



FS4086

Multi-sensor measuring device for CO₂, humidity and temperature with traffic light display for wall mounting

Measuring size: CO₂, humidity, temperatur

Output: LED-Traffic Light, Display, Piezo-Buzzer

Highlights: modern housing design, optional LCD-Display



Description

Depending on the device version, the multi-sensor measuring device records the measured quantities CO₂ (0-2000/3000/5000/10000 ppm), relative humidity (0-100% r.h.) and temperature (0 ..+50°C). The CO₂ concentration is visualized via an LED traffic light (green/yellow/red).

The version with a backlit LCD display shows the measured values ??and min/max values ??for CO₂, relative humidity and temperature and in addition, the threshold values for the 3 LEDs of the traffic light function (CO₂ concentration) can be set separately in the menu.

As an option, the measuring device has a piezo buzzer and / or potential-free changeover contact. The alarm threshold can be set with a potentiometer. When this limit is exceeded, the buzzer beeps every 5 seconds or the changeover contact switches. The buzzer signal is deactivated for 10 minutes or permanently if necessary using a mute button.

The CO₂ concentration is measured using a non-dispersive infrared sensor (NDIR). The humidity and temperature are recorded by a digital sensor, which guarantees a highly accurate and long-term stable measurement result. The measuring device carries out an automatic calibration at regular intervals, which guarantees long-term stable measurements.

The modern room housing has a quick-release fastener, extra-large ventilation slots, thermal decoupling and much more.

The measuring device can be mounted on-wall or on a flush-mounted box using screws and is ideal for use in workplaces, schools, living rooms, and medical facilities to reduce the risk of infection, e.g. To minimize COVID-19 with proper ventilation.



Technical Specifications

Measurement range CO2	0-10000 ppm (scales selectable: 0-2000/3000/5000/10000 ppm)
Measurement range r.H.	0-100% r.H.
Measurement range temp.	0...+50°C
Accuracy	CO2 (20°C, 1013 mbar, auto calibration ON): ± 50 ppm + 2% of meas. value (0-2000/3000 ppm), ± 50 ppm + 3% of meas. value (0-5000 ppm), ± 100 ppm + 5% of meas. value (0-10000 ppm); Humidity: $\pm 3\%$ r.h. (30-70% r.h., otherwise $\pm 5\%$ r.h., at 20°C), Temperature: ± 0
Temperature dependency	CO2: ± 5 ppm / K, Humidity: $\pm 0,02\%$ r.F. / K, Temperature: $\pm 0,05^\circ\text{C} / 10$ K
Pressure dependency	CO2: 0,16% f. mv/hPa
Running-in time	< 5 min
Response time	< 2 min
Long term stability	$\pm 1\%$ FS/year
Sensor	CO2: nondispersive infrared sensor (NDIR), Humidity/Temperature: combined electronic sensor
Sensor protection	mounted inside housing
Supply voltage	Version 5V: 5 V DC
Current consumption	\varnothing 100 mA
Alarm output	1 x potential-free change-over contact, 48 V (1 A) and/or piezo buzzer
Switching Hysteresis Relay	2%
Electrical connection	Version 5V: mini USB socket B (power supply available as accessories under Article No. FS9501)
Housing	ABS polyman, colour signal white like RAL 9003
Cable gland	on the housing side
Display	traffic light display for CO2 with 3 LEDs (green/yellow/red), optional LCD display with backlight on/off/auto
Dimensions	Housing: L 82 x W 82 x H 25 mm
Protection type	IP30, IP20 (with display)
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.
Automatic calibration	The automatic CO2 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. 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. The automatic calibration can be deactivated if necessary and performed manually.



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.
Installation	on-wall or on flush-mounted box
Approvals	CE, EAC, RoHS

Variants

Article Number			
Supply voltage	measurand	Display	Equipment
FS4086-X-A2-3L5V			
5 V DC	CO2 (0-2000/3000/5000/10000 ppm)	3 LED traffic lights	-
FS4086-X-A2-3LP5V			
5 V DC	CO2 (0-2000/3000/5000/10000 ppm)	3 LED traffic lights	Piezo buzzer
FS4086-X-A2-6L5V			
5 V DC	CO2 (0-2000/3000/5000/10000 ppm)	6 LED traffic lights	-
FS4086-X-A2-6LP5V			
5 V DC	CO2 (0-2000/3000/5000/10000 ppm)	6 LED traffic lights	Piezo buzzer
FS4086-X-A2H1T1-D3LP5V			
5 V DC	CO2 (0-2000/3000/5000/10000 ppm), rel. humidity (0-100%), temperature (0...+50°C)	3 LED traffic lights	Display, Piezo buzzer



Accessories



FS9501
Power supplies



FS9510
Table stand for room housing



Dimensional Drawing

