Automation Components, Inc.

ROOM
Wall Mount Enclosures, Transmitter

R-LCD

R

R2

The ACI Transmitter Room Series features a two-wire, 4 to 20 mA loop powered output with optional 3-Wire voltage output signals available. All transmitters include Zero and Span adjustments for field calibration and are calibrated using NIST Certified Calibration equipment. ACI recommends the use of an 18 to 22 AWG shielded cable for all temperature transmitter installations to reduce the chances of noise being introduced onto the signal lines. The room transmitters are designed to be mounted over a standard single gang junction box or hole in the wall and includes a foam pad to reduce the effects of self-heating from the transmitter and thermal drafts from within the wall. For best accuracy, ACI recommends the use of the A/TTM Series Matched transmitters with 3 or 5 Point NIST Calibration Certificate, since they include a second calibration step in which the RTD and transmitter are calibrated together as a system. Optional Set Point, Override and Loop Powered LCD Display.

Applications: Space Temperature Sensing, Office Buildings, Schools, Gyms, Manufacturing Plants, Pharmaceutical, Hospitals, Data Centers

The ACI Transmitter Room transmitters 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.
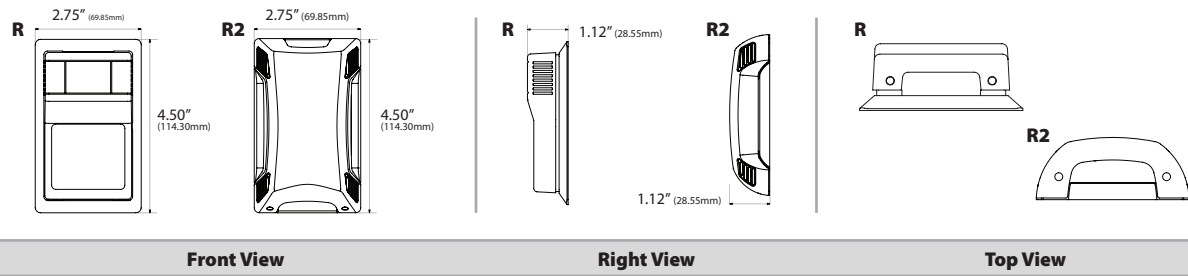
PRODUCT SPECIFICATIONS

**Transmitter 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
	"-LCD" Loop Powered: Add +7 VDC to 250/500 Ohm Load Supply Voltage above
Maximum Load Resistance:	(Terminal Voltage - 8.5 V)	0.020 A
Output Signals:	**Current:** 4-20 mA (2-Wire Loop Powered)	**Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
**Calibrated Transmitter Accuracy	Linearity[1]:**	**Temp. Spans < 500°F (260°C):** +/- 0.2%
Temperature Drift[2]:	**Temp. Spans < 100°F (38°C):** +/- 0.04%/°F	**Temp. Spans > 100°F (38°C):** +/- 0.02%
TTM100/TTM1K Certification Points:	**3 Point NIST:** 20%, 50% & 80% of span	**5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
**Warm Up Time	Warm Up Drift:**	10 Minutes	+/- 0.1%
Calibrated Temperature Spans[1]:	**Minimum Temp. Span:** 50°F (28°C)	**Maximum Temp. Span:** 200°F (93°C)
**Connections	Wire Size:**	Screw Terminal Blocks (Polarity Sensitive)	16 AWG (1.31 mm²) to 26 AWG (0.129 mm²)
Terminal Block Torque Rating:	0.37 ft-lb (0.5 N-3m) nominal
**Override Contact Type	Contact Ratings:**	Dry Contact "N/O" Contact	**Minimum:** 10 uA @ 1 VDC	**Maximum:** 50 mA @ 24 VDC
Set Point Accuracy:	+/- 10%	**4-20 mA:** 4 mA (Far Left) / 20 mA Far Right (DA- Direct Acting (Default)
	20 mA (Far Left / 4 mA Far Right (RA- Reverse Acting (Optional)
**Sensor Type	Sensor Curve	Sensing Points:**	Platinum RTD	PTC (Positive Temperature Coefficient)	One
**Number Wires	Wire Colors (TTM Series only):**	Two	**A/TTM100-R/R2:** Brown/Brown	**A/TTM1K-R/R2:** Black/Black
Nominal Sensor Output @ 0°C (32°F):	**A/TT100/TTM100-R/R2:** 100 Ohms	**A/TT1K/TTM1K-R/R2:** 1000 Ohms
**RTD Tolerance Class	Sensor 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
**Din Standard	Temperature Coefficient:**	DIN EN 60751 (IEC 751)	3850 ppm / °C
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300°C (572°F)
LCD Display Input Signal:	4 to 20 mA Only (2-wire Loop Powered)
LCD Display Accuracy:	+/- 1.0% of Calibrated Temperature Span or +/- Whichever is Greater
**LCD Display Descriptor	Number of Digits:**	°F (Fahrenheit) or °C (Celsius)	3 1/2 Segment Display
LCD Display Life Expectancy:	50,000 Hours Minimum
Operating Temperature Range[3]:	35 to 122°F (1.5 to 50°C)
Storage Temperature Range[3]:	**Non-LCD:** -40 to 65°C (-40 to 149°F), **LCD Display:** -10 to 65°C (14 to 149°F)
Operating Humidity Range:	5 to 90% RH, non-condensing
Enclosure Specifications (Material Type, Color	**"-R2" Enclosure:** ABS Plastic, White, UL94-HB
UL Flammability Rating):	**"-R" Enclosure:** ABS Plastic, Beige , UL94-HB
**Foam Pad Material	Flammability Rating (TTM Only):**	Neoprene/EPDM/SBR Polymer	UL94-HBF; FMVSS-302; MIL-R-6130C
Product Dimensions:	4.50" (114.3 mm) x 2.78" (70.6 mm) x 1.00" (25.4 mm)
Product Weight:	**"-R/RS/RO" Series:** 0.17 lbs. (0.375 kg)	**"-RSO" Series:** 0.21 lbs. (0.46 kg)
	"-R2/R2S/R2O" Series: 0.19 lbs. (0.42 kg)	**"-R2SO" Series:** 0.23 lbs. (0.51kg)
	All LCD Display Units: 0.174 lbs. (0.079 kg)
Agency Approvals:	RoHS2, WEEE

Note[1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note[2]:** Temperature Drift is referenced to 71°F nominal calibration temperature | **Note[3]:** Temperature spans may go outside of the operating temperature range but the unit must be used within the operating temperature limit

RoHS COMPLIANT 2002/95/EC

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DIMENSIONAL DRAWING

R 2.75" (69.85mm)   R2 2.75" (69.85mm)   R 1.12" (28.55mm)   R2   R

4.50" (114.30mm)   4.50" (114.30mm)   1.12" (28.55mm)   R2

| Front View | Right View | Top View |

CUSTOM ORDERING | STANDARD ACCURACY

Model # Example: A/ | TT100 | R2SO | 4 | LCD | 40 to 90°F | 4-20 mA | 10 to 30C
A. | B. | C. | D. | E. | F. | 1. | 2.

		MODEL #
A. Sensor Series *No Selection Required*	A/ ➝	A/
B. Model Series *Select One (1)*	**TT100** = 100 Ohm Platinum RTD │ **TT1K** = 1K Ohm Platinum RTD	
C. Configuration *Select One (1)*	**R** = Room │ **RO** = Room with Override │ **RS** = Room with Set Point **RSO** = Room with Set Point and Override │ **R2** = Room │ **R2O** = Room with Override **R2S** = Room with Set Point │ **R2SO** = Room with Set Point and Override	
D. Output Signal *Select One (1)*	**1** = 1 to 5 VDC │ **2** = 2 to 10 VDC │ **4** = 4 to 20 mA	
E. LCD Display *Select One (1)*	**----** = No LCD Display │ **LCD** = With LCD Display	
F. Calibrated Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	
Setpoint Configuration Options *Select Options below if RS, RSO, R2S or R2SO was selected as a Configuration (C).*		
1. Potentiometer *Select One (1)*	**4-20 mA**	
2. Setpoint Indication *Select One (1)*	**+ to -** │ **Blue│Red** │ **Cool│Warm** │ **Cooler│Warmer** │ **10 to 30C** │ **18 to 28C** │ **55 to 85F**	

Note*: Best transmitter accuracy with spans in 100°F Increments (ie. 0 to 100°F or 1.5 to 40°C)

CUSTOM ORDERING | HIGHER ACCURACY

Model # Example: A/ | TTM1K | R | 4 | 0 to 100°F | 5 Point
A. | B. | C. | D. | E. | F.

		MODEL #
A. Sensor Series *No Selection Required*	A/ ➝	A/
B. Model Series *Select One (1)*	**TTM100** = Matched 100Ω Platinum RTD* │ **TTM1K** = Matched 1KΩ Platinum RTD*	
C. Configuration *Select One (1)*	**R2** = Room │ **R** = Room	
D. Output Signal *Select One (1)*	**1** = 1 to 5 VDC │ **2** = 2 to 10 VDC │ **4** = 4 to 20 mA	
E. Calibrated Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note*: For TTM100 or TTM1k part numbers, the default NIST is 3 points │ 5 points may be requested by adding the part number listed below (NIST TTM CERT - 5PT.) There is a surcharge of $25 to upgrade to 5 point calibration

ACCESSORIES ORDERING

Model # Example: A/MOUNTING PLATE BEIGE R -OR- 106821

Model #	Item #	Description
NIST TTM CERT-5PT.	129743	5 Point Calibration & Certificate
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige ("R")
A/MOUNTING PLATE WHITE R	126386	Wall Mounting Back Plate, Plastic, White ("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)