

# IMMERSION

## Stainless Steel Immersion, Thermistor

The ACI Thermistor Immersion Series features a 1/4" 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 1/2" 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

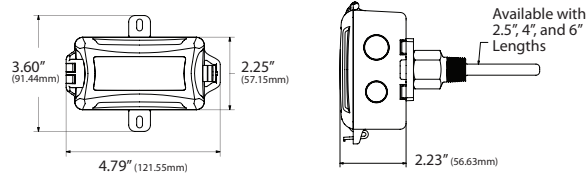
### PRODUCT SPECIFICATIONS

<b>Sensor Type   Sensor Curve:</b>	Thermistor   Non-Linear, NTC (Negative Temperature Coefficient)	
<b>Number Sensing Points   Number Wires:</b>	One   Two (Non-Polarity Sensitive)	
<b>Sensor Output @ 25°C (77°F)  </b>	<b>A/1.8K:</b> 1.8KΩ nominal   Red/Yellow	<b>A/CSI:</b> 10KΩ nominal   Green/Yellow
<b>Lead Wire Colors:</b>	<b>A/3K:</b> 3KΩ nominal   White/Brown	<b>A/10KS:</b> 10KΩ nominal   White/Blue
	<b>A/AN (Type III):</b> 10KΩ nominal   White/White	<b>A/10K-E1:</b> 10KΩ nominal   Gray/Orange
	<b>A/AN-BC:</b> 5.238KΩ nominal   White/Yellow	<b>A/20K:</b> 20KΩ nominal   Brown/Blue
	<b>A/CP (Type II):</b> 10KΩ nominal   White/Green	<b>A/100KS:</b> 100KΩ nominal   Black/Yellow
<b>Accuracy 0-70°C (32-158°F):</b>	+/-0.2°C (+/-0.36°F) except <b>A/10K-E1 Series:</b> +/- 0.3°C (+/-0.54°F)	
	<b>A/1.8K Series:</b> +/-0.5°C @ 25°C (77°F) and (+/-1.0°C) (+/-1.8°F)	
<b>Stability:</b>	Sensor Dependent; Contact ACI for more information on specific sensor	
<b>Response Time (63% Step Change):</b>	10 Seconds nominal	
<b>Power Dissipation Constant:</b>	3 mW/°C except <b>A/1.8K Series:</b> 1 mW/°C   <b>A/10K-E1 Series:</b> 2 mW/°C	
<b>Sensor Operating Temperature Range:</b>	-40 to 150°C (-40 to 302°F)	
<b>Enclosure Specifications (Temperature, Flammability, NEMA/IP Ratings):</b>	<b>"-GD" Enclosure:</b> Galvanized Steel, -40 to 125°C (-40 to 257°F), NEMA 1 (IP10) <b>"-PB" Enclosure:</b> ABS Plastic, -30 to 90°C (-22 to 194°F), UL94-HB, Plenum Rated <b>"-BB" Enclosure:</b> Aluminum, -40 to 125°C (-40 to 257°F), NEMA 3R (IP 14) <b>"-4X" Enclosure:</b> Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)	
<b>Storage Temperature Range:</b>	-40 to 85°C (-40 to 185°F)	
<b>Operating Humidity Range:</b>	10 to 95% RH, non-condensing	
<b>Probe Diameter   Thermowell Bore Diameter:</b>	0.250" (6.35mm)   0.260"	
<b>Probe Material   Thermowell Material:</b>	304 Stainless Steel   304 Series Stainless Steel	
<b>Thermowell Instrument   Process Thread Size:</b>	1/2" NPS (National Pipe Straight) Female Thread   1/2" NPT (National Pipe Tapered) Male Thread	
<b>Fitting Material   Flammability Rating:</b>	Polyamide 66 (High Performance Nylon 66)   UL94-HB	
<b>Foam Pad Material   Flammability Rating:</b>	Neoprene/EPDM/SBR Polymer   UL94-HBF; FMVSS-302; MIL-R-6130C	
<b>Lead Length   Conductor Size:</b>	14" (35.6 cm)   22 AWG (0.65mm)	
<b>Lead Wire Insulation   Wire Rating:</b>	Etched Teflon (PTFE) Colored Leads   Mil Spec 16878/4 Type E)	
<b>Conductor Material:</b>	Silver Plated Copper	
<b>Product Dimensions / Product Weight:</b>	See table on back of Product Data sheet	
<b>Agency Approvals:</b>	CE, RoHS2, WEEE	



DIMENSIONAL DRAWING. WEIGHTS

Plastic Box Enclosure [PB]

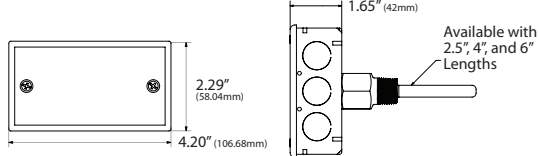


xx = Sensor Type | yy = Insertion Length

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)

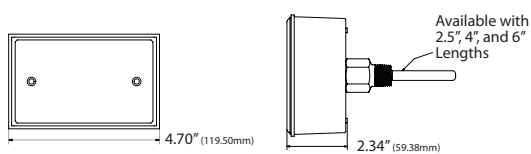
Galvanized Enclosure [GD]



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)

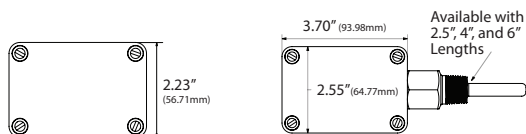
Bell Box Enclosure [BB]



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

CUSTOM ORDERING

Model # Example: A/ 1.8K I 4" GD NIST

MODEL #

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

ACCESSORIES ORDERING

Model # Example: NSG HEAT TRANSFER PASTE 20Z -OR- 102595

Model #	Item #	Description
NSG HEAT TRANSFER PASTE 20Z	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320°F (-40 to 160°C)
NSG HEAT TRANSFER PASTE 160Z	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390°F (-40 to 198°C)
A/M2.5"	128338	2.5" (63.5mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M4"	128343	4" (101.6mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M6"	128344	6" (152.4mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M2.5"-316SS	128352	2.5" (63.5mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell
A/M4"-316SS	128353	4" (101.6mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell
A/M6"-316SS	128354	6" (152.4mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell

