

QPA20... Series Room Air Quality Sensors

Description

The QPA20... series room air quality sensors optimize room comfort by enabling demand-controlled ventilation. The sensors can acquire: CO₂ and volatile organic compound (VOC) concentrations, relative humidity, and temperature. Models are available for CO₂, CO₂/VOC, CO₂/T, and CO₂/T/RH. Some models are available without a logo.

The sensor evaluates the CO₂/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).

Sensors with an LCD window display the following measured values:

- CO₂ in ppm
- CO₂ and VOC as a bar chart (4 bars ≈ 2V, 20 bars ≈ 10V)
- Temperature in °C or °F
- Relative humidity in %

The wall-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 CO₂/VOC, temperature, and humidity-temperature
- Maintenance-free infrared CO₂ sensing element, VOC sensing element based on a heated tin dioxide semiconductor
- 24 Vac operating voltage, 0 to 10 Vdc output signals



QPA20... Series Room Air Quality Sensor and QPA20... Series Room Air Quality Sensor with Display.

Ordering Information

UNIVERSAL SENSOR PROGRAM			Q	P	A	2	0	x	x
TYPE	SENSOR	Q							
MEASURING FAMILY	CO ₂ /VOC	P							
APPLICATION/LOCATION	ROOM	A							
SENSOR TYPE	CO ₂	2							
HOUSING TYPE	CO ₂ HOUSING	0							
TEMPERATURE OUTPUT SIGNAL	NONE	0							
	0 TO 10 VOLT	6							
RH SIGNAL PRESENT									
CO ₂ OR VOC ONLY:	0 TO 10 VOLT	0							
CO ₂ /VOC AND RH:	0 TO 10 VOLT	2							
FEATURE DESCRIPTION - ROOM TYPES									
	WITHOUT DISPLAY	<BLANK>							
	WITH LCD DISPLAY	D							
	WITHOUT LOGO	N							

Product Numbers and Specifications

Product Number	OPA2000	OPA2000N	OPA2002	OPA2002N	OPA2002D	OPA2060	OPA2060N	OPA2060D	OPA2062	OPA2062D
CO ₂ measuring range: 0 to 2000 ppm Accuracy: $\leq \pm 50$ 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 measuring range (slope and intercept): R2 and R3: 32°F to 122°F (0°C to 50°C) R1: -31°F to 95°F (-35°C to 35°C) Temperature measuring element: NTC 10K Ω Measuring accuracy in the range of: 59°F to 95°F (15°C to 35°C): $\pm 1.4^\circ\text{F}$ ($\pm 0.8^\circ\text{C}$) outside the above range, between: -31°F to 122°F (-35°C to 50°C): $\pm 1.8^\circ\text{F}$ ($\pm 1^\circ\text{C}$)						•	•	•	•	•
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: 30 to 70% rh: $\pm 3\%$ rh outside the above range, between: 0 to 95% rh: $\pm 5\%$ rh									•	•
Display (LCD) of measured value					•			•		•
No Logo	•		•			•				

General Specifications

Power Supply:

Operating voltage (SELV): 24 Vac $\pm 20\%$
Frequency: 50/60 Hz
Power consumption: ≤ 2 VA

Electrical:

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

Environmental:

Transport:

Temperature: -13°F to 158°F
(-25°C to 70°C)
Humidity: < 95% rh

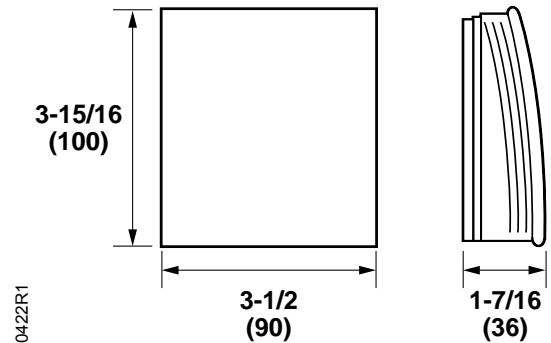
Physical:

Mounting: On 2 \times 4 inch (5 \times 10 cm) electrical conduit box

Weight in lb (kg):

Without display: 0.22 lb (0.10 kg)
With display: 0.26 lb (0.12 kg)

Dimensions



Dimensions in Inches (mm).

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