

AcuTEMS™ IM Series

Immersion Temperature Sensor Datasheet



The AcuTEMS IM series immersion temperature sensor is designed to monitor liquid temperature in chilled water lines, boiler piping, and other low-flow and low-pressure applications. The immersion sensor comes in several probe lengths with multiple RTD, thermistor, and transmitter output options suitable for various BAS controllers. The IP65 enclosure also prevents dust and moisture ingress. The 2-piece welded 304 stainless steel thermowell with pre-applied heat transfer paste enables accurate temperature measurement while protecting the sensor probe from corrosive substances and high pressure.

Features

- 304 stainless steel thermowell with $\frac{1}{2}$ " NPT connection and set screw to secure the probe.
- Thermal paste pre-applied on temperature probe for better heat transfer.
- Convenient installation with push-in button terminal and quick release enclosure screws.
- IP65 enclosure provides superior protection against dust and moisture.
- 100Ω Platinum, 1KΩ Platinum/Nickel RTDs, and 10KΩ Type II/Type III, 20KΩ thermistors available.
- Three wire terminals provide flexibility for 2-wire or 3-wire installation for resistive temperature output.
- Optimized for building automation systems, delivering rapid response time of <10s.
- 4-20mA and 0-10VDC output options compatible with different BAS controllers.

ACCUENERGY

Specifications

ELECTRICAL

Transmitter Voltage Power	19.2~28.8 VAC or VDC
Transmitter Current Power	19.2~28.8 VDC (RL=500Ω); 8.5~35 VDC (RL=0Ω)
Transmitter Output	4~20mA (2 Wires) or 0~10VDC (3 Wires)
Output Load	$\leq 500\Omega$ (Current), $\geq 2K\Omega$ (Voltage)

TEMPERATURE PERFORMANCE

Temperature Sensor Type	RTD or Thermistor, See Ordering Information
Transmitter Accuracy (If Applicable)	$<\pm 0.3^\circ\text{C}$ @ 0~70°C ($<\pm 0.54^\circ\text{F}$ @ 32~158°F)
Thermistor Accuracy (If Applicable)	10KΩ, Type III - $\pm 0.3^\circ\text{C}$ @ 25°C ($\pm 0.54^\circ\text{F}$ @ 77°F) 10KΩ, Type II - $\pm 0.2^\circ\text{C}$ @ 25°C ($\pm 0.36^\circ\text{F}$ @ 77°F) 20KΩ - $\pm 0.2^\circ\text{C}$ @ 25°C ($\pm 0.36^\circ\text{F}$ @ 77°F)
RTD Accuracy (If Applicable)	1KΩ Platinum - $\pm 0.2^\circ\text{C}$ @ 25°C ($\pm 0.36^\circ\text{F}$ @ 77°F) 100Ω Platinum - $\pm 0.2^\circ\text{C}$ @ 25°C ($\pm 0.36^\circ\text{F}$ @ 77°F) 1KΩ Nickel - $\pm 0.5^\circ\text{C}$ @ 25°C ($\pm 0.9^\circ\text{F}$ @ 77°F)
Temperature Transmitter Measurement Range	0-100°C (32-212°F)
Response Time	<10s

ENVIRONMENTAL

Operating Temperature Range	-40~70°C (-40~158°F) @ 0~95%RH (Non-Condensing)
Storage Temperature	-30~80°C (-22~176°F)

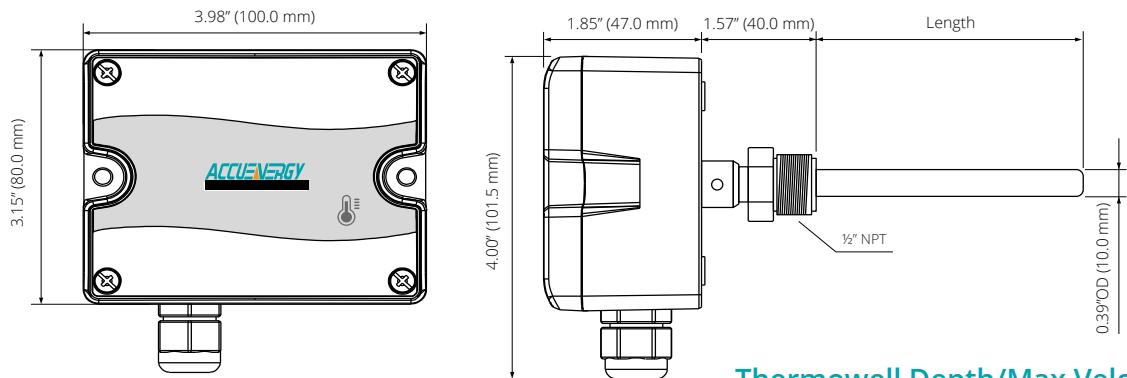
MECHANICAL

Thermowell Connection	$\frac{1}{2}$ " National Pipe Thread (NPT) for Process Connection
Thermowell Material	304SS (Stainless Steel, 2-Piece Welded)
Sensor Mounting	Directly Inserted into Thermowell and Secured with Set Screw
Wiring Connection	Push Button Terminal Blocks (2 Wire or 3 Wire)
Weight	510g (1.12lbs)

CERTIFICATIONS/WARRANTY

Enclosure Material	Fire Retardant Polycarbonate (UL94V-0)
Protection	IP65
Agency Approvals	CE
Warranty	5 Years

Dimensions



Thermowell Depth/Max Velocity

Material	Media	2" (50.8mm)	4" (101.6mm)	6" (152.4mm)
304SS	Water	<115ft/s (35m/s)	<40ft/s (12m/s)	<23ft/s (7m/s)

Note: Any application with excessive flow rates, pressure, or temperatures may require a specialized thermowell designed for those specific conditions.

Ordering Information

Model	- Temperature Output	- Temperature Sensor	- Probe Length	- Enclosure
AcuTEMS-IM	A: Resistive Output (Thermistor or RTD)	01: 10KΩ, Type III Thermistor 02: 10KΩ, Type II Thermistor 03: 20KΩ Thermistor 04: 1KΩ Platinum RTD, 2 Wires 05: 100Ω Platinum RTD, 2 Wires 06: 1KΩ Nickel RTD, 2 Wires	A: 2" (50.8mm) B: 4" (101.6mm) C: 6" (152.4mm) D: Special Order Length [†]	01: NEMA 4 Plastic (IP65)
	B: 4-20 mA Transmitter	07: Transmitter, 1KΩ Platinum RTD 0-100°C (32-212°F)	A: 2" (50.8mm)	01: NEMA 4 Plastic (IP65)
	C: 0-10 VDC Transmitter	08: Transmitter, 1KΩ Platinum RTD Special Order [†]	B: 4" (101.6mm) C: 6" (152.4mm) D: Special Order Length [†]	

Ordering Example: AcuTEMS-IM-B-07-B-01

[†]**Important:** Special Order Span and Probe Length will increase lead times and may be subject to minimum order requirements.

Note: Selecting the "08 Transmitter, 1KΩ Platinum RTD Other Span" option allows the transmitter to be calibrated within a -40°C to +100°C (-40°F to 212°F) measurement range. The custom range must be specified at the time of ordering.