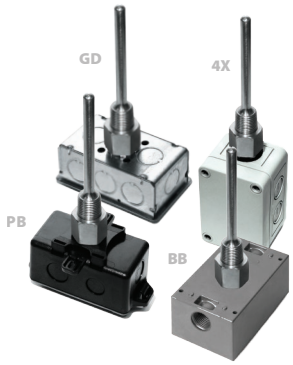


IMMERSION

Stainless Steel Immersion, Thermistor

The ACI Thermistor Immersion Series features a ¼" diameter stainless steel probe with two, 14 inch 22 AWG Etched Teflon colored lead wires depending on the probe length ordered to differentiate the different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture and to increase the response times using our high quality, thermally conductive epoxy. The immersion sensors include a welded thermowell "-I" version but can be ordered without the welded thermowell "-INW" version. The "INW" version includes a standard ½" NPS Male process thread to be used with an optional machined thermowell or in an existing thermowell application. Optional NEMA/IP rated enclosures and NIST certificates are available the back of the product data sheet.

Applications: Chilled Water Systems, Hot Water Systems, Boilers, Pumps, Compressor, Chillers

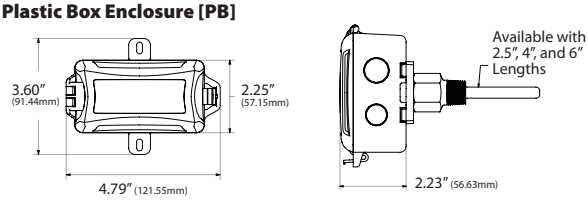
The ACI Thermistor Immersion Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)	
Number Sensing Points | Number Wires:	One | Two (Non-Polarity Sensitive)	
Sensor Output @ 25°C (77°F) | Lead Wire Colors:	**A/1.8K:** 1.8KΩ nominal | Red/Yellow	**A/CSI:** 10KΩ nominal | Green/Yellow
	A/3K: 3KΩ nominal | White/Brown	**A/10KS:** 10KΩ nominal | White/Blue
	A/AN (Type III): 10KΩ nominal | White/White	**A/10K-E1:** 10KΩ nominal | Gray/Orange
	A/AN-BC: 5.238KΩ nominal | White/Yellow	**A/20K:** 20KΩ nominal | Brown/Blue
	A/CP (Type II): 10KΩ nominal | White/Green	**A/100KS:** 100KΩ nominal | Black/Yellow
Accuracy 0-70°C (32-158°F):	+/-0.2°C (+/-0.36°F) except **A/10K-E1 Series:** +/- 0.3°C (+/-0.54°F)	
	A/1.8K Series: +/-0.5°C @ 25°C (77°F) and (+/-1.0°C) (+/-1.8°F)	
Stability:	Sensor Dependent; Contact ACI for more information on specific sensor	
Response Time (63% Step Change):	10 Seconds nominal	
Power Dissipation Constant:	3 mW/°C except **A/1.8K Series:** 1 mW/°C | **A/10K-E1 Series:** 2 mW/°C	
Sensor Operating Temperature Range:	-40 to 150°C (-40 to 302°F)	
Enclosure Specifications (Temperature, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** Galvanized Steel, -40 to 121°C (-40 to 250°F), NEMA 1 (IP10)	
	"-PB" Enclosure: ABS Plastic, -30 to 90°C (-22 to 194°F), UL94-HB, Plenum Rated	
	"-BB" Enclosure: Aluminum, -40 to 121°C (-40 to 250°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 85°C (-40 to 185°F)	
Operating Humidity Range:	10 to 95% RH, non-condensing	
Probe Diameter | Thermowell Bore Diameter:	0.250" (6.35mm) | 0.260"	
Probe Material | Thermowell Material:	304 Stainless Steel | 304 Series Stainless Steel	
Thermowell Instrument | Process Thread Size:	½" NPS (National Pipe Straight) Female Thread | ½" NPT (National Pipe Tapered) Male Thread	
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon 66) | UL94-HB	
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C	
Lead Length | Conductor Size:	14" (35.6 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:	CE, RoHS2, WEEE	

DIMENSIONAL DRAWING. WEIGHTS

Plastic Box Enclosure [PB]

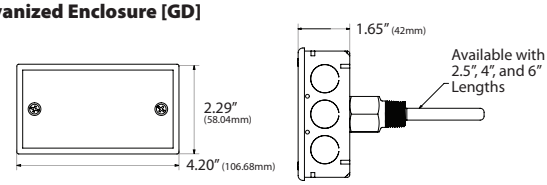


xx = Sensor Type | **yy** = Insertion Length

Plastic Box Enclosure [PB] Weights

ACI Model #	2.5″ (Insertion Length)	4″ (Insertion Length)	6″ (Insertion Length)
A/xx-INW-yy-PB	0.24 lbs. (0.109 kg)	0.28 lbs. (0.127 kg)	0.32 lbs. (0.145 kg)
A/xx-I-yy-PB	0.56 lbs. (0.254 kg)	0.60 lbs. (0.272 kg)	0.64 lbs. (0.290 kg)
A/xx-IM-yy-PB	0.58 lbs. (0.263 kg)	0.74 lbs. (0.336 kg)	0.92 lbs. (0.417 kg)

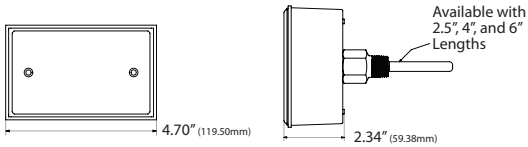
Galvanized Enclosure [GD]



Galvanized Enclosure [GD] Weights

ACI Model #	2.5″ (Insertion Length)	4″ (Insertion Length)	6″ (Insertion Length)
A/xx-INW-yy-GD	0.66 lbs. (0.299 kg)	0.70 lbs. (0.318 kg)	0.74 lbs. (0.336 kg)
A/xx-I-yy-GD	0.88 lbs. (0.399 kg)	1.00 lbs. (0.454 kg)	1.04 lbs. (0.472 kg)
A/xx-IM-yy-GD	1.00 lbs. (0.454 kg)	1.16 lbs. (0.526 kg)	1.32 lbs. (0.599 kg)

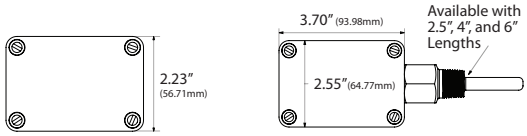
Bell Box Enclosure [BB]



Bell Box Enclosure [BB] Weights

ACI Model #	2.5″ (Insertion Length)	4″ (Insertion Length)	6″ (Insertion Length)
A/xx-INW-yy-BB	0.68 lbs. (0.308 kg)	0.72 lbs. (0.326 kg)	0.76 lbs. (0.345 kg)
A/xx-I-yy-BB	1.02 lbs. (0.463 kg)	1.04 lbs. (0.427 kg)	1.08 lbs. (0.490 kg)
A/xx-IM-yy-BB	1.02 lbs. (0.463 kg)	1.20 lbs. (0.544 kg)	1.36 lbs. (0.617 kg)

NEMA 4X Enclosure [4X]

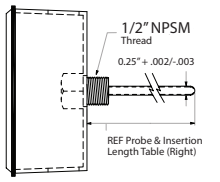


NEMA 4X Enclosure [4X] Weights

ACI Model #	2.5″ (Insertion Length)	4″ (Insertion Length)	6″ (Insertion Length)
A/xx-INW-yy-4X	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)	0.40 lbs. (0.181 kg)
A/xx-I-yy-4X	0.64 lbs. (0.290 kg)	0.68 lbs. (0.308 kg)	0.72 lbs. (0.327 kg)
A/xx-IM-yy-4X	0.66 lbs. (0.299 kg)	0.82 lbs. (0.372 kg)	1.00 lbs. (0.454 kg)

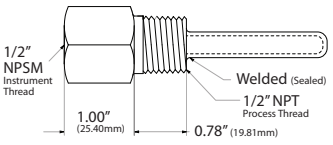
Standard Views **Product Weights**

PROBE AND INSERTION LENGTH IMMERSION NO WELL



Pictured Above: immersion no well (INW) sensor in Bell Box Enclosure (BB).

Pictured Below: welded two piece thermowell to show connection and depth reference. Thermowell not included with immersion no well (INW).



Probe & Insertion Length

Probe Length	Insertion Length	ACI Part #	Thermowell Part #
4.5″	4.31″ +/- 0.13″	A/xx-INW-2.5″-yy-zz	A/2.5″ or A/M2.5″
6″	5.81″ +/- 0.13″	A/xx-INW-4″-yy-zz	A/4″ or A/M4″
8″	7.81″ +/- 0.13″	A/xx-INW-6″-yy-zz	A/6″ or A/M6″

CUSTOM ORDERING

Model # Example: A/ (A.) | 1.8K (B.) | I (C.) | 4" (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **AN-BC** | **CP** | **CSI** | **10KS** | **10K-E1** | **20K** | **100KS**	
C. Configuration *Select One (1)*	**I** = Immersion with Welded Thermowell | **INW** = Immersion without Welded Thermowell **IM** = Immersion with Machined Thermowell	
D. Insertion Length *Select One (1)*	**2.5"** = 2.5" Insertion | **4"** = 4" Insertion | **6"** = 6" Insertion	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (Must Specify 1, 3 or 5 Points)	

ACCESSORIES ORDERING

Model # Example: NSG HEAT TRANSFER PASTE 2OZ -OR- 102595

Model #	Item #	Description
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)
A/M2.5"	128338	2.5" (63.5mm) Insertion, 304 Stainless, Machined, ½" NPT Thermowell
A/M4"	128343	4" (101.6mm) Insertion, 304 Stainless, Machined, ½" NPT Thermowell
A/M6"	128344	6" (152.4mm) Insertion, 304 Stainless, Machined, ½"NPT Thermowell
A/M2.5"-316SS	128352	2.5" (63.5mm) Insertion, 316 Stainless, Machined, ½" NPT Thermowell
A/M4"-316SS	128353	4" (101.6mm) Insertion, 316 Stainless, Machined, ½" NPT Thermowell
A/M6"-316SS	128354	6" (152.4mm) Insertion, 316 Stainless, Machined, ½" NPT Thermowell