domat
control system

RCO2	# Room CO$_2$ sensor

Summary

The RCO2 is a microprocessor-controlled sensor with auto calibration. It measures the CO2 concentration in the room air in the range of 0...2000 ppm, 0...5000 ppm or 0...10000 ppm. The output signal is proportional, 0...10 V DC.

Application

- **Indication of room air pollution**

- **Demand-based ventilation in rooms with variable occupation. For rooms with no other sources of pollution (such as tobacco smoke).**

Function

To measure the CO$_2$ concentration, a non-dispersive infrared (NDIR) sensor is used. The automatic calibration follows approximately each 7 days. For its correct execution, it is necessary that the sensor is exposed to fresh air (300...400 ppm CO$_2$) at least 10 minutes each 7 days. The sensor registers the minimum measured value and after 7 days assigns to this value the CO$_2$ concentration of 350 ppm. This also affects the output signal. Maximum correction is limited to 40 ppm per a 7-day interval.

Manual calibration: It is executed by pressing a button inside of the sensor for at least 5 s. Before the button is pressed, it is necessary to expose the sensor to fresh air for at least 10 minutes. The LED starts flashing. At the calibration time, toe output signal is set to 1.75 V, which corresponds to 350 ppm CO$_2$. At this stage the LED lits continuously. After successfull calibration, the LED goes off.

Technical data

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Power	24 V AC/DC
Sensor type	NDIR (non-dispersive infrared)
Measuring range	0...2000 ppm, 0...5000 ppm, 0...10000 ppm CO$_2$
Output signal	0...10V DC (0V = 0 ppm, 10V = 2000 ppm; 5000 ppm; 10000 ppm)
Ambient temperature	+5...+40°C
Measuring accuracy	+/- 70 ppm + 5 % of measured value
Pressure dependence	+/- 1.6 %/kPa (related to normal pressure)
Long-term stability	+/- 1 % of max. range per year
Contact with gas	diffusuion
Cover	ABS, colour white, similar to RAL9010

	optional stainless steel
Protection degree	IP30 (according to EN 60529)
Protection class	III (according to EN 60730)
Installation	wall mounting or on a flush-mounted box $\varnothing$ 55 mm, 4 apertures for screws
Terminals	screw terminals for wires 0,14 – 1,5 mm^2
Dimensions	see below

Terminals

RCO_2

RCO_2 - Display
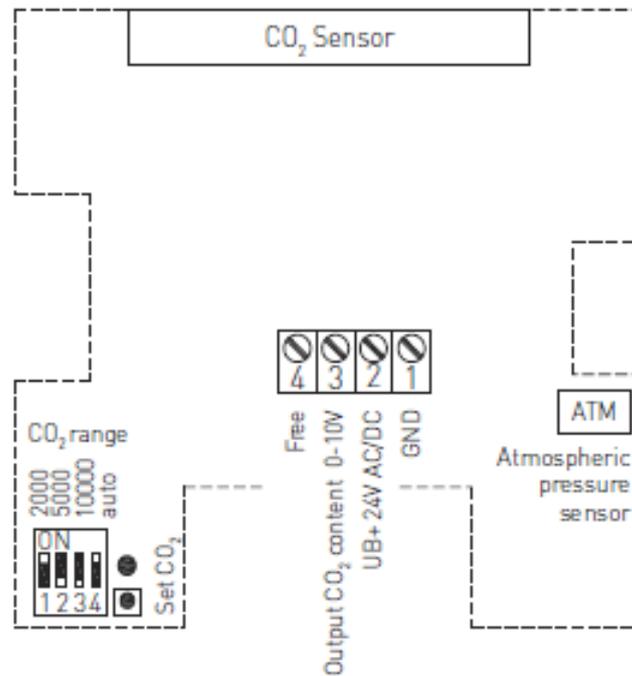
CO_2 content (measuring range adjustable)	DIP 1	DIP 2	DIP 3
0…2000 ppm (default)	ON	OFF	OFF
0…5000 ppm	OFF	ON	OFF
0…10000 ppm	OFF	OFF	ON

Dimensions

All dimensions in *mm*.

32

106

Ø60

98
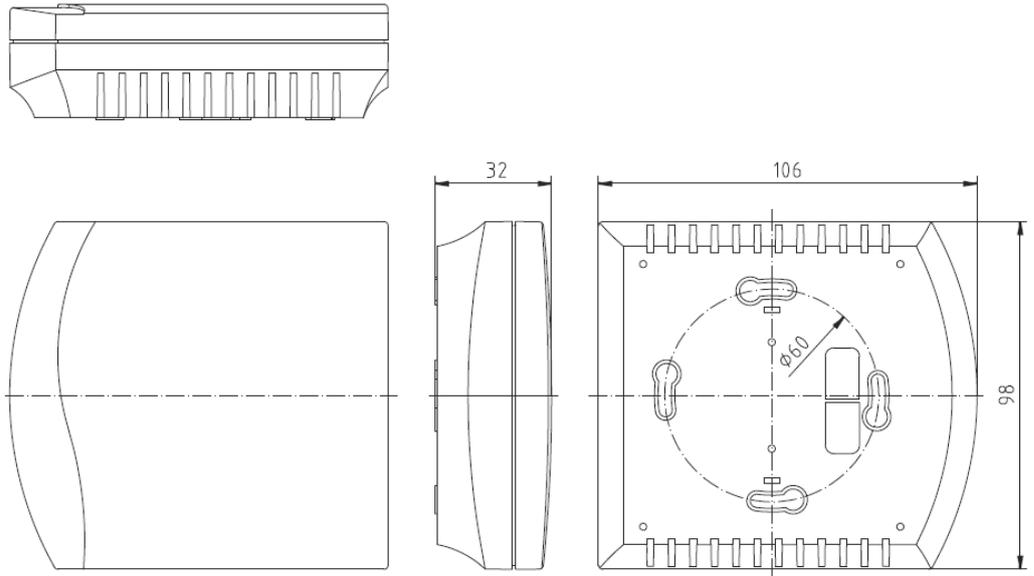
08/2013 Subject to technical changes.