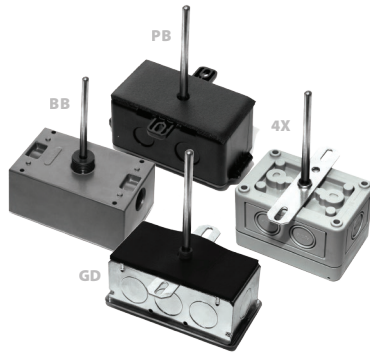




RIGID AVERAGING

Continuous Averaging, Transmitter



The ACI Transmitter Rigid Averaging Series features a two-wire, 4 to 20 mA loop powered output signal with an optional 3-Wire voltage output signal available. The Rigid Averaging sensors are designed to be installed in small to medium size ducts to give you a better average compared to that of a single point sensor. All transmitters include Zero and Span adjustments for field calibration and are calibrated using NIST Certified Calibration equipment. ACI recommends 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 1K Ohm Rigid Averaging sensor assemblies include a continuous sensing element that covers the entire length of the stainless steel probe and are manufactured using colored Etched Teflon lead wires to differentiate between the different sensor types. All units are hermetically sealed using our epoxy material to eliminate the effects of moisture on the sensors. The Rigid Averaging transmitters include a foam pad to properly seal the duct and

limit vibration once installed. 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 a 3 or 5 Point NIST Calibration Certificate, since they include a second calibration process in which the RTD and transmitter are calibrated together as a system. On larger ducts, our bendable copper averaging transmitter should be used for better coverage and control of the air inside of the duct.

Applications: Roof Top Units, Air Handlers, Monitoring Supply/Discharge/Return/Mixed Air Temperatures, Data Centers, Hospitals

PRODUCT SPECIFICATIONS

Transmitter Supply Voltage Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) 25 mA minimum
Maximum Load Resistance:	250 Ohm Load: +13.5 to 32 VDC 500 Ohm Load: +18.5 to 32 VDC (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 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%
Min/Max Temperature Spans:	Minimum Span: 50°F (28°C) Maximum Span: 400°F (204°C)
TTM100/TTM1K NIST Certification Points:	3 Point NIST: 20%, 50% & 80% of span 5 Point NIST: 0%, 20%, 50%, 80% & 100% of span
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) Continuous
Number Wires Wire Colors:	Three Black/Black/White (Polarity Sensitive)
Sensor Output @ 0°C (32°F):	1000 Ohms nominal
Sensor Accuracy:	+/- 0.1% @ 0°C (32°F) +/- 0.25% @ 21°C (70°F) +/- 1.0% @ 130°C (266°F)
Din Standard Temperature Coefficient:	DIN EN 60751 (IEC 751) 3850 ppm / °C
Response Time (63% Step Change):	15 Seconds nominal
Sensor Operating Temperature Range:	-40 to 135°C (-40 to 275°F)
Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings):	"-GD" Enclosure: -40 to 115°C (-40 to 239°F); Galvanized Steel; NEMA 1 (IP10) "-PB" Enclosure: -30 to 90°C (-22 to 194°F); ABS Plastic; UL94-HB; Plenum Rated "-BB" Enclosure: -40 to 115°C (-40 to 239°F); Aluminum; 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:	5 to 90% RH, non-condensing
Probe Diameter Probe Material:	0.250" (6.35mm) 304 Stainless Steel
Fitting Material Flammability Rating:	Polyamide 66 (High Performance Nylon 66) UL94-HB
Fitting Thread Size:	1/8"-27 NPSM
Foam Pad Material Flammability Rating:	Neoprene/EPDM/SBR Polymer UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length Conductor Size:	12" (30.5 cm) 22 AWG (0.65mm)
Lead Wire Insulation Wire Rating:	Etched Teflon (PTFE) Colored Leads Mil Spec 16878/4 Type E
Conductor Material:	Silver Plated Copper
Product Dimensions Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

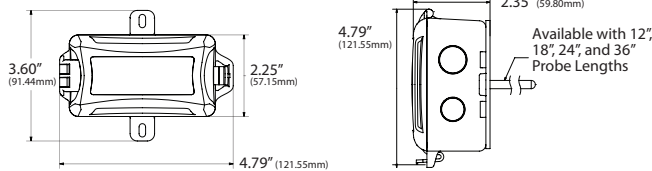
Note¹: Transmitter's calibrated at 71°F (22°C) nominal | **Note²:** Temperature Drift is referenced to 71°F nominal calibration temperature





DIMENSIONAL DRAWING, WEIGHTS

Plastic Box Enclosure [PB]

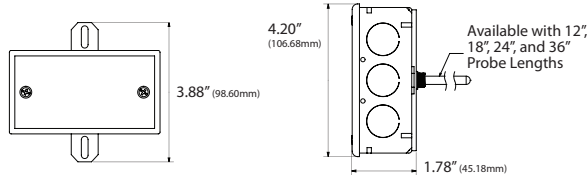


xx = Sensor Type | yy = Insertion Length

Plastic Box Enclosure [PB] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-PB	0.28 lbs. (0.127 kg)	0.30 lbs. (0.136 kg)
ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-PB	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)

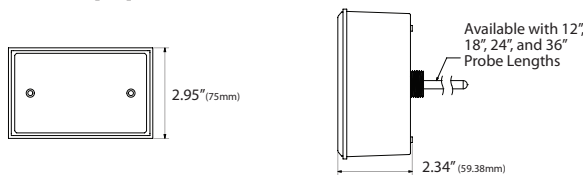
Galvanized Enclosure [GD]



Galvanized Enclosure [GD] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)
ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-GD	0.78 lbs. (0.354 kg)	0.82 lbs. (0.372 kg)

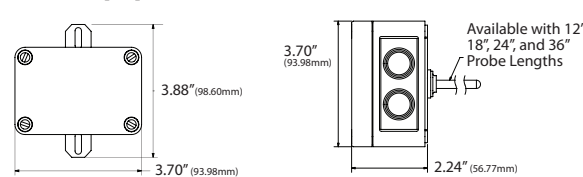
Bell Box Enclosure [BB]



Bell Box Enclosure [BB] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)
ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-BB	0.78 lbs. (0.354 kg)	0.84 lbs. (0.381 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [PB] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-4X	0.38 lbs. (0.172 kg)	0.40 lbs. (0.181 kg)
ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-4X	0.44 lbs. (0.200 kg)	0.50 lbs. (0.227 kg)

Standard Views

Product Weights

PRODUCT WEIGHT

Model #	Weight (lbs.)	Weight (kg)	Model #	Weight (lbs.)	Weight (kg)
A/TT1K-RA-18"-x-PB	0.32	0.145	A/TT1K-RA-24"-x-BB	0.83	0.376
A/TT1K-RA-18"-x-GD	0.76	0.345	A/TT1K-RA-24"-x-4X	0.47	0.213
A/TT1K-RA-18"-x-BB	0.80	0.363	A/TT1K-RA-36"-x-PB	0.43	0.195
A/TT1K-RA-18"-x-4X	0.44	0.200	A/TT1K-RA-36"-x-GD	0.89	0.404
A/TT1K-RA-24"-x-PB	0.35	0.159	A/TT1K-RA-36"-x-BB	0.91	0.413
A/TT1K-RA-24"-x-GD	0.79	0.358	A/TT1K-RA-36"-x-4X	0.57	0.259

CUSTOM ORDERING

Model # Example: A/ TT1K RA 24" 1 GD 0 to 40°C
A. B. C. D. E. F. G.

CUSTOM ORDERING		MODEL #
A. Sensor Series No Selection Required	A/	A/
B. Model Series Select One (1)	TT1K = 1K Ω RTD, Temperature Transmitter TTM1K = 1K Ω Matched RTD/Transmitter*	
C. Configuration No Selection Required	RA = Rigid Averaging	RA
D. Probe Length Select One (1)	12" = 12" Probe 18" = 18" Probe 24" = 24" Probe 36" = 36" Probe	
E. Output Signal Select One (1)	1 = 1 to 5 VDC 2 = 2 to 10 VDC 4 = 4 to 20 mA	
F. Enclosure Select One (1)	GD = Galvanized PB = Plastic BB = Aluminum 4X = NEMA 4X	
G. Calibrated Span	Specify Span in °F or °C (Best Accuracy in 100°F Increments)	

Note* = Must specify a 3 or 5 Point NIST Certificate with the TTM1K Transmitter above

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