

# QPM21... Series Duct Air Quality Sensors

## Description

The QPM21... series duct air quality sensors optimize room comfort by enabling demand-controlled ventilation. The sensors can acquire: CO<sub>2</sub> and volatile organic compound (VOC) concentrations, relative humidity, and temperature. Models are available for CO<sub>2</sub>, CO<sub>2</sub>/VOC, CO<sub>2</sub>/T, and CO<sub>2</sub>/T/RH.

The sensor evaluates the CO<sub>2</sub>/VOC concentrations and transforms it to a 0 to 10 Vdc linear proportional output signal.

For models with humidity, a capacitive humidity sensing element changes capacitance as a function of the relative humidity. An electronic measuring circuit converts the humidity signal to a continuous 0 to 10 Vdc signal that corresponds to a relative humidity range of 0 to 100%. For models with temperature, the sensor acquires room temperature with a sensing element that changes electrical resistance as a function of the temperature. The resistance is converted to an active 0 to 10 Vdc output signal that corresponds to a temperature range of 32°F to 122°F (0°C to 50°C) or -31°F to 95°F (-35°C to 35°C).

The duct-mounted sensors are suited for use with all systems and devices capable of acquiring and handling a 0 to 10 Vdc output signal.

## Features

- Multisensor for CO<sub>2</sub>/VOC, temperature, and humidity-temperature.
- Maintenance-free infrared CO<sub>2</sub> sensing element, VOC sensing element based on a heated tin dioxide semiconductor.
- 24 Vac operating voltage, 0 to 10 Vdc output signals.



**QPM2100/2102... Series Duct Air Quality Sensor.**



**QPM2160/2162... Series Duct Air Quality Sensor.**

## General Specifications

### Power Supply:

Operating voltage (SELV): 24 Vac  $\pm$ 20% Frequency:  
50/60 Hz

Power consumption:  $\leq$ 2 VA

### Electrical:

Screw terminals: 2  $\times$  16 AWG or 1  $\times$  14 AWG

### Environmental:

Temperature

Operating: 23°F to 113°F (-5°C to 45°C)

Storage: -13°F to 158°F (-25°C to 70°C)

Humidity:

Operating: 0 to 95% rh (noncondensing)

Storage: <95% rh

### Physical:

Weight in lb (kg):

QPM2100/2102: 0.54 lb (0.247 kg)

QPM2160/2162: 0.56 lb (0.252 kg)

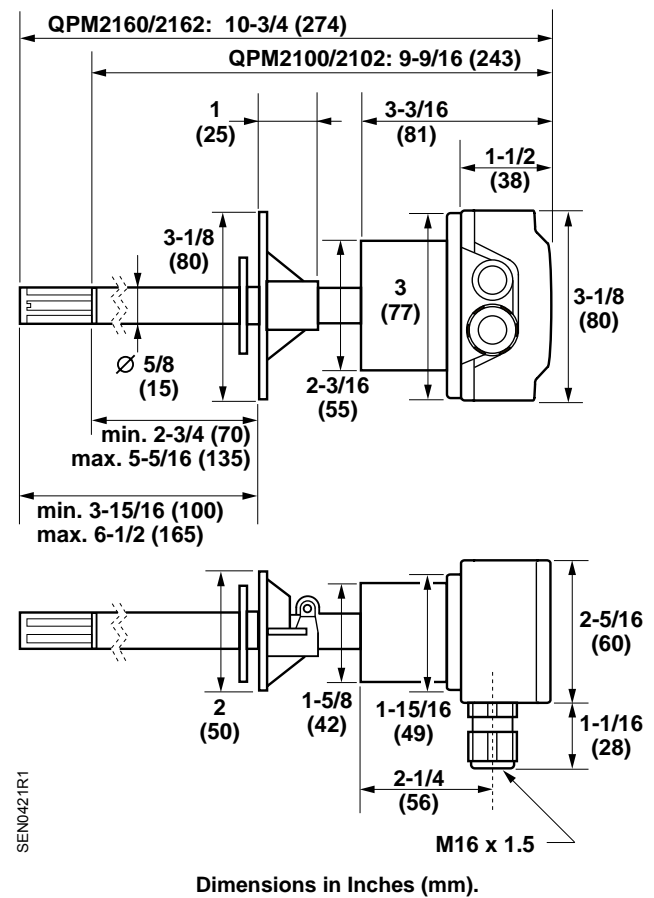
## Product Numbers and Specifications

Product Number	QPM2100	QPM2102	QPM2160	QPM2162
<b>Specification</b>				
CO <sub>2</sub> measuring range: 0 to 2000 ppm Accuracy: $\leq$ ±50 ppm +2% of measured value Output signal: 0 to 10 Vdc, linear Recalibration free: 8 years	•	•	•	•
VOC sensitivity: Low (R1), Normal (R2), High (R3)		•		
Temperature range of use: -31°F to 113°F (-35°C to 45°C) Temperature measuring range (slope and intercept): R2 and R3: 23°F to 113°F (-5°C to 45°C) R1: -31°F to 95°F (-35°C to 35°C) Temperature measuring element: NTC 10K $\Omega$			•	•
Measuring accuracy in the range of: -31°F to 59°F (-35°C to 15°C): $\pm$ 1K 59°F to 95°F (15°C to 35°C): $\pm$ 0.8K 95°F to 122°F (35°C to 50°C): $\pm$ 1K			•	•
Humidity range of use: 0 to 95% rh (noncondensing) Humidity measuring range (slope and intercept): 0 to 100% rh Measuring accuracy at 73°F (23°C), 24 Vac: 0 to 30% rh: $\pm$ 5% rh 30 to 70% rh: $\pm$ 3% rh 70 to 95% rh: $\pm$ 5% rh				•

## Ordering Information

CO2 DUCT SENSOR PART NUMBER KEY		
TYPE	SENSOR	Q
MEASURING FAMILY	CO2/VOC	P
APPLICATION/LOCATION	DUCT	M
SENSOR TYPE	CO2	2
HOUSING TYPE	DUCT HOUSING	1
OUTPUTS (0 TO 10 VOLT)	CO2 ONLY	00
	CO2 AND VOC	02
	CO2 AND TEMP	60
	CO2, TEMP AND RH	62

## Dimensions



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