HIGH TEMP BULLET PROBE

1" Bullet Probe, Platinum RTD

The ACI High Temperature Bullet Probe Series sensors and transmitters are a single point bullet probe sensor featuring a three wire RTD sensor assembly and a 316 Series stainless steel probe. The three wire sensors can be used with a two wire transmitter by connecting the two (White) colored wires to one of the RTD terminal blocks with the 3rd wire (Red) wire going to the second RTD Terminal block. The purpose of the 3rd wire is to compensate for external lead wire resistance that will affect the accuracy of your sensor output when using with a three wire temperature transmitter or sensor configuration on your Building Management System or PLC (Programmable Logic Controller). ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using the A/100/1K-3W-HT-BP style Platinum RTD series sensors without temperature transmitter. The operating specifications are for both the sensor and transmitter as designated in the specification table. Standard enclosure options include the "-GD" Galvanized or "-BB" Aluminum weather proof enclosure. NIST Certificates are available for all of the configurations listed in the ordering grid on the back of the product data sheet. For best accuracy, ACI recommends the use of the TTM100 or TTM1K Series Matched transmitters with a 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, which will remove most of the sensor error over the calibrated temperature span of the transmitter.

Applications: Boilers, Pumps, Compressors, Remote Sensing, Process Control

The ACI High Temperature Bullet Probe Sensors and Transmitters 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, workaci.com.

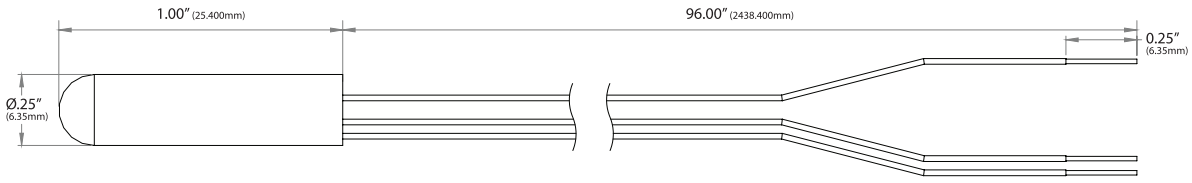
PRODUCT SPECIFICATIONS

Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load (1-5 VDC):** +13.5 to 32 VDC | **500 Ohm Load (2-10 VDC):** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) | 0.020 A
Output Signal:	**Current:** 4-20 mA (2-Wire Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibration 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
Calibration Temperature Spans[1]:	**Minimum Temp. Span:** 50°F (28°C) | **Maximum Temp. Span:** 800°F (426°C)
Matched Calibrated Temperature Spans (A/TTM Models) Ranges:	49°F to 311°F (-45°C to 155°C)
Connections | Wire Size:	Screw Terminal Blocks | 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Sensor Type | Sensor Curve | Sensor Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | One
Number of Wires:	**A/100-3W-HT-BP-8' and A/1K-3W-HT-BP-8':** Three (Two White / Red) Polarity Sensitive)
Sensor Output @ 0°C (32°F):	**A/100-3W-HT-BP-8':** 100 Ohms nominal | **A/1K-3W-HT-BP-8':** 1000 Ohms nominal
Sensor Tolerance | Accuracy[2]:	+/- 0.12% Class B | **Class B Tolerance Formula:** +/- °C = (0.30°C + (0.005 * |t|))
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / °C
Sensor Stability:	< 0.04 % at 1000 hours at 400°C
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/°C (Still Air) | 5 mA | **1K Ohm RTD:** 4 mW/°C (Still Air) | 3 mA
Sensor Operating Temperature Range:	-40 to 395°C (-40 to 743°F)
Enclosure Specificaitons (Operating Temperature Range, Material, Flammability, NEMA/IP Rating):	**"-GD" Enclosure:** -40 to 199°C (-40 to 390°F); Galvanized Steel; NEMA 1 (IP10) **"-BB" Enclosure:** Aluminum, -40 to 85°C (-40 to 185°F), Aluminum; NEMA 3R (IP 14)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 90% RH, non-condensing
Probe Material | Probe Diameter:	316 Stainless Steel | 0.250" (6.35mm)
Compression Fitting Material:	316 Stainless Steel
Lead Length | Conductor Size:	8' (2.44 m) | 24 AWG (0.20 mm^2)
Lead Wire Insulation | Conductor Material:	Fiberglass Braided Insulation with Mica Tape | 27% Nickel Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

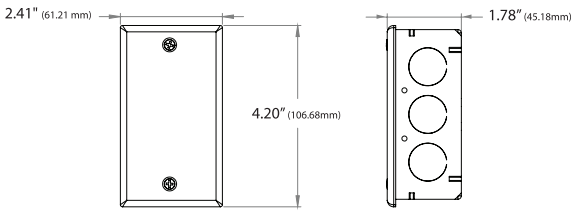
Note[1]: Best transmitter accuracy with spans in 100°F Increments (ie. 0 to 100°F, 20 to 220°F, and 100 to 600°F) **| Note[2]:** Where |t| is the absolute value of temperature above or below 0°C in Centigrade) | Note 3: All TT and TTM Series temperature transmitters are not CE Compliant but are RoHS2 and WEEE Compliant | The ACI High Temperature Bullet Probe Series sensors and transmitters are a single point bullet probe sensor featuring a three

DIMENSIONAL DRAWING

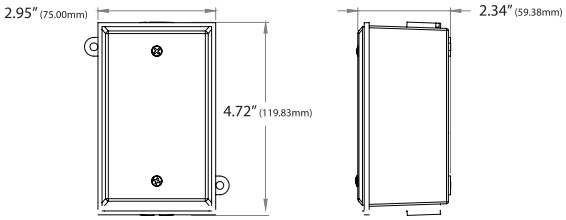
Bullet Probe



Galvanized Enclosure Transmitter only



Bell Box Enclosure Transmitter only



Standard Views

STANDARD ORDERING

Model # Example: A/ 100-3W-HT-BP-8' -OR- 119985

Model #	Item #	Description
A/100-3W-HT-BP-8'	119985	100 Ohm RTD, High Temp, 1" Bullet Probe, 8' Wire Length
A/1K-3W-HT-BP-8'	120377	1K Ohm RTD, High Temp, 1" Bullet Probe, 8' Wire Length
A/100-3W-HT-BP-NIST	146610	100 Ohm RTD, High Temp, 1" Bullet Probe, 8' Wire Length, NIST Certification
A/1K-3W-HT-BP-NIST	146611	1K Ohm RTD, High Temp, 1" Bullet Probe, 8' Wire Length, NIST Certification

CUSTOM SENSOR ORDERING *High Temperature Duct Transmitters*

Model # Example: A/ (A.) | TT100 (B.) | HT (C.) | BP (D.) | 8' (E.) | 1 (F.) | GD (G.) | (H.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/**	**A/**
B. Model Series *Select One (1)*	**TT100** = Unmatched Temperature Transmitter & 100 Ohm RTD **TT1K** = Unmatched Temperature Transmitter & 1K RTD **TTM100** = Matched 100 Ohm Temperature Transmitter/Sensor **TTM1K** = Matched 1K Ohm Temperature Transmitter/Sensor **Must specify 3 or 5 Point NIST Certificates for all TTM100 and TTM1K Transmitters**	
C. High Temperature *No Selection Required*	**HT** = High Temperature Series	**HT**
D. Configuration *No Selection Required*	**BP** = Bullet Probe	**BP**
E. Wire Length *No Selection Required*	**8' =** 8' Wire Length	**8'**
F. Analog Output *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
G. Enclosure Options *Select One (1)*	**GD** = Galvanized Enclosure | **BB** = Aluminum Weather Proof Enclosure	
H. Calibration Temp Span[4]	**Specify Range** = Must Specify the Low and High range of your calibrated temp span in ºF or ºC	

Note[4]: Best transmitter accuracy with spans in 100ºF Increments (ie. 0 to 100ºF, 20 to 220ºF, and 100 to 600ºF) | All TT and TTM Series temperature transmitters are not CE Compliant but are RoHS2 and WEEE Compliant