

AcuHUM™ DM Series

Duct Mount Relative Humidity
& Temperature Sensor Datasheet



The AcuHUM DM series duct mount relative humidity (RH) sensor utilizes advanced digital polymer sensing technology for high-precision RH measurement, long-term stability, and fast response time. Ideal for HVAC systems, the AcuHUM DM is tightly sealed in an IP65 rated enclosure and includes a PE polymer filter providing protection against dust, condensation & particulates. The RH sensor is secured with a 4-screw mounting flange with set screw, enabling adjustable probe depth. The AcuHUM DM provides thermistor, RTD, and transmitter options, enabling temperature and RH readings in one device.

Features

- IP65 enclosure & PE polymer filter offer superior protection.
- Quick installation with push button terminal blocks and quick release screws.
- $\pm 2\%$ high-accuracy RH measurement. Temperature measurement up to 0.2°C (0.36°F) accuracy.
- $<10\text{s}$ response time, low drift, $<\pm 0.5\%$ RH/year, and $<\pm 1\%$ RH hysteresis.
- 4-20mA and 0-10VDC output options for different BAS controllers.
- 100 Ω Platinum, 1K Ω Platinum/Nickel RTDs & 10K Ω Type II/Type III, 20K Ω thermistors available.
- Optional custom configuration for temperature measurement.



Specifications

Relative Humidity Measurement

ELECTRICAL

Voltage Power	19.2~28.8 VAC or VDC
Current Power	19.2~28.8 VDC (RL=500 Ω); 8.5~35 VDC (RL=0 Ω)
Output	4~20mA (2 Wires) or 0~10VDC (3 Wires)

RELATIVE HUMIDITY PERFORMANCE

RH Sensor Type	Digital Polymer
Accuracy	$\pm 2\%$ (25°C , 20~80%RH); $\pm 3\%$ (0~95%RH)
Measurement RH Range	0~100%
Operating RH Range	0~95%RH (Non-Condensing)
Hysteresis	$<\pm 1\%$ RH
Response Time	$<10\text{s}$ (25°C , in Slow Air)
Drift	$<\pm 0.5\%$ RH/Year

Temperature Measurement

ELECTRICAL

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

TEMPERATURE PERFORMANCE

Temperature Sensor Type	RTD or Thermistor, See Ordering Information
Transmitter Accuracy (If Applicable)	$<\pm 0.3^\circ\text{C}$ @ 5~60 $^\circ\text{C}$ ($<\pm 0.54^\circ\text{F}$ @ 41~140 $^\circ\text{F}$)
Thermistor Accuracy (If Applicable)	10K Ω , Type III - $\pm 0.3^\circ\text{C}$ @ 25°C (0.54°F @ 77°F) 10K Ω , Type II - $\pm 0.2^\circ\text{C}$ @ 25°C (0.36°F @ 77°F) 20K Ω - $\pm 0.2^\circ\text{C}$ @ 25°C (0.36°F @ 77°F)
RTD Accuracy (If Applicable)	1K Ω Platinum - $\pm 0.2^\circ\text{C}$ @ 25°C (0.36°F @ 77°F) 100 Ω Platinum - $\pm 0.2^\circ\text{C}$ @ 25°C (0.36°F @ 77°F) 1K Ω Nickel - $\pm 0.5^\circ\text{C}$ @ 25°C (0.9°F @ 77°F)
Temperature Transmitter Measurement Range	0~50 $^\circ\text{C}$ (32~122 $^\circ\text{F}$) or 0-100 $^\circ\text{C}$ (32-212 $^\circ\text{F}$)
Response Time	$<10\text{s}$

ENVIRONMENTAL

Operating Temperature Range	-20~70 $^\circ\text{C}$ (-4~158 $^\circ\text{F}$)
Storage Temperature	-30~80 $^\circ\text{C}$ (-22~176 $^\circ\text{F}$)

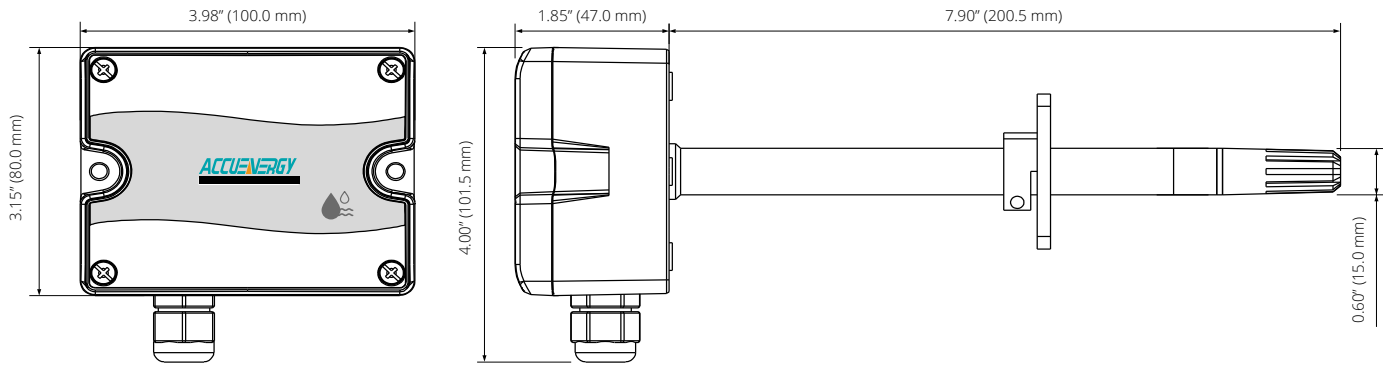
MECHANICAL

Mounting	4-Screw Duct Mount Flange with Adjustable Probe and Set Screw
Wiring Connection	Push Button Terminal Blocks
Weight	340g (0.75lbs)

CERTIFICATIONS/WARRANTY

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

Dimensions



Ordering Information

Model	RH Analog Output	Temperature Output	Temperature Sensor
AcuHUM-DM	A: 4-20 mA Transmitter	A: Resistive Output	01: 10KΩ, Type III Thermistor
			02: 10KΩ, Type II Thermistor
	B: 0-10 VDC Transmitter	B: 4-20mA Output	03: 20KΩ Thermistor
			04: 1KΩ Platinum RTD, 2 Wires
			05: 100Ω Platinum RTD, 2 Wires
			06: 1KΩ Nickel RTD, 2 Wires
			07: Transmitter, 1KΩ Platinum RTD 0-50°C (32-122°F)
			08: Transmitter, 1KΩ Platinum RTD 0-100°C (32-212°F)
	B: 0-10VDC Transmitter	C: 0-10VDC Output	09: Transmitter, 1KΩ Platinum RTD Special Order [†]
			07: Transmitter, 1KΩ Platinum RTD 0-50°C (32-122°F)
A: 4-20mA Transmitter	D: No Temperature Output	08: Transmitter, 1KΩ Platinum RTD 0-100°C (32-212°F)	
		09: Transmitter, 1KΩ Platinum RTD Special Order [†]	
B: 0-10VDC Transmitter		00: No Temperature Output	

Ordering Example: AcuHUM-DM-B-C-08

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

Note: Selecting the "09 XMTR, 1K Ω RTD Platinum 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 when ordering.