TEMPERATURE | TRANSMITTERS | BULLET PROBE



BULLET PROBE

Remote Probes with Transmitters

The ACI Transmitter Bullet Probe Series features a two-wire, 4 to 20 mA loop powered output signal with an optional 3-Wire voltage output signal available. All transmitters include Zero and Span adjustments for field calibration and are calibrated using NIST Certified Calibration equipment. We recommend the use of an 18 to 22 AWG shielded cable for all temperature transmitter installations to help eliminate the possibility of noise

being introduced onto the signal lines. The sensor assemblies are manufactured using a 2 conductor unshielded FEP/FEP Plenum rated, unshielded cable and ACI's proven double encapsulation process to eliminate the effects of moisture on the sensors as well as increased response times using our high quality, thermally conductive epoxy. The Bullet Probe remote sensors include an optional 10 or 20 Foot Plenum rated cable for use in remote sensor applications. All TT100 and TT1K Series Bullet Probe transmitter's sensor leads may be shortened in the field as needed but all Matched TTM100 and TTM1K Series transmitter's sensor leads should not be shortened due to the affect that it would have on the calibration accuracy of the sensor and transmitter. Optional NEMA/IP rated weather proof enclosures are available as specified on the back of the product data sheet. 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.

Applications: Chilled Water Systems, Hot Water Systems, Boilers, Pumps, Compressors, Chillers, Remote Sensing, Process Control

The ACI Transmitter Bullet Probe 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 web site, workaci.com.

Thermal Drift ² : Temp. Spans < 100°F (38°C): +/- 0.04%/°F Temp. Spans > 100°F (38°C): +/- 0.02% Min./Max. Calibrated Temperature Spans: Minimum Temp. Span: 50°F (28°C) Maximum Temp. Span: 400°F (204°C) 45 to 155°C (-49 to 311°F) -45 to 155°C (-49 to 311°F) -47 to 105°C (-49 to 311°F) -47 to 105°C (-40 to 311°F) -48 to 155°C (-40 to 311°F) -49 to 200°C (-40 to 392°F) Transmitter Operating Temperature Range: -40 to 200°C (-40 to 392°F) Transmitter Operating Humidity Range: -40 to 200°C (-40 to 392°F) Transmitter Operating Humidity Range: -40 to 200°C (-40 to 392°F) Transmitter Operating Humidity Range: -40 to 200°C (-40 to 392°F) Transmitter Operating Humidity Range: -40 to 50°C (-40 to 392°F) Transmitter Operating Humidity Range: -40 to 90°C (-40 to 392°F) Transmitter Operating Humidity Range: -40 to 90°C (-40 to 392°F) -40 to 90°C (-40 to 392°F) -40 to 80°C (-40 to 180°C) -40 to 80°C (-40 to 185°F) -40 to 80°C (-40 to 185°F) -40 to 80°C (-40 to 185°F) -40 to 180°C (-40 to 185°F) -40 to 180°C (-40 to 185°F) -40 to 180°C (-40 to 188°F) -40 to 80°C (-40 to 188°F) -40 to 180°C -40 to 180°C	PRODUCT SPECIFICATIONS		
Agricultion Currents Currents Carrents Carre	Transmitter Supply Voltage Supply	+8.5 to 32 VDC (Reverse Polarity Protected) 25 mA minimum	
Output Signals: Current: 4-20 mA (2-Wire Loop Powered) Voltage: 1-5 VPC or 2-10 VDC (3-Wires) Calibrated Accuracy Linearity¹: Temp. Spans < 500°F (260°C): +/- 0.02% Thermal Drift²: Temp. Spans < 100°F (38°C): +/- 0.04%/°F Temp. Spans > 100°F (38°C): +/- 0.02% Miniman Scalibrated Temperature Spans (A/TTM models) Range: Miniman Temp. Span: 50°F (28°C) Maximum Temp. Span: 400°F (204°C) Matched Calibrated Temperature Spans (A/TTM models) Range: 45 to 155°C (49 to 311°F) Marm Up Time Warm Up Drift: 10 Minutes +/- 0.1% Transmitter Operating Temperature Range: 40 to 200°C (40 to 392°F) Transmitter Operating Humidity Range: 0 to 90%, non-condensing 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 Nm) nominal Sensor Type Sensor Curve Sensing Points: Platinum RTD PTC (Positive Temperature Coefficient) One Number Wires Wire Colors: Two Red and Black (Non Polarity Sensitive) Sensor Output @ 0°C (32°F): A/TT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal A/TT16/TTM1K Series: 1000 Ohms nominal A/TT1		250 Ohm Load: +13.5 to 32 VDC 500 Ohm Load: +18.5 to 32 VDC	
Temp. Spans < 500°F (260°C): +/- 0.2%	Maximum Load Resistance:	(Terminal Voltage - 8.5 V) 0.020 A	
Thermal Drift²: Temp. Spans < 100°F (38°C): +/- 0.04%/°F Temp. Spans > 100°F (38°C): +/- 0.02% Min./Max. Calibrated Temperature Spans: Minimum Temp. Spans: 50°F (28°C) Maximum Temp. Span: 400°F (204°C) Matched Calibrated Temperature Spans: All inimum Temp. Spans: 50°F (28°C) Maximum Temp. Span: 400°F (204°C) Marm Up Time Warm Up Drift: 3 Point NIST: 20%, 50% & 80% of span 5 Point NIST: 20%, 35%, 50%, 65%, 80% of span Transmitter Operating Temperature Range: 40 to 200°C (-40 to 392°F) Transmitter Operating Humidity Range: 0 to 90%, non-condensing 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 Nm) nominal Sensor Type Sensor Curve Sensing Points: Platinum RTD PTC (Positive Temperature Coefficient) One Number Wires Wire Colors: Two Red and Black (Non Polarity Sensitive) Sensor Output @ 0°C (32°F): A/TT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal RTD Tolerance Class Accuracy: In Endoson (Tolerance Formula: +/- °C = (0.15°C + (0.002° † t)) Webson Operating Temperature Coefficient: DIN EN 60751 (IEC 751) 3850 ppm / °C Sensor Stability: +/- 0.03% after 1000 Hours @ 300°C (572°F) Sensor Operating Temp	Output Signals:	Current: 4-20 mA (2-Wire Loop Powered) Voltage: 1-5 VDC or 2-10 VDC (3-Wires)	
Min./Max. Calibrated Temperature Spans: Matched Calibrated Temperature Spans (A/TTM models) Range: 45 to 155°C (-49 to 311°F) 47 to 10 10 Minutes +/- 0.1% Transmitter Operating Temperature Range: 10 Minutes +/- 0.1% 10	Calibrated Accuracy Linearity¹:	Temp. Spans < 500°F (260°C): +/- 0.2%	
Matched Calibrated Temperature Spans (A/TTM models) Range: 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% Transmitter Operating Temperature Range: -40 to 200°C (-40 to 392°F) Transmitter Operating Humidity Range: Onnections 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 Nm) nominal Sensor Type Sensor Curve Sensing Platinum RTD PTC (Positive Temperature Coefficient) One Number Wires Wire Colors: Two Red and Black (Non Polarity Sensitive) Sensor Output @ 0°C (32°F): A/TT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal RTD Tolerance Class Accuracy: 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: Response Time (63% Step Change): Sensor Operating Temperature Range: -40 to 150°C (-40 to 302°F) Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings): "-GD" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 1 (IP10) "-PB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), UL94-HB, Plenum Rated "-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), UL94-HB, Plenum Rated "-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), UL94-HB, Plenum Rated "-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) "-40" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: -50 to 95% RH, non-condensing Probe Diameter Probe Material: -50 to 95% RH, non-condensing Polysmide 6.6 UL94-V2 Cord Grip Fitting Material Flammability Polyamide 6.6 UL94-V2 Cord Grip Seal Material NEMA/IP Rating: Cord Grip Seal Material NEMA/IP Rating: Cord Grip Seal Material NEMA/IP Rating:	Thermal Drift ² :	Temp. Spans < 100°F (38°C): +/- 0.04%/°F Temp. Spans > 100°F (38°C): +/- 0.02%	
(A/TTM models) Range: -45 to 155% (-49 to 311%) 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% 10 Worm Up Time Warm Up Drift: 10 Minutes +/- 0.1% 10 Worm Up Time Warm Up Drift: 10 Minutes +/- 0.1% 10 Worm Up Time Warm Up Drift: 10 Minutes +/- 0.1% 10 Worm Up Time Warm Up Drift: 10 Minutes +/- 0.1% 10 Worm Up Time Warm Up Drift: 10 Minutes +/- 0.1% 10 Worm Up Time Warm Up Drift: 10 Minutes +/- 0.1% 11 Mode Warm Up Time Warm Up Drift: 11 Mode Warm Up Time Warm Up Drift: 12 Serew Terminal Blocks (Polarity Sensitive) 16 AWG (1.31 mm2) to 26 AWG (0.129 mm2) 13 Ft-1b (0.5 Nm) nominal 14 Drift Warm Up Drift: 15 Ensor Type Sensor Curve Sensing Platinum RTD PTC (Positive Temperature Coefficient) One 16 Platinum RTD PTC (Positive Temperature Coefficient) One 17 Wor Red and Black (Non Polarity Sensitive) 18 Sensor Output @ 0°C (32°F): 29 ATT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal 20 ATT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal 20 ATT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal 20 ATT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal 21 ATT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal 22 ATT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal 23 ATT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal 24 - 0.05% Class A (Tolerance Formula: +/- © = (0.15°C + (0.002° t)) 25 Were tile the absolute value of temperature above or below 0°C in °C) 26 Din Standard Temperature Range:	Min./Max. Calibrated Temperature Spans:	Minimum Temp. Span: 50°F (28°C) Maximum Temp. Span: 400°F (204°C)	
Warm Up Time Warm Up Drift: 10 Minutes +/- 0.1% Transmitter Operating Temperature Range: -40 to 200°C (-40 to 392°F) Transmitter Operating Humidity Range: 0 to 90%, non-condensing 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 Nm) nominal Sensor Type Sensor Curve Sensing Platinum RTD PTC (Positive Temperature Coefficient) One Number Wires Wire Colors: Two Red and Black (Non Polarity Sensitive) Sensor Output @ 0°C (32°F): A/TT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal A/TD10/TTM100 Series: 100 Ohms nominal A/TD10/TTM1K Series: 1000 Ohms nominal A/TD10/TTM100 Series: 100 Ohms nominal A/TD10/TTM1K Series: 1000 Ohms nominal A/TD10/TTM	• •	-45 to 155°C (-49 to 311°F)	
Transmitter Operating Temperature Range: -40 to 200°C (-40 to 392°F) Transmitter Operating Humidity Range: 0 to 90%, non-condensing 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 Nm) nominal Sensor Type Sensor Curve Sensing Platinum RTD PTC (Positive Temperature Coefficient) One Number Wires Wire Colors: Two Red and Black (Non Polarity Sensitive) Sensor Output @ 0°C (32°F): A/TT100/TTM100 Series: 100 Ohms nominal A/TT1K/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) Din Standard Temperature Coefficient: DIN EN 60751 (IEC 751) 3850 pm/ °C Sensor Stability: +/- 0.03% after 1000 Hours @ 300°C (572°F) Response Time (63% Step Change): 8 Seconds nominal Sensor Operating Temperature Range: -40 to 150°C (-40 to 302°F) "-GD" Enclosure: Galvanized Steel, -40 to 85°C (-40 to 185°F), NEMA 1 (IP10) "-PB" Enclosure: Galvanized Steel, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) "-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) "-4X" Enclosure: Polystyrene Plastic, -30 to 85°C (-40 to 155°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: 5 to 95% RH, non-condensing Cord Grip Fitting Material Flammability Rating: Neoprene IP68 (NEMA 4X)	TTM100/TTM1K Certification Points:	3 Point NIST: 20%, 50% & 80% of span 5 Point NIST: 20%, 35%, 50%, 65%, 80% of span	
Transmitter Operating Humidity Range: Connections Wire Size: Crew Terminal Blocks (Polarity Sensitive) 16 AWG (1.31 mm2) to 26 AWG (0.129 mm2) Terminal Block Torque Rating: O.37 ft-lb (0.5 Nm) nominal Sensor Type Sensor Curve Sensing Points: Number Wires Wire Colors: Two Red and Black (Non Polarity Sensitive) Sensor Output @ 0°C (32°F): A/TT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal A/TT10/TTM1K Series: 1000 Ohms nominal A/TT10/TTM1C Series: 1000 Ohms nominal A/TT10/TTM1C Series: 1000 Ohms nominal A/TT10/TTM1C Series: 1000 Ohms nominal A/T	Warm Up Time Warm Up Drift:	10 Minutes +/- 0.1%	
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 Nm) nominal Sensor Type Sensor Curve Sensing Points: Two Red and Black (Non Polarity Sensitive) Number Wires Wire Colors: Two Red and Black (Non Polarity Sensitive) Sensor Output @ 0°C (32°F): A/TT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal ***P'- 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) Response Time (63% Step Change): 8 Seconds nominal Sensor Operating Temperature Range: -40 to 150°C (-40 to 302°F) ***GD" Enclosure: Galvanized Steel, -40 to 85°C (-40 to 185°F), NEMA 1 (IP10) **"-PB" Enclosure: ABS Plastic, -30 to 85°C (-40 to 185°F), NEMA 3R (IP 14) *"-AX" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -50 to 95% RH, non-condensing Probe Diameter Probe Material: 0.250° (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Rating: Polysmide 6.6 UL94-V2 Cord Grip Fitting Material NEMA/IP Rating: Neoprene IP68 (NEMA 4X)	Transmitter Operating Temperature Range:	-40 to 200°C (-40 to 392°F)	
Terminal Block Torque Rating: 0.37 ft-lb (0.5 Nm) nominal Sensor Type Sensor Curve Sensing Points: Platinum RTD PTC (Positive Temperature Coefficient) One Number Wires Wire Colors: Two Red and Black (Non Polarity Sensitive) Sensor Output @ 0°C (32°F): A/TT100/TTM100 Series: 100 Ohms nominal A/TT1K/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) Din Standard Temperature Coefficient: DIN EN 60751 (IEC 751) 3850 ppm / °C Sensor Stability: +/- 0.03% after 1000 Hours @ 300°C (572°F) Response Time (63% Step Change): 8 Seconds nominal Sensor Operating Temperature Range: -40 to 150°C (-40 to 302°F) **-GD" Enclosure: AlbS Plastic, -30 to 85°C (-40 to 185°F), NEMA 1 (IP10) "-PB" Enclosure: AlbS Plastic, -30 to 85°C (-40 to 185°F), NEMA 3R (IP 14) "-BB" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: 0.250° (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Polyamide 6.6 UL94-V2 Cord Grip Seal Material NEMA/IP Ratings: Neoprene IP68 (NEMA 4X)	Transmitter Operating Humidity Range:	0 to 90%, non-condensing	
Sensor Type Sensor Curve Sensing Points: Platinum RTD PTC (Positive Temperature Coefficient) One Number Wires Wire Colors: Two Red and Black (Non Polarity Sensitive) Sensor Output @ 0°C (32°F): A/TT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal Temperature Coefficient: 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) Din Standard Temperature Coefficient: DIN EN 60751 (IEC 751) 3850 ppm / °C Sensor Stability: +/- 0.03% after 1000 Hours @ 300°C (572°F) Response Time (63% Step Change): 8 Seconds nominal Sensor Operating Temperature Range: -40 to 150°C (-40 to 302°F) **-GD" Enclosure: ABS Plastic, -30 to 85°C (-40 to 185°F), NEMA 1 (IP10) "-PB" Enclosure: ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated "-BB" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: 0.250" (6.35mm) 304 Stainless Steel Cord Grip Fitting Material NEMA/IP Rating: Polyamide 6.6 UL94-V2 Cord Grip Fitting Material NEMA/IP Rating: Neoprene IP68 (NEMA 4X)	Connections Wire Size:	Screw Terminal Blocks (Polarity Sensitive) 16 AWG (1.31 mm2) to 26 AWG (0.129 mm2)	
Points:	Terminal Block Torque Rating:	0.37 ft-lb (0.5 Nm) nominal	
Sensor Output @ 0°C (32°F): A/TT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal H/- 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 +/- 0.03% after 1000 Hours @ 300°C (572°F) Response Time (63% Step Change): Sensor Operating Temperature Range: -40 to 150°C (-40 to 302°F) "-GD" Enclosure: Galvanized Steel, -40 to 85°C (-40 to 185°F), NEMA 1 (IP10) "-PB" Enclosure: ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated "-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) "-4X" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: Probe Diameter Probe Material: 0.250" (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Rating: Neoprene IP68 (NEMA 4X)	7. 1	Platinum RTD PTC (Positive Temperature Coefficient) One	
### ### #############################	Number Wires Wire Colors:	Two Red and Black (Non Polarity Sensitive)	
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) 8 Seconds nominal Sensor Operating Temperature Range: -40 to 150°C (-40 to 302°F) **GD" Enclosure: Galvanized Steel, -40 to 85°C (-40 to 185°F), NEMA 1 (IP10) **PB" Enclosure: ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated **BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) **-4X" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: Cord Grip Fitting Material Flammability Rating: Neoprene IP68 (NEMA 4X)	Sensor Output @ 0°C (32°F):	A/TT100/TTM100 Series: 100 Ohms nominal A/TT1K/TTM1K Series: 1000 Ohms nominal	
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 +/- 0.03% after 1000 Hours @ 300°C (572°F) 8 Seconds nominal Sensor Operating Temperature Range: -40 to 150°C (-40 to 302°F) "-GD" Enclosure: Galvanized Steel, -40 to 85°C (-40 to 185°F), NEMA 1 (IP10) "-PB" Enclosure: ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated "-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) "-4X" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: 0.250" (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Rating: Neoprene IP68 (NEMA 4X)	RTD Tolerance Class Accuracy:	+/- 0.06% Class A (Tolerance Formula: +/- $^{\circ}$ C = (0.15 $^{\circ}$ C + (0.002 * t))	
Sensor Stability: +/- 0.03% after 1000 Hours @ 300°C (572°F) Response Time (63% Step Change): 8 Seconds nominal Sensor Operating Temperature Range: -40 to 150°C (-40 to 302°F) "-GD" Enclosure: Galvanized Steel, -40 to 85°C (-40 to 185°F), NEMA 1 (IP10) "-PB" Enclosure: ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated "-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) "-4X" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: 0.250" (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Rating: Neoprene IP68 (NEMA 4X)		where $ t $ is the absolute value of temperature above or below 0°C in °C)	
Response Time (63% Step Change): Sensor Operating Temperature Range: -40 to 150°C (-40 to 302°F) "-GD" Enclosure: Galvanized Steel, -40 to 85°C (-40 to 185°F), NEMA 1 (IP10) "-PB" Enclosure: ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated "-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) "-4X" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: 0.250" (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Rating: Neoprene IP68 (NEMA 4X)	Din Standard Temperature Coefficient:	DIN EN 60751 (IEC 751) 3850 ppm / °C	
Sensor Operating Temperature Range: -40 to 150°C (-40 to 302°F) "-GD" Enclosure: Galvanized Steel, -40 to 85°C (-40 to 185°F), NEMA 1 (IP10) "-PB" Enclosure: ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated "-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) "-4X" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: 0.250" (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Rating: Neoprene IP68 (NEMA 4X)	Sensor Stability:	+/- 0.03% after 1000 Hours @ 300°C (572°F)	
"-GD" Enclosure: Galvanized Steel, -40 to 85°C (-40 to 185°F), NEMA 1 (IP10) "-PB" Enclosure: ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated "-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) "-4X" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: 0.250" (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Rating: Neoprene IP68 (NEMA 4X)	Response Time (63% Step Change):	8 Seconds nominal	
Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings): "-BB" Enclosure: ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated "-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) "-4X" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: 0.250" (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Rating: Polyamide 6.6 UL94-V2 Rating: Neoprene IP68 (NEMA 4X)	Sensor Operating Temperature Range:	-40 to 150°C (-40 to 302°F)	
Temperature, Material, Flammability, NEMA/IP Ratings: "-BB" Enclosure: Abs Plastic, -30 to 85°C (-22 to 185°F), UL94-Hb, Plentin Rated "-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) "-4X" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: 0.250" (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Rating: Polyamide 6.6 UL94-V2 Rating: Neoprene IP68 (NEMA 4X)		"-GD" Enclosure: Galvanized Steel, -40 to 85°C (-40 to 185°F), NEMA 1 (IP10)	
Material, Flammability, NEMA/IP Ratings: "-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) "-4X" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: 0.250" (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Rating: Cord Grip Seal Material NEMA/IP Rating: Neoprene IP68 (NEMA 4X)		"-PB" Enclosure: ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated	
**-4X" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) Storage Temperature Range: -40 to 80°C (-40 to 176°F) Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: 0.250" (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Rating: Polyamide 6.6 UL94-V2 Rating: Neoprene IP68 (NEMA 4X)	• •	"-BB" Enclosure: Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14)	
Operating Humidity Range: 5 to 95% RH, non-condensing Probe Diameter Probe Material: 0.250" (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Rating: Polyamide 6.6 UL94-V2 Cord Grip Seal Material NEMA/IP Rating: Neoprene IP68 (NEMA 4X)	material, riammasmey, rizmit in materigs,	"-4X" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)	
Probe Diameter Probe Material: 0.250" (6.35mm) 304 Stainless Steel Cord Grip Fitting Material Flammability Rating: Polyamide 6.6 UL94-V2 Cord Grip Seal Material NEMA/IP Rating: Neoprene IP68 (NEMA 4X)	Storage Temperature Range:	-40 to 80°C (-40 to 176°F)	
Cord Grip Fitting Material Flammability Polyamide 6.6 UL94-V2 Rating: Cord Grip Seal Material NEMA/IP Rating: Neoprene IP68 (NEMA 4X)	Operating Humidity Range:	5 to 95% RH, non-condensing	
Rating: Polyamide 6.6 UL94-V2 Cord Grip Seal Material NEMA/IP Rating: Neoprene IP68 (NEMA 4X)	Probe Diameter Probe Material:	0.250" (6.35mm) 304 Stainless Steel	
		Polyamide 6.6 UL94-V2	
Torque Recommendation Cord Grip: 1.83 ft-lbs (2.50 Nm)	Cord Grip Seal Material NEMA/IP Rating:	Neoprene IP68 (NEMA 4X)	
	Torque Recommendation Cord Grip:	1.83 ft-lbs (2.50 Nm)	



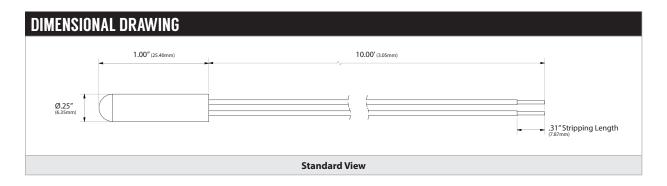


TEMPERATURE | TRANSMITTERS | BULLET PROBE



PRODUCT SPECIFICATIONS	
Lead Length Cable Diameter Conductor Size:	10' (3.05 m) or 20' (6.1 m) 0.106" nominal (2.69 mm) 22 AWG (0.65mm)
Lead Wire Insulation Wire Rating:	FEP/FEP Teflon Unshielded Cable UL CL2P or CL3P; CMP C(UL) US 150°C, FT-6
Conductor Material:	Tin Plated Copper
Product Dimensions Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

Note¹: Transmitter's calibrated at 71°F (22°C) nominal | Note²: Temperature Drift is referenced to 71°F nominal calibration temperature



OPTIONAL SENSOR ORDERING Model # Example: A/ TT1100 BP 1 PB 10°CL2P Oto 40°C A B. C D. E. F. C.				
A. Sensor Series No Selection Required	A/	A/		
B. Model Series Select One (1)	TT100 = 100Ω TTM100 = Matched 100Ω* TT1K = 1KΩ TTM1K = Matched 1KΩ*			
C. Configuration No Selection Required	BP = 1" Stainless Steel Probe			
D. Output Signal Select One (1)	1 = 1 to 5 VDC 2 = 2 to 10 VDC 4 = 4 to 20 mA			
E. Enclosure Select One (1)	GD = Galvanized PB = Plastic BB = Aluminum, NEMA 3R 4X = NEMA 4X			
F. L. and M. Communication of Contract Contra	= Standard 24" Etched PTFE Colored Leads ead Wire Type Select One 6'CL2P = 6 ft (1.83m), 2 Conductor Plenum Rated Cable			
F. Lead Wire Type Select One (1)	10'CL2P = 10 ft (3.05m), 2 Conductor Plenum Rated Cable			
	20'CL2P = 20 ft (6.10m), 2 Conductor Plenum Rated Cable			
G. Calibration 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 specified by using "-5PTNIST" at the end of any TTM part number.

ACCESSORIES ORDERING MOUNTING CLIPS				
Model #	ltem #	Description	Galvanized Metal	Plastic w/ Adhesive
A/MOUNTING CLIP-1/4"	143351	Hardware, ¼" Mounting Clip	•	
A/MOUNTING U-CLIP-1/4"	143352	Hardware, ¼" U-Mounting Clip Adhesive		•

ACCESSORIES ORDERING (NIST)	
Model #	Description
-5PTNIST	5 Point Calibration & Certificate for TTM parts





