



## CO2VOC-A/A

CO2 and mixed gas VOC air quality sensor with measurement range switch

Measuring size: CO2, VOC

Output: 2 x 0-10 V, 2 x 4-20 mA, Relay

Highlights: easy-to-install surface-mounted housing, sensor protection with sinter filter



### Description

The air quality filter CO2VOC-A/A registers the CO2 concentration and mixed gas VOC in the air in the environment and converts the measured values into a linear output signal 0-10 V.

The changeover contact can be defined for one of the two measured values.

As an option the air quality sensor has a backlit display. The display content can be rotated in 90° steps using a menu and the measured value, the switching threshold set, the state of the relay, the MIN/MAX measured values for the selected intervals (1 h / 6 h / 12 h / 24 h) etc. can be read out.

The CO2 concentration is measured via a nondispersive infrared sensor (NDIR). 3 different CO2 scales can be selected - 0-2000 ppm, 0-5000 ppm, 0-10000 ppm.

The sensitivity VOC can be set on the device at ?low?, ?medium? and ?high?.

The CO2/VOC zero point balance depending on the actual ambient conditions can be performed at any time on the device by manual calibration. The multifunctional air quality sensor performs an automatic self-calibration at regular interval, thus ensuring a long-term stable air quality measurement.



## Technical Specifications

Measurement range CO2	0-10000 ppm, scales: 0-2000/5000/10000 ppm
Measurement range VOC	0-100% (good / bad air quality, referring to the calibration gas)
Scales	0-2000/5000/10000 ppm
Accuracy	CO2: 0-2000 ppm: $\pm 50$ ppm + 2% f. mv, 0-5000 ppm: $\pm 50$ ppm + 3% f. mv, else: $\pm 100$ ppm + 5% f. mv; VOC: $\pm 15\%$ FS (20°C, 1013 mbar, auto-calibration ON)
Temperature dependency	CO2: $\pm 5$ ppm / K
Pressure dependency	CO2: 0,16% f. mv/hPa
Running-in time	10 min
Response time (t90)	< 5 min
Long term stability	$\pm 1\%$ FS/year
Sensor	CO2: nondispersive infrared sensor (NDIR); VOC: metal oxide sensor
Sensor protection	sinter filter
Supply voltage	24 V AC/DC ( $\pm 5\%$ )
Current consumption	$\emptyset$ 100 mA
Analogue output 0-10 V	3-wire connection
Alarm output	1 x potential-free change-over contact, 48 V, 1 A
Switching Hysteresis Relay	2% FS (without Display), 0,5...5% FS adjustable (with Display)
Electrical connection	screw terminals max. 1,5 mm <sup>2</sup>
Housing	Polycarbonate PC UL 94 V0 with hinge locks, color signal white similar to RAL 9003
Cable gland	PG11 high-strength cable gland with strain relief
Display	optional LCD display with backlight on/off/auto
Dimensions	Housing: L 89 x W 80 x H 47 mm
Protection type	Housing/electronic: IP65, Sensor: IP30
Protection class	III
Working range r.H.	0...98% r.H. in contaminant-free, non-condensing air
Working temperature	0...+50°C
Storage temperature	-20...+50°C
Initial operation	After switch-on of the device follows a self-test and the tempering, which takes ca. 10 minutes depending on the environmental conditions. At this time the analogue output drifts from the actual measurement value.
Automatic calibration	<p>The automatic CO2/VOC calibration takes place every 7 days, this compensates for any drifts and achieves excellent long-term stability. To ensure this function, the device must be supplied with power for at least 7 days without interruption and ventilated once with fresh air (CO2 300...400 ppm) for approx. 10 minutes within this period.</p> <p>For the CO2 calibration, the device saves the minimum CO2 value measured during this period internally. After 7 days, this minimum value is normalized to 400 ppm CO2 and the output signal corrected accordingly. The maximum correction is limited to half of the determined drift. If the measured value falls below approx. 300 ppm, the calibration is initialized to 400 ppm.</p> <p>The automatic calibration can be deactivated and performed manually if necessary.</p>



Manual calibration	The manual CO2 calibration of the output signal to 400 ppm (zero point) is started by pressing the button on the circuit board (hold it down for approx. 5 seconds until the LED flashes). Before that, continuous operation of min. 10 minutes in fresh air. The LED is deactivated after successful calibration.  The manual VOC calibration of the output signal to 1V (zero point) is started by pressing the button on the circuit board (hold down for approx. 5 seconds until the LED flashes). Before that, continuous operation of min. 2 hours with air defined as normal air quality. The LED is deactivated after successful calibration.
Installation	screw fastening
Approvals	CE, EAC, RoHS

## Variants

Article Number			
CO2	VOC	Output	Version
<b>CO2VOC-A/A-UR</b>			
0-2000/5000/10000 ppm	0-100%	2 x 0-10 V, changer	without display
<b>CO2VOC-A/A-URD</b>			
0-2000/5000/10000 ppm	0-100%	2 x 0-10 V, changer	with display

## Accessories

SB/E

Snap-on mounting for DIN rails



motrona AX350

AX350: touchMATRIX® Process Indicator with two 16 bit Analog Inputs



motrona AX020

AX020: Process Indicator for Analog Signals





### Dimensional Drawing

