

Duct Temperature Sensors

Description

The Duct Temperature Sensors monitor and transmit changes in duct air temperature to the building control system. They provide accurate, reliable indication of duct temperature. The sensor resistance varies proportionally to the actual duct air temperature being measured. They are well suited for application such as heating and cooling, morning warm-up/cool-down, and monitoring discharge air temperature.

Features

- Variety of sensing elements.
- Suitable for multiple duct applications.
- Responsive to temperature change.
- Accurate and reliable indication of duct temperature.
- Familiar installation requires no special tools.



Figure 1. Duct Temperature Sensors.

Ordering Information

Type	Product Number	Sensing Output	Probe Length
Passive Resistance	QAM2112.040	Platinum 1K Ω , 385 α	16 inches (0.4 m)
	QAM2112.200	Platinum 1K Ω , 385 α	6.5 feet (2 m)
	QAM2130.040	NTC 10K Ω , Type 2	16 inches (0.4 m)
Active Output	QAM2161.040	0 to 10 Vdc signal [Platinum 1K Ω]	16 inches (0.4 m)
	QAM2171.040	4 to 20 mA signal [Platinum 1K Ω]	16 inches (0.4 m)

Specifications

Power Consumption (QAM21x1.040)	≤1 VA
Measuring Range:	
Passive Resistance	
NTC	-40°F to 176°F (-40°C to 80°C)
Platinum 1K Ω	-58°F to 176°F (-50°C to 80°C)
Active Output (QAM21x1.040)	
R2 (factory setting)	-58°F to 122°F (-50°C to 50°C)
R1	32°F to 122°F (0°C to 50°C)
R3	-31°F to 95°F (-35°C to 35°C)
Time Constant	30 s at 2 m/s
Output Signals:	
Passive Resistance	Changing resistance
Active Output (QAM21x1.040) Linear (Terminal U1)	0 to 10 Vdc ≙ -58°F to 122°F (-50°C to 50°C) or -31°F to 95°F (-35°C to 35°C) or 32°F to 122°F (0°C to 50°C) Max. ±1 mA
Linear (Terminal I1)	4 to 20 mA ≙ -58°F to 122°F (-50°C to 50°C) or -31°F to 95°F (-35°C to 35°C) or 32°F to 122°F (0°C to 50°C)
Degree of housing protection	IP 54
Connection terminals for	18 to 22 AWG, twisted pair, NEC Class 2
Sensing Element Type	NTC Thermistor or Platinum RTD
Accuracy:	
NTC Thermistors, calibration point	±1.0°F (±0.5°C) @ 77°F (25°C)
Platinum RTD, calibration point	±0.75°F (±0.4°C) @ 32°F (0°C)
Operation (housing):	
Temperature	-40°F to 158°F (-40°C to 70°C)
Humidity	5 to 95% rh
Transport	
Temperature	-13°F to 158°F (-25°C to 70°C)

Specifications, Continued

Installation:	
Wiring	2-conductor: 18 to 22 AWG twisted pair (per code requirements)
Calibration Adjustments	NTC: None required RTD: Adjust for increased temperature offset (a constant) as required, related to added resistance of the field wiring
Mounting	Flange AQM63.0 and, if required, mounting clamps AQM63.3
CE conformity to UL	EMC Directive 89/336/EEC UL 873
Material:	
Probe	Copper, polyolefin
Housing	Polycarbonate, RAL 7001
Cover Plate	Polycarbonate, RAL 7035
Mounting Flange	PA 66 (Black)
Weight (with packaging)	
Active Output (QAM21x1.040)	6 oz (0.17 kg)
Passive Resistance	
QAM2112.040	5 oz (0.15 kg)
QAM2112.200	11 oz (0.3 kg)
QAM2130.040	5 oz (0.15 kg)

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