



OUTSIDE AIR

Weatherproof Outside Air Transmitters



The ACI Transmitter Outside Air Series features a two-wire, 4 to 20 mA loop powered output with optional 3-Wire voltage output signals available. These units are designed to be mounted out of direct sunlight on the North side of a building or under an eave or intake hood. The Ruggedized epoxy coated transmitters “-POT” option should be used in extreme environments or in applications where you are looking for improved accuracy and reduced thermal drift due to the thermally conductive epoxy and more consistent board temperatures. Zero and Span adjustments are available for recalibration in the field when using NIST Certified equipment. All units include a Weather Proof or NEMA/IP rated enclosure and 1/2” knockouts or 1/2” NPT threaded hubs for use during installation. ACI recommends the use of 18 to 22 AWG shielded

cable for all temperature transmitter installations to protect against the introduction of noise onto the signal lines. ACI does offer recalibration services for any transmitters sent back to us for a nominal fee.

Applications: Outside Air Temperature Sensing, Economizer Control, Cold Storage Facilities or Warehouses, High Moisture Environments

The ACI Transmitter Outside Air 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.

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
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) 0.020 A
Transmitter Output Signals:	Current: 4-20 mA (2-Wire, Loop Powered) Voltage: 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Accuracy Linearity¹:	Temp. Spans < 500°F (260°C): +/- 0.2%
Thermal Drift²:	Temp. Spans < 100°F (38°C): +/- 0.04%/°F Temp. Spans > 100°F (38°C): +/- 0.02%/°F
TTM100/TTM1K Certification Points:	3 Point NIST: 20%, 50% & 80% of span 5 Point NIST: 20%, 35%, 50%, 65%, 80% of span
Min./Max. Calibrated Temperature Spans:	Minimum Temp. Span: 50°F (28°C) Maximum Temp. Span: 300°F (148°C)
Warm Up Time Warm Up Drift:	10 Minutes +/- 0.1%
Transmitter Operating Temperature Range:	-40°F to 185°F (-40 to 85°C)
Connections Wire Size:	Screw Terminal Blocks (Polarity Sensitive) 16 AWG (1.31 mm ²) to 26 AWG (0.129 mm ²)
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
Sensor Resistance @ 0°C (32°F) Lead Colors:	A/TT/TTM100 Series: 100 Ohms (Brown/Brown) A/TT/TTM1K Series: 1000 Ohms (Black/Black)
RTD Tolerance Class Sensor Accuracy:	+/- 0.06% Class A (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)
Sensor Din Standard Temperature Coefficient:	DIN EN 60751 (IEC 751) 3850 ppm / °C
Operating Storage Temperature Range:	-40 to 71°C (-40 to 160°F) -40 to 71°C (-40 to 160°F)
Operating Humidity Range:	0 to 100% RH
Enclosure Specifications (Temperature, Material, Flammability, NEMA/IP Ratings):	“-EH” Enclosure: PC/ASA Plastic w/ UV Protectant; -40 to 88°C (-40 to 190°F); UL94-V0 “-4X” Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) “-BB” Enclosure: Aluminum, -40 to 121°C (-40 to 250°F), NEMA 3R
Lead Length Conductor Size:	14” (35.6cm) 22 AWG (0.65mm)
Lead Wire Insulation Wire Rating:	Etched (PTFE) Teflon Colored Leads MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Cord Grip Fitting Material Flammability Rating:	Polyamide 6.6 UL94-V2 (Included with “-4X” enclosure option only)
Cord Grip Seal Material NEMA/IP Rating:	Neoprene IP68 (NEMA 4X)
Torque Recommendation Cord Grip:	1.83 ft-lbs (2.50 Nm)
Product Dimensions:	See Drawings on back of Data Sheet
Product Weight:	A/TT/TTM-O-EH Series: 0.49 lbs. (0.222 kg) A/TT/TTM-O-4X Series: 0.41 lbs. (0.180 kg); A/TT/TTM-O-BB Series: 0.79 lbs. (0.358 kg) “-POT” Option: +0.12 lbs. (0.055 kg) to other weights
Agency Approvals:	RoHS2, WEEE

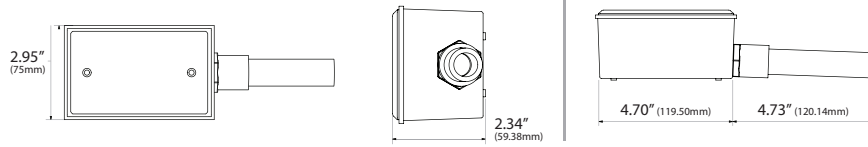
Note¹: Transmitter’s calibrated at 71°F (22°C) nominal | **Note²:** Temperature Drift is referenced to 71°F nominal calibration temperature





DIMENSIONAL DRAWING, WEIGHTS

Bell Box Enclosure [BB]

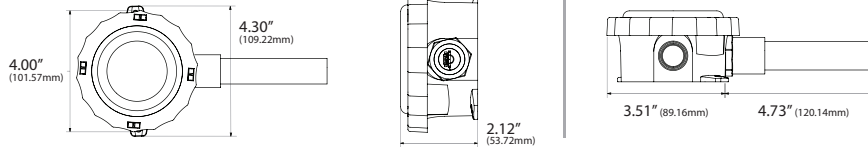


xx = Sensor Type

Bell Box Enclosure [BB] Weight

ACI Model #	Weight
A/xx-O-BB	0.76 lbs. (0.172 kg)

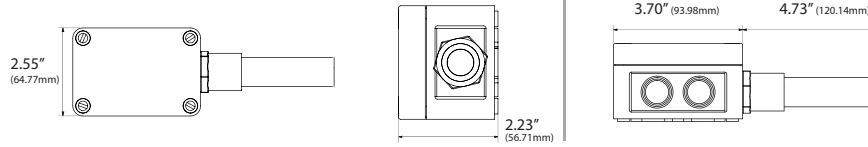
Euro Enclosure [EH]



Euro Enclosure [EH] Weight

ACI Model #	Weight
A/xx-O-EH	0.46 lbs. (0.345 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X] Weight

ACI Model #	Weight
A/xx-O-4X	0.38 lbs. (0.209 kg)

Front & Right Views

Top View

Product Weight

STANDARD ORDERING

Model #	Item #	Description
A/TT100-O-1-EH	142557	TT100 Outside Air; Euro Enclosure; 1-5 VDC Output (Specify Temperature Span)
A/TT100-O-2-BB	130413	TT100 Outside Air; Aluminum NEMA 3R Enclosure; 2-10 VDC Output (Specify Temperature Span)
A/TT100-O-4-4X	118434	TT100 Outside Air; Plastic NEMA 4X Enclosure; 4-20 mA Output (Specify Temperature Span)
A/TT100-O-2-EH*	142558	TT100 Outside Air; Euro Enclosure; 2-10 VDC Output (Specify Temperature Span)
A/TTM100-O-2-BB*	130413	TT100 Outside Air; Aluminum NEMA 3R Enclosure; 2-10 VDC Output (Specify Temperature Span)
A/TTM100-O-4-4X*	131180	TT100 Outside Air; Plastic NEMA 4X Enclosure; 4-20 mA Output (Specify Temperature Span)
A/TT1K-O-1-EH	138289	TT1K Outside Air; Euro Enclosure; 1-5 VDC Output (Specify Temperature Span)
A/TT1K-O-2-BB	118636	TT1K Outside Air; Aluminum NEMA 3R Enclosure; 2-10 VDC Output (Specify Temperature Span)
A/TT1K-O-4-4X	118640	TT1K Outside Air; Plastic NEMA 4X Enclosure; 4-20 mA Output (Specify Temperature Span)
A/TTM1K-O-4*	118972	TT1K Outside Air; Euro Enclosure; 4-20 mA Output (Specify Temperature Span)
A/TTM1K-O-4-BB*	133615	TT1K Outside Air; Aluminum NEMA 3R Enclosure; 4-20 mA Output (Specify Temperature Span)
A/TTM1K-O-4-4X*	118969	TT1K Outside Air; Plastic NEMA 4X Enclosure; 4-20 mA Output (Specify Temperature Span)

CUSTOM ORDERING

Model # Example: **A/ TT100 O 2 EH 0 to 70°C**
A. B. C. D. E. F. G.

A. Sensor Series No Selection Required	A/ <input type="text"/>
B. Model Series Select One (1)	TT100=100Ω TTM100=Matched 100Ω * TT1K=1KΩ TTM1K=Matched 1KΩ *
C. Configuration No Selection Required	O = Outside Air <input type="text"/>
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)	EH = Euro Enclosure BB = Aluminum NEMA 3R 4X = Plastic NEMA 4X Enclosure
F. Potted Transmitter No Selection Required	---- = Standard POT = Epoxy Potted Transmitter, Plastic Cup**
G. Calibration Span Select One (1)	Specify Span in °F or °C (Best Accuracy in 100 °F Increments)

MODEL #

A/

O

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.

Note**: Not available in "EH" style enclosure option

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	5 Point Calibration & Certificate for TTM parts

