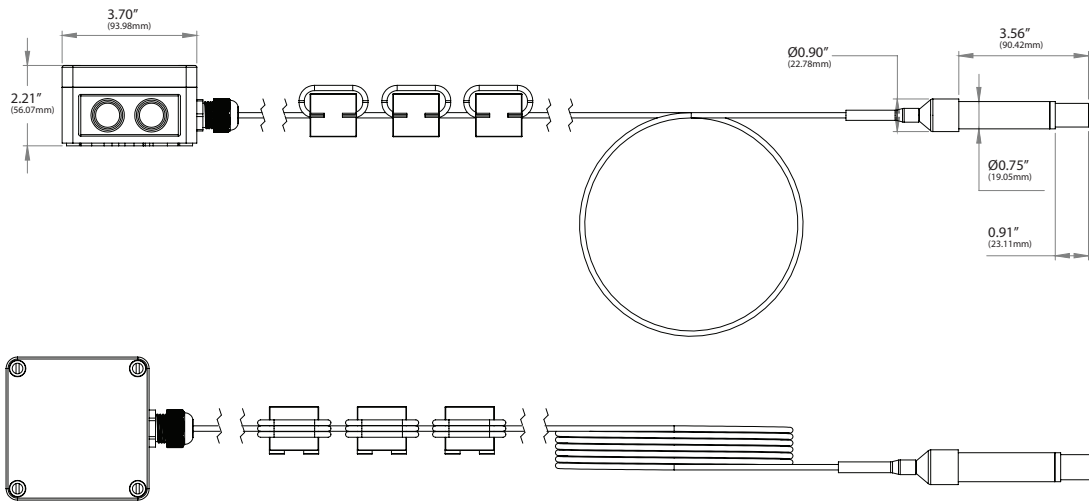
PRODUCT SPECIFICATIONS

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

Note¹: A Transmitter is calibrated at 71°F (22°C) Nominal | **Note²:** 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.	B.		C.	D.	E.	F.	G.
A. Sensor Series No Selection Required	A/						A/
B. Accuracy Select One (1)	RH1 = +/-1% (20% Range between 20 to 90% RH) RH2 = +/-2% RH3 = +/-3%						
C. Model Series No Selection Required	TTM1K = Matched 1K Ohms (3 Point RH & Temperature NIST)						TTM1K
D. Configuration Select One (1)	RP2-3' = 3' Cable RP2-6' = 6' Cable RP2-10' = 10' Cable RP2-20' = 20' Cable						
E. Enclosure No Selection Required	4X = NEMA 4X Enclosure						4X
F. Transmitter Output Select One (1)	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 #	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

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

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.

