

**Description**

This sensor gives information concerning carbon dioxide (CO2) concentration levels, essential element in air quality monitoring and control in occupied buildings. Changes in concentration of this gas are difficult for humans to recognize. The gas is safe in low concentrations (typically <1000ppm), however prolonged exposure at moderate levels can lead to a range of health related problems such as sick building syndrome causing fatigue like symptoms, effects are most notable in children –kindergartens, schools- due to their higher metabolic activity.

Current and incoming legislation requires CO2 gas monitoring within building environments for optimal control of air quality. Moreover, such CO2 gas monitoring is employed within demand control ventilation systems used for building heating ventilation and air conditioning.

**Application Areas**

- Indoor Air Quality Measurement in Offices, Schools, hotels and residential areas
- DCV- Demand Controlled Ventilation for energy savings
- HVAC applications for building management
- Home air quality control

**Technical Specifications**

CO2 specification		Outputs	
Type of Measurement	NDIR -non dispersive infrared technology-	wireless version	EnOcean EEP profile A5-09-04 Concentration increment (linear): 10 ppm Databyte 2 (scale 0...255) 0 bit - 0 ppm 255 bit- 2550 ppm
Sensor Type	dual wavelength	Radio Regulations	R&TTE EN 300 220 (TCM 310)
Measurement Range	400 – 2,550 ppm CO2 by volume		
Resolution	< 20 ppm CO2		
Accuracy	± 5% of reading		
Pressure Dependence	0.13 % of reading per mm Hg		
Response Time	< 3 minutes for a 90% step change		
Warm up Time	< 30 seconds operational < 15 minutes full accuracy		

**Thresholds:**

- PPM1 ● Level1: green x < 500 ppm
- PPM2 ● Level 2: green flashing when 500 ≤ ppm < 700 ppm
- PPM3 ● Level 3: yellow when 700 ≤ ppm < 1200 ppm
- PPM4 ● Level 4: yellow flashing when 1200 ≤ ppm < 1800
- PPM5 ● Level 5: red when 1800 ≤ ppm < 2500
- PPM6 ● Level 6: red flashing when ppm ≥ 2500 ppm

**Hysteresis for the threshold/level values:**

- Levels 1,2,3: ± 30 ppm
- Levels 4,5,6: ± 80 ppm

**Time-Interval**

Measuring period: every 1 minute

**Transmission Measured Value - Trigger Event:**

- ⇒ Heartbeat: if not concentration changes, 4 min by default
- ⇒ Change of value over threshold: if there is ± 40 ppm variation always sending



**Electrical Specifications**

Power supply SELV	24Vdc (7-28Vdc)
Power consumption	14-45 mA
Operating Temperature	0 ~ +40° C
Storage Temperature	-20 ~ + 50 °C
Operating Humidity	0 ~ 95% non-condensing
Electrical connection	screw terminals max. 1.5 mm2
EMC	EN 61000-6-3, EN 60730-1:2002

**General Specifications**

Regulatory Compliance	CE Mark: EMC 2004/108/EC, LVD 2006/95/EC, RoHS 2011/65/EU, WEEE 2012/19/EU CFR47, Part15 Class A
Product safety	2001/95/EC
Material of housing	ABS
Protection Class	IP20
Color housing	White - RAL 910
Dimensions	71x71x23.5 mm 2.79x2.79x0.93 "
Weight	0.076 kg

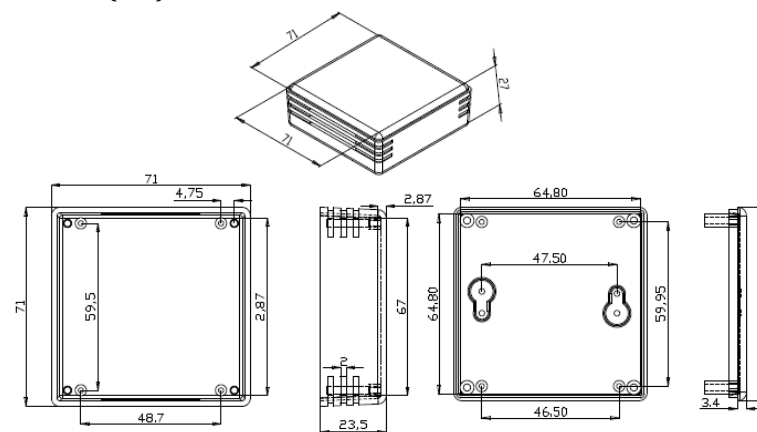
**Learning process:**



When the sensor is connected to the power, the 3 LED lights of the device are flashing . After a few seconds 5-10 sec. when all LEDs are lit, the sensor starts the measurements and just 1 LED is going ON according with the status of the Air Quality (see Thresholds values)

If you desire to start the **learning process** to link with an EnOcean Receiver/gateway **you should press the S3-LRN button** on the PCB (see figure).

**Housing Dimensions (mm)**



**Warnings & Troubleshooting Considerations:**

- ⚠ Polarity connection of the power +/- must be observed!
- ⚠ Don't touch and don't cover the CO2 cuvette module!
- ⚠ When start up if all LEDs are permanently ON means: ●●● Wrong CO2 measurements, module fault, CO2 module COMMUNICATION ERROR!

