

FREEZER

Remote Freezer Transmitters

The ACI RTD Freezer Series features a 3/16" diameter stainless steel probe with a 10 Foot or 30 Foot, 3 Conductor, 24 AWG Plenum rated jacketed Teflon cable. The sensor is designed to be used in Pharmaceutical, Liquid Nitrogen, Freezers, Refrigerators and Hydronic applications where a remote sensor is required. Optional "-GD" galvanized, "-BB" Aluminum, or "-4X" NEMA 4X weather proof plastic enclosures are available as well as NIST Certificates as referenced on the back of the product data sheet. A/TT Series transmitter accuracies must be calculated using both the calibration accuracy of the transmitter and the sensor accuracy over your applications operating temperature range. For higher accuracies, the A/TTM Series includes a secondary calibration process designed to eliminate most of the sensor error from the overall system accuracy.

Any Freezer Transmitter can be used with the Single or Triple Point Glycol Kits when a Thermal Buffer (slower) response time is desired.

Applications: Pharmaceutical, Liquid Nitrogen, Refrigerators, Freezers, Hydronic Heating, Remote Sensor Applications

The ACI Transmitter Freezer Series 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, www.workaci.com.

PRODUCT SPECIFICATIONS

Transmitter Supply Voltage Current:	+13.5 to 32 VDC into 250 Ohm Load (Reverse Polarity Protected) 25 mA minimum +18.5 to 32 VDC into 500 Ohm Load
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) 0.020 A (775 Ohms @ 24 VDC)
Output Signals:	Current: 4-20 mA (2-Wire Loop Powered) Voltage: 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Transmitter Accuracy Linearity:	Temp. Spans < 500°F (260°C): +/- 0.2% Temp. Spans > 500°F (260°C): +/- 0.5%
Temperature Drift:	Temp. Spans < 100°F (38°C): +/- 0.04%/°F Temp. Spans > 100°F (38°C): +/- 0.02%
Warm Up Time Warm Up Drift:	10 Minutes +/- 0.1%
Operating Storage Temperature Range:	-40°F (-40°C) to 185°F (85°C)
Operating Humidity Range:	0 to 90%, non-condensing
Calibrated Temperature Spans:	Minimum Temp. Span: 50°F (28°C) Maximum Temp. Span: 1000°F (538°C)
Matched Calibrated Temperature Spans (A/TTM models) Range:	-45 to 155°C (-49 to 311°F)
Connections Wire Size:	Screw Terminal Blocks (Non-Polarity Sensitive) 16 AWG (1.31 mm ²) to 26 AWG (0.129 mm ²)
Terminal Block Torque Rating:	0.5 Nm nominal
Sensor Type Sensor Curve:	Platinum RTD Linear, PTC (Positive Temperature Coefficient)
Number Wires:	Three Conductors (White and Two Red Wires); Polarity Sensitive (Red wires tied together)
Sensor Output @ 0°C (32°F):	A/TT/TTM100-LTS Series: 100 Ohms nominal A/TT/TTM1K-LTS Series: 1000 Ohms nominal
RTD Tolerance Class¹:	Class B Accuracy Formula: +/- °C = (+/- 0.30°C + (0.005 x t))
Sensor Accuracy:	-200°C (-328°F): +/- 1.30°C (+/- 2.34°F) 0°C (-32°F): +/- 0.30°C (+/- 0.54°F)
Temperature Coefficient Din Standard:	3850 ppm / °C DIN EN 60751 (IEC 751)
Stability:	< 0.04% @ 1000 hours @ 400°C (752°F)
Response Time (63% Step Change):	15 Seconds nominal
Pressure Test:	20 PSI (1.38 Bars) maximum
Sensor Operating Temperature Range:	-200 to 200°C (-328 to 392°F)
Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings):	"-GD" Enclosure: -40 to 100°C (-40 to 212°F); Galvanized Steel; NEMA 1 (IP10) "-BB" Enclosure: Aluminum, -40 to 121°C (-40 to 250°F), Plenum Rated, NEMA 3R (IP 14) "-4X" Enclosure: -40 to 70°C (-40 to 158°F); Polystyrene Plastic; UL94-V2; NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 80°C (-40 to 176°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Cable Gland (Fitting) Size Hole Size Material:	PG7 15 mm (0.591") Polyamide 6
Cable Gland Sleeve Material Wire Clamping Size:	Neoprene 0.098" (2.5 mm) to 0.256" (6.5 mm)
Cable Gland IP Rating Torque Rating:	IP 68 (NEMA 6P) 2.5 Nm (22.127 lb. inch)
Probe Material Length Diameter:	316 Stainless Steel 2" (50.8 mm) 0.1875" (4.76 mm) nominal
Lead Length Cable Diameter:	10' (3.05 m) or 30' (9.15 m) 0.106" nominal (2.69 mm)
Conductor Size Conductor Material:	24 AWG (0.51 mm) Silver Plated Copper
Lead Wire Insulation Jacket Color:	FEP/FEP (Teflon) Jacketed Cable White
Product Weights:	A/TT/TTMxxx-LTS-BB-10': 0.84 lbs (0.39 kg) A/TT/TTMxxx-LTS-BB-30': 1.04 lbs (0.48 kg) A/TT/TTMxxx-LTS-4X-10': 0.42 lbs (0.19 kg) A/TT/TTMxxx-LTS-4X-30': 0.62 lbs (0.29 kg)

Agency Approvals:

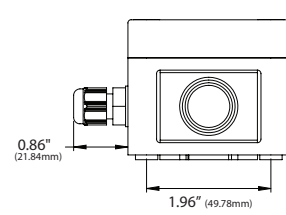
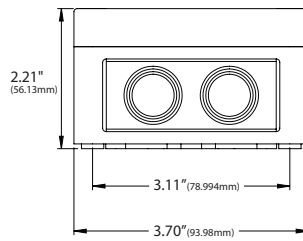
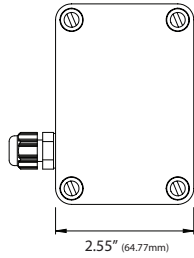
Note¹: Transmitter's calibrated at 71°F (22°C) nominal | **Note²:** Where t is the Absolute Value of temperature in Centigrade above or below 0°C



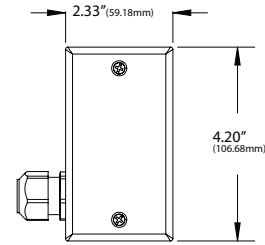
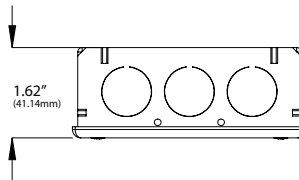
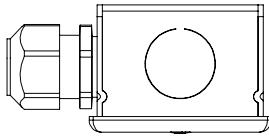


DIMENSIONAL DRAWING

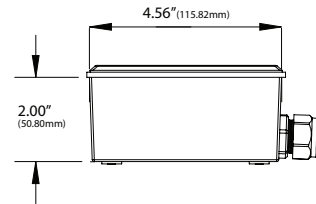
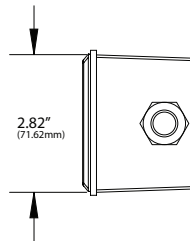
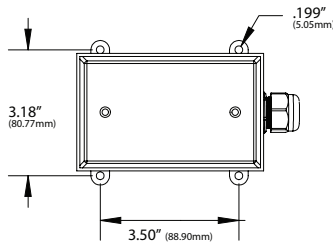
NEMA 4X Enclosure [4X]



Galvanized Enclosure [GD]



Bell Box Enclosure [BB]



Front View

Right View

Top View

OPTIONAL SENSOR ORDERING

Model # Examples: A/ TT100 LTS 1 GD 10' 10'

MODEL #

A. Sensor Series No Selection Required	A/ _____	A/
B. Model Series Select One (1)	TT100 = 100Ω RTD TTM100 = Matched 100Ω RTD (Specify 3 or 5 Point NIST)* TT1K = 1KΩ RTD TTM1K = Matched 1KΩ RTD (Specify 3 or 5 Point NIST)*	
C. Configuration No Selection Required	LTS = Freezer Sensor _____	LTS
D. Output Signal Select One (1)	1 = 1 to 5 VDC (3-Wire) 2 = 2 to 10 VDC (3-Wire) 4 = 4 to 20 mA (2-Wire Loop Powered)	
E. Enclosure Select One (1)	GD = Galvanized Enclosure BB = NEMA 3R Enclosure 4X = NEMA 4X Enclosure	
F. Lead Length Select One (1)	10' = 10 Feet Leads (3.05 m) 30' = 30 Feet (9.15m)	
G. 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: NIST TTM CERT-SPT. -OR- 129743

Model #	Item #	Description
NIST TTM CERT-SPT.	129743	5 Point Calibration & Certificate

