

CO₂ sensor
CO2- 1



■ **Application**

The sensor is designed for indoor carbon dioxide concentration measurement and respective air capacity regulation through the control output signal to the fan. Air capacity control based on CO₂ concentration is an efficient energy saving solution.

■ **Design and compatability**

The sensor has two separate ports. Relay normally opened dry contact and analogue output 0...10 V (this output is adjustable for 2...10 V/0...20 mA/4...20 mA). The relay output is designed to switch the ventilation system on/off depending on CO₂ concentration and the analogue output enables smooth fan speed control. Smooth fan speed control by CO₂ sensor is possible only for the units equipped with EC motors or with an external fan speed controller with 0...10 V input, refer RS...TA or VFED. At smooth fan speed

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control the fan speed changes proportionally to carbon dioxide emissions. The relay and analogue outputs make the sensor compatible with any ventilation system. The integrated self-calibration system ensures reliable sensor operation during the sensor service life.

■ **Modifications**

The sensor is available in two modifications - CO2-1 and CO2-2. The CO2-1 model incorporates LED lights for CO₂ concentration and operation buttons for three operation modes: 1 - on, 2 - off, 3 - operation by CO₂ concentration. The button is used to switch the ventilation system on or off when CO₂-based operation is not required. The CO2-2 model has no LED-lights and on/off button. The model is applied for premises requiring permanent ventilation, i.e. at schools.

■ **Mounting and power supply**

The sensor is for wall surface mounting. Power supply from low-current 24 V ac. If power supply 24 V is not available, connect the TRF 24 AC plug that is offered as an accessory.

■ **Accessories**

Power supply unit **TRF 24 AC** is applied for connection of the sensor to 220 V or 120 V AC power mains.



■ Technical data

Power supply / consumption	24 VAC (50/60 Hz \pm 10%), 24 VDC/1.6 W Max
Gas detection analyzer	nondispersive infrared analyzer (NDIR) with self-calibrating system
CO ₂ detection range	0~2000 ppm (parts per million)
Accuracy at 250C (770F), 2000 ppm	\pm 40 ppm +3% reading
Response time	<2 minutes when 90% fluctuation
Warm-up time at start-up	<5 min. (in action), 48 часов (first time)
Analogue output	0~10VDC (factory setting), 2~10VDC, 0~20mA, 4~20mA
Output on/off	<240VAC/30VDC 3A switching current (load resistance)
6 LED lights – CO ₂ indicators (for model CO2-1)	1st green light indicator when CO ₂ concentration \leq 600ppm 1st and 2nd green light indicators when 600 ppm < CO ₂ concentration \leq 800 ppm 1st yellow light indicator when 800 ppm < CO ₂ concentration \leq 1200 ppm 1st and 2nd yellow light indicators when 1200 ppm < CO ₂ concentration \leq 1400 ppm 1st red light indicator when 1400 ppm < CO ₂ concentration \leq 1600 ppm 1st and 2nd red light indicators when CO ₂ concentration > 1600 ppm
Operating conditions / storage recommendations	0~50 °C (32~122 °F); 0~95% relative humidity without condensation -40~70 °C (-40~158 °F); 0~95% relative humidity without condensation
Net weight / Dimensions	120 г./100 mm x 80 mm x 30 mm

■ Sensor connection diagram

