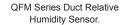
## **Duct Relative Humidity/Temperature Sensors**







QFM Series Duct Relative Humidity and Relative Humidity/Temperature Sensor.



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### **Description**

The QFM Series Duct Relative Humidity and Relative Humidity/Temperature Sensors monitor and transmit changes in humidity and temperature to the building control systems. Several models are available for humidity only (in 5%, 2% and 2% certified) or for humidity and temperature sensing (also in 5%, 2% and 2% certified versions). The humidity only units are available in either 4 to 20 mA or 0 to 10 Volt signal versions. Combination humidity and temperature units are also available in either dual current or voltage versions, transmitting proportional signals back to the controller. Nickel 1000 Ohm (Siemens type) or Platinum 1000 Ohm RTD (385 ALPHA type) temperature outputs on combination versions are also offered.

#### **Features**

- 4 to 20 mA or 0 to 10 Vdc output signals
- · High degree of accuracy
- Removable, replaceable sensing tip (2% and 2% certified models)
- · Versions with LCD display also available

### **Applications**

The QFM Series Duct Relative Humidity and Relative Humidity/Temperature Sensors are especially suited for applications where precise, stable humidity sensing is required.

## **QFM Series Specifications**

#### General

Installation
Connections
Dimensions
Probe
Voltage Requirement
Input Impedance (4 to 20 mA versions only) Less than 500 Ohms
<b>Housing Material Type</b> Polycarbonate plastic, UL 94-5VB rated, suitable for plenum installations
<b>Housing Protection Class</b> IP 65 (QFM3xxx, QFM4xxx types), IP54 (QFM2xxx types), NEMA 1 (all types)
Filter Material and Specification Teflon, 10 micron filter
Agency Certification UL listed to UL 873 for Temperature Indicating and Regulating Equipment
CE Conformance EC Directive on electromagnetic compatibility: 89/336/EEC

### **Humidity Element**

•	
Operating Range	0 to 100% RH
Measurement Range	0 to 95% RH
Accuracy at Room Temperature ≈ 73°F All types:±5% RH, 0	
Operating Temperature Jumper Select	able 32 to 122°F (0 to 50°C) or -31 to 95°F (-35 to 35°C) or -31 to 140°F (-35 to 60°C)
Temperature Effect	Less than 0.1% per degree C
Sensing ElementCap	acitive humidity sensing element
Output Signal RH only units4 to 20 mA RH/T units0 to 10 \	Proportional
Polarity Protection	· · · ·

# **Temperature Element Specifications (for Combination RH/T Units Only)**

		QFM2110 (Platinum) QFM2120 (Nickel)	QFM2160 QFM2171	QFM31xx QFM41xx
Operating Te	perating Temperature -31 to +140°F (-35 to +60°C) -31 to +122°F (-35 to +50°C) -31 to +158°F (-35 to +70		-31 to +158°F (-35 to +70°C)	
Time Consta	me Constant Approximately 20 seconds in moving air			air
	+/-0.6K	_	_	59 to 95° F (15 to 35°C)
Accuracy	+/0.8K	59 to 95°F (15 to 35°C)	59 to 95°F (15 to 35°C)	31 to 158°F (-35 to +70°C)
	+/-1.0K	31 to 140°F (-35 to +60°C)	-31 to +122°F (-35 to +50°C)	_
Output Signal		Platinum 1K Ohm RTD (385)	0 to 10 Vdc (QFMx160)	
Output Sign	aı	Nickel 1K Ohm RTD (Siemens)	4 to 20 mA (QFMx171)	
Calibration			None	

# **QFM Series Product Ordering**

Application	Description	Part No.
Duct Humidity 5%	0 to 10 Vdc	QFM2100
Duct Humidity 5%	4 to 20 mA	QFM2101
Duct Humidity 5% & Temperature	0 to 10 Vdc / Temp 1K Ohm Platinum RTD (385 alpha)	QFM2110
Duct Humidity 5% & Temperature	0 to 10 Vdc / Temp 1K Ohm Nickel RTD (L&S Type)	QFM2120
Duct Humidity 5% & Temperature	0 to 10 Vdc / Temp 0 to 10 Vdc	QFM2160U
Duct Humidity 5% & Temperature	4 to 20 mA / Temp 4 to 20 mA	QFM2171
Duct Humidity 2%	0 to 10 Vdc	QFM3100
Duct Humidity 2%	4 to 20 mA	QFM3101
Duct Humidity 2% & Temperature	0-10 Vdc / Temp 1K Ohm Platinum RTD (385 alpha)	QFM3110
Duct Humidity 2% & Temperature	0 to 10 Vdc, Temp 0 to 10 Vdc	QFM3160
Duct Humidity 2% & Temperature	0 to 10 Vdc, Temp 0 to 10 Vdc, w/Display	QFM3160D
Duct Humidity 2% & Temperature	4 to 20 mA / Temp 4 to 20 mA	QFM3171
Duct Humidity 2% & Temperature	4 to 20 mA / Temp 4 to 20 mA, w/Display	QFM3171D
Duct Humidity	4 to 20 mA (Certified)	QFM4101
Duct Humidity & Temperature	0 to 10 Vdc, Temp 0 to 10 Vdc (Certified)	QFM4160
Duct Humidity & Temperature	4 to 20 mA / Temp 4 to 20 mA (Certified)	QFM4171

