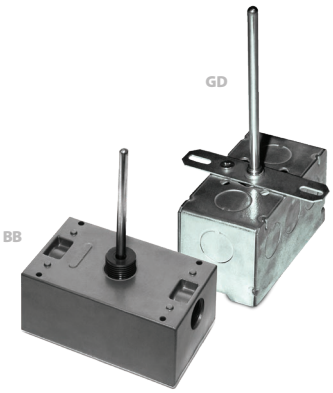


DUCT

High Temperature Duct Sensors & Transmitters

The ACI High Temperature Duct Series sensors and transmitters are a single point duct 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 third wire (Red) wire going to the second RTD Terminal block. The purpose of the third 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-D 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: Burners, Boilers, Stacks, Exhaust, Incinerators, Ovens, Conveyor Systems, Process Heating, Process Control

The ACI High Temperature Duct 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, www.workaci.com.

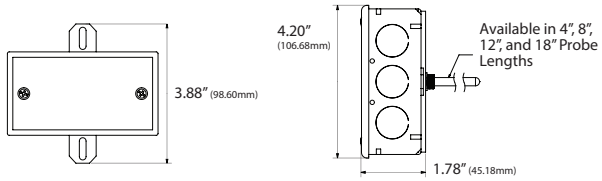
PRODUCT SPECIFICATIONS

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 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%
Transmitter Operating Temperature Range:	-40 to 185°F (-40 to 85°C)
Operating Humidity Range:	0 to 90%, non-condensing
Calibrated 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:	Between -49°F to 311°F (-45°C to 155°C)
Connections | Wire Size:	Screw Terminal Blocks (Non-Polarity Sensitive) | 16 AWG (1.31mm²) to 26 AWG (0.129mm²)
Terminal Block Torque Rating:	0.5 Nm nominal
Sensor Type | Sensor Curve | Sensing Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | One
Number Wires:	**A/100-3W-HT-D-XX"** and **A/1K-3W-HT-D-xx":** Three (Two White / Red) Polarity Sensitive)
Sensor Output @ 0°C (32°F):	**A/100-3W-HT- D-xx":** 100 Ohms nominal | **A/1K-3W-HT-D-xx":** 1000 Ohms nominal
Sensor Tolerance Class | 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
Response Time (63% Step Change):	15 Seconds nominal
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 Specifications (Operating Temperature Range, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** -40 to 199°C (-40 to 390°F); Galvanized Steel; NEMA 1 (IP10)
	"-BB" Enclosure: Aluminum, -40 to 121°C (-40 to 250°F), Plenum Rated, NEMA 3R
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 mm²)
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]: Transmitter's calibrated at 71°F (22°C) nominal | **Note[2]:** Where |t| is the absolute value of temperature above or below 0°C in Centigrade)

DIMENSIONAL DRAWING. WEIGHTS

Galvanized Enclosure [GD]

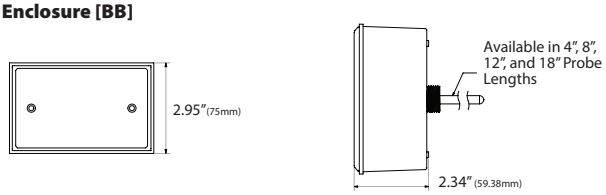


Galvanized Enclosure [GD] Weights

ACI Model #	4" (Probe Length)	8" (Insertion Length)
A/xx-D-yy-GD	0.66 lbs. (0.299 kg)	0.68 lbs. (0.308 kg)

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-D-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)

Bell Box Enclosure [BB]



Bell Box Enclosure [BB] Weights

ACI Model #	4" (Probe Length)	8" (Insertion Length)
A/xx-D-yy-BB	0.70 lbs. (0.317 kg)	0.72 lbs. (0.326 kg)

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-D-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)

Front View **Top View**

CUSTOM ORDERING | HIGH TEMPERATURE DUCT SENSORS

Model # Example: A/ (A.) | 1K (B.) | 3W (C.) | HT (D.) | D (E.) | 4" (F.) | GD (G.) | NIST (H.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD only | **1K** = 1K Ohm Platinum RTD only	
C. Number of Wires *No Selection Required*	**3W** = Three Wires (Specify for 100 and 1K RTD Sensors only) →	**3W**
D. High Temperature *No Selection Required*	**HT** = High Temperature Series →	**HT**
E. Configuration *No Selection Required*	**D** = Duct →	**D**
F. Duct Insertion Length *Select One (1)*	**4"** = 4" Probe | **8"** = 8" Probe | **12"** = 12" Probe | **18"** = 18" Probe	
G. Enclosure *Select One (1)*	**GD** = Galvanized Enclosure | **BB** = Cast Aluminum Weather Proof Enclosure	
H. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (Must Specify 1, 3 or 5 Points)	

CUSTOM ORDERING | HIGH TEMPERATURE DUCT TRANSMITTERS

Model # Example: A/ (A.) | TT100 (B.) | HT (C.) | D (D.) | 8" (E.) | 2 (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*	**D** = Duct →	**D**
E. Duct Insertion Length *Select One (1)*	**4"** = 4" Probe | **8"** = 8" Probe | **12"** = 12" Probe | **18"** = 18" Probe	
F. Analog Output *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
G. Enclosure *Select One (1)*	**GD** = Galvanized Enclosure | **BB** = Cast Aluminum Weather Proof Enclosure	
H. Calibrated Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note: There are two enclosures included with configurations involving Temperature Transmitters. A secondary GD (Galvanized) enclosure contains the transmitter board to protect it from the extreme temperatures exposed to the sensing element

ACCESSORIES ORDERING

Model # Example: A/316SS_1-8IN_NPT_COMPRESS_FIT -OR- 143457

Model #	Item #	Description
A/316SS_1-8IN_NPT_COMPRESS_FIT	143457	1-8in MNPT x 1-4in Bore Compression Fitting
A/316SS_1-2IN_NPT_COMPRESS_FIT	143458	1-3in MNPT x 1-4in Bore Compression Fitting