ACCUENERGY

AcuTEMS™ Series

Temperature Sensors

72.2 F

DATASHEET

AcuTEMS™ DM Series

Duct Mount Temperature Sensor Datasheet

![ACCUENERGY logo]

CE

The AcuTEMS DM series duct mount temperature sensor is the ideal solution for monitoring air temperature within ductwork. The sensor features multiple RTD, thermistor, and transmitter output options with different probe lengths, making it compatible with a variety of HVAC systems and BAS controllers to ensure the desired temperature is maintained. The temperature probe is secured with a 4-screw mounting flange with set screw, providing the flexibility of an adjustable probe depth when needed. The AcuTEMS DM comes with an IP65 enclosure providing superior moisture and dust protection.

Features

- Engineered for ductwork mounting with adjustable probe depth.
- Quick installation with push-in button terminal and quick-release enclosure screws.
- IP65 enclosure provides superior protection against dust and moisture ingress.
- 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 resistance temperature output.
- <10s response time delivering quick and reliable temperature measurement.
- 4-20mA and 0-10VDC output options for different BAS controllers and applications.

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	≤500Ω (Current), ≥2KΩ (Voltage)

TEMPERATURE PERFORMANCE

Temperature Sensor Type	RTD or Thermistor, See Ordering Information
Transmitter Accuracy (If Applicable)	<±0.3°C @ 0~70°C (<±0.54°F @ 32~158°F)
Thermistor Accuracy (If Applicable)	10KΩ, Type III - ±0.3°C @ 25°C (±0.54°F @ 77°F) 10KΩ, Type II - ±0.2°C @ 25°C (±0.36°F @ 77°F) 20KΩ - ±0.2°C @ 25°C (±0.36°F @ 77°F)
RTD Accuracy (If Applicable)	1KΩ Platinum - ±0.2°C @ 25°C (±0.36°F @ 77°F) 100Ω Platinum - ±0.2°C @ 25°C (±0.36°F @ 77°F) 1KΩ Nickel - ±0.5°C @ 25°C (±0.9°F @ 77°F)
Temperature Transmitter Measurement Range	0~50°C (32~122°F) or 0-100°C (32-212°F)
Response Time	<10s

ENVIRONMENTAL

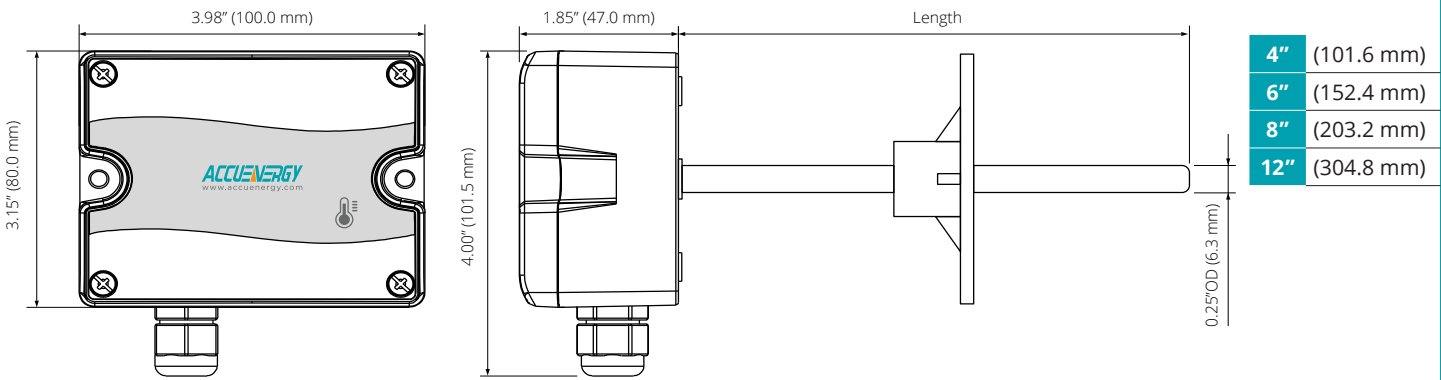|	
Operating Temperature Range	-40~70°C (-40~158°F) @ 0~95%RH (Non-Condensing)
Storage Temperature	-30~80°C (-22~176°F)

MECHANICAL

Mounting	4-Screw Duct Mount Flange with Adjustable Probe and Set Screw
Wiring Connection	Push Button Terminal Blocks (2 Wire or 3 Wire)
Weight	330g (0.73lbs)

CERTIFICATIONS/WARRANTY

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

Dimensions

Ordering Information

+	Model	- Temperature Output	- Temperature Sensor	- Probe Length	- Enclosure
	AcuTEMS-DM	**A**: Resistive Thermistor or RTD	**01**: 10KΩ, Type III Thermistor	**A**: 4" (101.6mm)	**01**: NEMA 4 Plastic (IP65)
			02: 10KΩ, Type II Thermistor	**B**: 6" (152.4mm)	
			03: 20KΩ Thermistor	**C**: 8" (203.2mm)	
			04: 1KΩ Platinum RTD	**D**: 12" (304.8mm)	
			05: 100Ω Platinum RTD	**E**: Custom Probe Length	
			06: 1K Ni Ω Nickel RTD		
		B: 4-20 mA Transmitter	**07**: Transmitter, 1KΩ Platinum RTD 0-50°C (32-122°F)	**A**: 4" (101.6mm)	**01**: NEMA 4 Plastic (IP65)
		C: 0-10 VDC Transmitter	**08**: Transmitter, 1KΩ Platinum RTD 0-100°C (32-212°F)	**B**: 6" (152.4mm)	
			09: Transmitter, 1KΩ Platinum RTD Other Span	**C**: 8" (203.2mm)	
				D: 12" (304.8mm)	
				E: Custom Probe Length	

Ordering Example: AcuTEMS-DM-B-08-C-01

Note: Selecting the "09 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.

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AcuTEMS™ IM Series

Immersion Temperature Sensor Datasheet

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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 ½" 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.

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	≤500Ω (Current), ≥2KΩ (Voltage)

TEMPERATURE PERFORMANCE

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

ENVIRONMENTAL

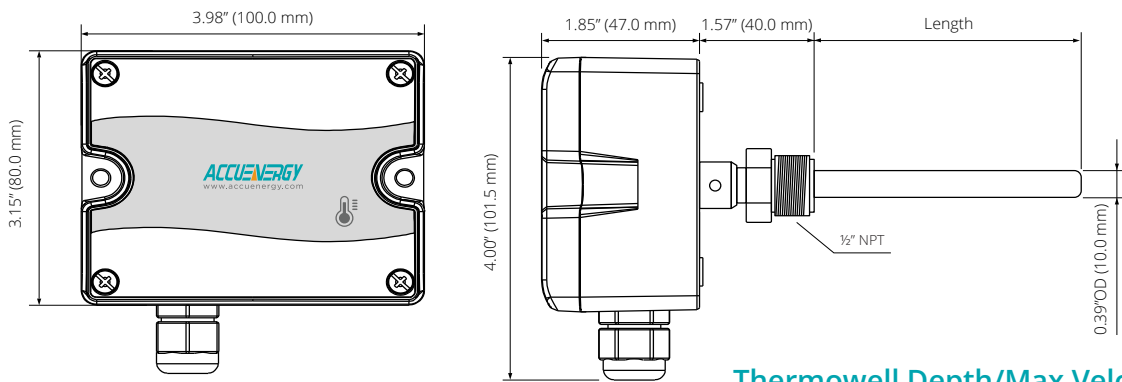|	
Operating Temperature Range	-40~70°C (-40~158°F) @ 0~95%RH (Non-Condensing)
Storage Temperature	-30~80°C (-22~176°F)

MECHANICAL

Thermowell Connection	½" 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

3.98" (100.0 mm)

3.15" (80.0 mm)

1.85" (47.0 mm) 1.57" (40.0 mm) Length

4.00" (101.5 mm)

½" NPT

0.39"OD (10.0 mm)

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	**A**: 2" (50.8mm)	**01**: NEMA 4 Plastic (IP65)
		02: 10KΩ, Type II Thermistor	**B**: 4" (101.6mm)	
		03: 20KΩ Thermistor	**C**: 6" (152.4mm)	
		04: 1KΩ Platinum RTD, 2 Wires	**D**: Custom Probe Length	
		05: 100Ω Platinum RTD, 2 Wires		
		06: 1KΩ Nickel RTD, 2 Wires		
	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 Other Span	**B**: 4" (101.6mm)	
			C: 6" (152.4mm)	
			D: Custom Probe Length	

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

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.

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Specs Subject To Change Without Notice.

AcuTEMS™ OA Series

Outside Air Temperature Sensor Datasheet

CE

The AcuTEMS OA series sensor measures outdoor ambient air temperature with up to ±0.2°C accuracy. Designed to be mounted on a vertical surface outdoors in a shaded location, the sensor comes with an IP65 enclosure for protection against outdoor elements. The AcuTEMS OA features multiple RTD, thermistor, and transmitter output options, and it is ideal for HVAC systems to maintain comfort and ensure efficient equipment operation. For applications under direct sunlight, install the AcuHUM OAW instead, which comes with a six-layered weather shield for extra UV protection, boosted ventilation and improved accuracy.
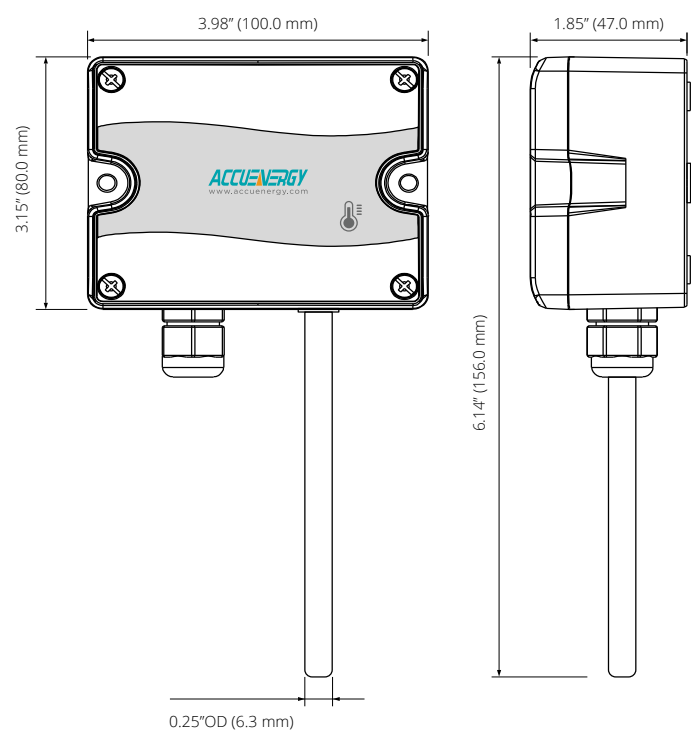
Features

- Push-in button terminal blocks and quick release enclosure screws enable swift and convenient installation.

- IP65 enclosure provides superior protection against dust and moisture ingress.

- 100Ω Platinum, 1KΩ Platinum/Nickel RTDs, and 10KΩ Type II/Type III, 20KΩ thermistors available for different BAS controller requirements.

- Three wire terminals provide flexibility for 2-wire or 3-wire installation.

- 4-20mA and 0-10VDC output options for different BAS controllers and applications.

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	≤500Ω (Current), ≥2KΩ (Voltage)

TEMPERATURE PERFORMANCE

Temperature Sensor Type	RTD or Thermistor, See Ordering Information
Transmitter Accuracy (If Applicable)	<±0.3°C @ 0~70°C (<±0.54°F @ 32~158°F)
Thermistor Accuracy (If Applicable)	10KΩ, Type III - ±0.3°C @ 25°C (±0.54°F @ 77°F) 10KΩ, Type II - ±0.2°C @ 25°C (±0.36°F @ 77°F) 20KΩ - ±0.2°C @ 25°C (±0.36°F @ 77°F)
RTD Accuracy (If Applicable)	1KΩ Platinum - ±0.2°C @ 25°C (±0.36°F @ 77°F) 100Ω Platinum - ±0.2°C @ 25°C (±0.36°F @ 77°F) 1KΩ Nickel - ±0.5°C @ 25°C (±0.9°F @ 77°F)
Temperature Transmitter Measurement Range	-40~60°C (-40~140°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

Mounting	Screw Surface Mount
Wiring Connection	Push Button Terminal Blocks (2 Wire or 3 Wire)
Weight	240g (0.53lbs)

CERTIFICATIONS/WARRANTY

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

Dimensions

3.98" (100.0 mm)
1.85" (47.0 mm)
3.15" (80.0 mm)
6.14" (156.0 mm)
0.25"OD (6.3 mm)

Ordering Information

+ Model	- Temperature Output	- Temperature Sensor	- Enclosure
AcuTEMS-OA	**A**: Resistive Output (Thermistor or RTD)	**01**: 10KΩ, Type III Thermistor	**01**: NEMA 4 Plastic (IP65)
		02: 10KΩ, Type II Thermistor	
		03: 20KΩ Thermistor	
		04: 1KΩ Platinum RTD	
		05: 100Ω Platinum RTD	
		06: 1KΩ Nickel RTD	
	B: 4-20 mA Transmitter	**07**: Transmitter, 1KΩ Platinum RTD -40~60°C (-40~140°F)	**01**: NEMA 4 Plastic (IP65)
	C: 0-10 VDC Transmitter	**08**: Transmitter, 1KΩ Platinum RTD Other Span	
Ordering Example: AcuTEMS-OA-A-02-01			

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.

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Specs Subject To Change Without Notice.

AcuTEMS™ RM Series

Room Mount Temperature Sensor Datasheet

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With a wall-mount design for indoor applications, the AcuTEMS RM features a four-way aspiration enclosure engineered to minimize self-heating and measure temperature accurately without disturbance. With multiple RTD, thermistor, and transmitter output options for various use cases. Optional LCD available when ordered with a transmitter option, providing temperature readings locally with unit indications.

Features

- Polycarbonate housing design for easy wall/surface mount or junction box.

- Protection against over-voltage, reverse polarity, and electromagnetic interference.

- 100Ω Platinum, 1KΩ Platinum/Nickel RTDs, and 10KΩ Type II/Type III, 20KΩ thermistors available.

- <10s response time ensuring swift feedback for building automation systems.

- Optional LCD with unit indication & 0.1°C (0.1°F) resolution.

- 4-20mA and 0-10VDC transmitters utilize high performance digital temperature sensor to ensure accurate measurement, fast response, and long-term stability.
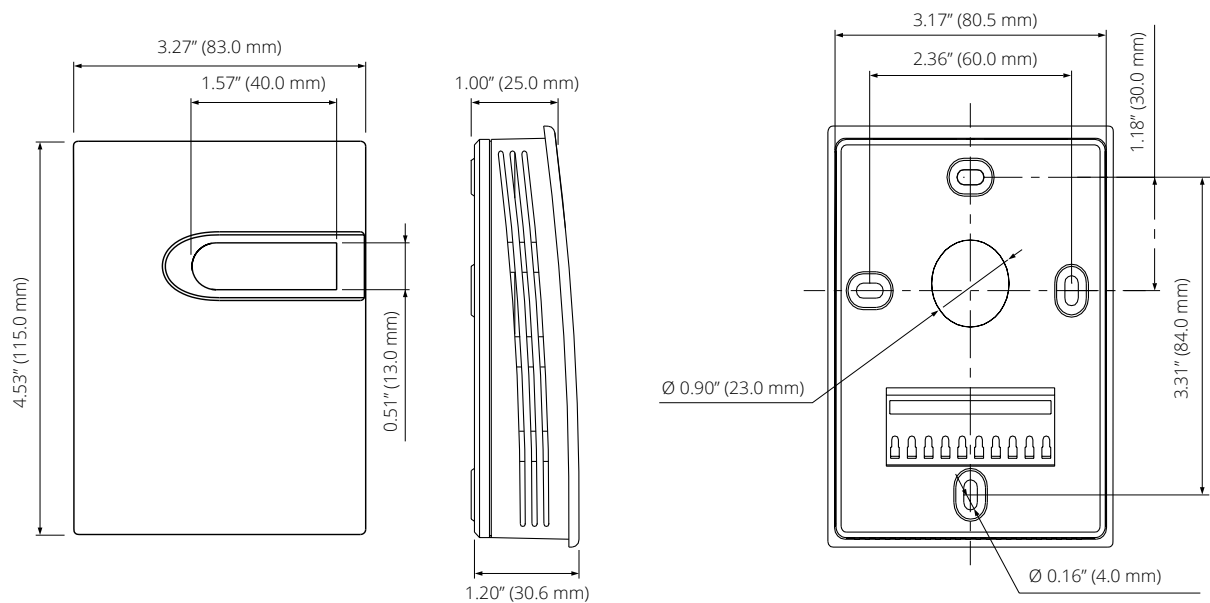
Specifications

ELECTRICAL

Transmitter Power	16~28 VAC or 16~35 VDC
Transmitter Output	4~20mA (3 Wires) and 0~10VDC (3 Wires)
Output Load	≤500Ω (Current), ≥2KΩ (Voltage)

TEMPERATURE PERFORMANCE

Temperature Sensor Type	RTD or Thermistor, See Ordering Information
Temperature Transmitter Sensor Type	Digital
Transmitter Accuracy (If Applicable)	<±0.5°C @ 0~85°C (<±0.9°F @ 32~185°F)
Thermistor Accuracy (If Applicable)	10KΩ, Type III - ±0.3°C @ 25°C (±0.54°F @ 77°F) 10KΩ, Type II - ±0.2°C @ 25°C (±0.36°F @ 77°F) 20KΩ - ±0.2°C @ 25°C (±0.36°F @ 77°F)
RTD Accuracy (If Applicable)	1KΩ Platinum - ±0.2°C @ 25°C (±0.36°F @ 77°F) 100Ω Platinum - ±0.2°C @ 25°C (±0.36°F @ 77°F) 1KΩ Nickel - ±0.5°C @ 25°C (±0.9°F @ 77°F)
Temperature Transmitter Measurement Range	0~50°C (32~122°F)
Response Time	<10s

ENVIRONMENTAL

Sensor Operating Temperature Range	0~70°C (32~158°F) @ 0~95%RH (Non-Condensing)
Transmitter Operating Temperature Range	0~70°C (32~158°F) @ 0~95%RH (Non-Condensing)
Storage Temperature	-30~70°C (-22~158°F)

MECHANICAL

Mounting	Single Gang Junction Box or Surface Mount
Wiring Connection	Screw Terminal Blocks
Weight	165g (0.36lbs)
Display (Optional with Transmitter)	3-Digit LCD with Unit Indication
Display Resolution	0.1°C (0.1°F)

CERTIFICATIONS/WARRANTY

Enclosure Material	Fire Retardant Polycarbonate (UL94V-0)
Protection	IP30
Agency Approvals	CE
Warranty	5 Years

Dimensions

3.27" (83.0 mm)
1.57" (40.0 mm)
1.00" (25.0 mm)
4.53" (115.0 mm)
0.51" (13.0 mm)
1.20" (30.6 mm)

3.17" (80.5 mm)
2.36" (60.0 mm)
1.18" (30.0 mm)
3.31" (84.0 mm)
Ø 0.90" (23.0 mm)
Ø 0.16" (4.0 mm)

Ordering Information

+	Model	-	Temperature Output	-	Temperature Sensor	-	Display (Transmitters Only)
	AcuTEMS-RM		**A**: Resistive Output (Thermistor or RTD)		**01**: 10KΩ, Type III Thermistor		**C**: No Display
					02: 10KΩ, Type II Thermistor		
					03: 20KΩ Thermistor		
					04: 1KΩ Platinum RTD		
					05: 100Ω Platinum RTD		
					06: 1KΩ Nickel RTD		
			B: 4-20 mA & 0-10 VDC Transmitter		**07**: Transmitter, 1KΩ Platinum RTD 0-50°C (32-122°F)		**A**: With Display, Fahrenheit
					08: Transmitter, 1KΩ Platinum RTD Other Span		**B**: With Display, Celsius
							C: No Display

Ordering Example:	AcuTEMS-RM-B-07-A

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.

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Specs Subject To Change Without Notice.

AcuTEMS™ WP Series

Wall Plate Temperature Sensor Datasheet

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The AcuTEMS WP series wall plate temperature sensor is designed to be flush mounted on a single gang junction box and provide accurate measurement readings for various applications. The decorative brushed stainless steel is a corrosion resistant wall plate that can be installed for wash-down environments like a lab, tamper-proof applications like schools and hospitals, or projects where a low-profile non-visible enclosure is preferred. The sensor features multiple RTD and thermistor output options suitable for common BAS controllers.

Features

- Durable grade 304SS wall plate cover, excellent chemical and moisture resistance.

- Foam backing insulates sensing elements from temperature infiltration and provides watertight installation.

- 100Ω Platinum, 1KΩ Platinum/Nickel RTDs, and 10KΩ Type II/Type III, 20KΩ thermistors available.

- High accuracy ±0.2°C @ 25°C (±0.36°F @ 77°F) for applicable models.

- Rapid response time of less than 10s, ensuring quick adjustment for building automation systems.

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Specifications

TEMPERATURE PERFORMANCE

Temperature Sensor Type	RTD or Thermistor, See Ordering Information
Thermistor Accuracy (If Applicable)	10KΩ, Type III - ±0.3°C @ 25°C (±0.54°F @ 77°F) 10KΩ, Type II - ±0.2°C @ 25°C (±0.36°F @ 77°F) 20KΩ - ±0.2°C @ 25°C (±0.36°F @ 77°F)
RTD Accuracy (If Applicable)	1KΩ Platinum - ±0.2°C @ 25°C (±0.36°F @ 77°F) 100Ω Platinum - ±0.2°C @ 25°C (±0.36°F @ 77°F) 1KΩ Nickel - ±0.5°C @ 25°C (±0.9°F @ 77°F)
Response Time (T63)	150~350 seconds

ENVIRONMENTAL

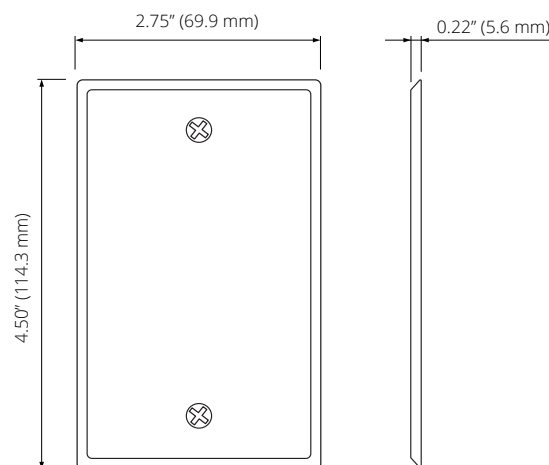|	
Operating Temperature Range	-30~70°C (-22~158°F) @ 0~95%RH (Non-Condensing)
Storage Temperature	-30~70°C (-22~158°F)

MECHANICAL

Mounting	Single Gang Junction Box or Surface Mount
Wiring Connection	200mm (7.87") Flying Leads
Weight	85g (0.19lbs)

CERTIFICATIONS/WARRANTY

Enclosure Material	304 Stainless Steel
Protection	IP30
Agency Approvals	CE
Warranty	5 Years

Dimensions

2.75" (69.9 mm)   0.22" (5.6 mm)

4.50" (114.3 mm)

Ordering Information

Model	-	Temperature Output	-	Temperature Sensor
AcuTEMS-WP		**A**: Resistive Thermistor or RTD		**01**: 10KΩ, Type III Thermistor
				02: 10KΩ, Type II Thermistor
				03: 20KΩ Thermistor
				04: 1KΩ Platinum RTD
				05: 100Ω Platinum RTD
				06: 1KΩ Nickel RTD

Ordering Example: AcuTEMS-WP-A-03