ADS-CO2-230 | Carbon dioxide sensor 230V

The sensor is used to measure the amount of CO_2 in the room. It suits for air quality control systems, ventilation and heat recovery systems used in the restaurants, shops, offices, households, flats and so on.

- works on the optical NDIR principle
- adjustable sensitivity
- 0 – 10V analog output + relay output
- doesn't need maintenance during operation
- long service life and stability

Description:

It is a carbon dioxide (CO_2) room sensor with an 0-10V analog output. The output voltage is proportional to the concentration of CO_2. The measuring of CO_2 works on the principle of infrared radiation attenuation dependence on the CO_2 concentration in the air. Built-in electronics converts the infrared radiation attenuation changes in the measuring cell to the 0-10V analog output. The sensor is capable to measure the CO_2 in the air concentration in the range of 400 up to 2000 ppm.
It is equipped with an output relay, which can switch on the ventilation if the adjustable CO_2 level is reached. This allows an effective ventilation control in the dependence on the air contamination to minimize the energy consumption.
CO_2 in the air level is meaningful information about the quality of indoor air in rooms where a greater number of people is located. The sensor is convenient to manage ventilation in offices, cinemas, hotels, hospitals, gyms, schools, kindergarten, fitness and more.

Explanation of abbreviations and technical terms can be found on our website in the Glossary section.

Table of parameters:

Parameter	Value	Unit
Power supply	230	V AC
Input	2,5	VA
Measuring range	400 – 2000	ppm
Resolution	1	ppm
Accuracy	± 45 ppm ± 5 % of reading	
Voltage output	0 – 10	V DC
Current output 1	0 – 20	mA
Current output 2	4 – 20	mA
Switching voltage	max 250	V AC
Switching current	max 16	A
Switching hysteresis	1,5 (300)	V (ppm)
Working temperature	0 to +40	°C
Working humidity	5 to 95 %	RH
Storage temperature	-20 to +60	°C
Expected lifetime	min. 10	years
Dimensions	125x83x37	mm

- Minimum achievable output value corresponds to minimum value of the measuring range.
- Warm-up: operational after 1 minute since power on.
- The declared accuracy is reached after 4 days of continuous power supply.
- Calibration during operation is not necessary.

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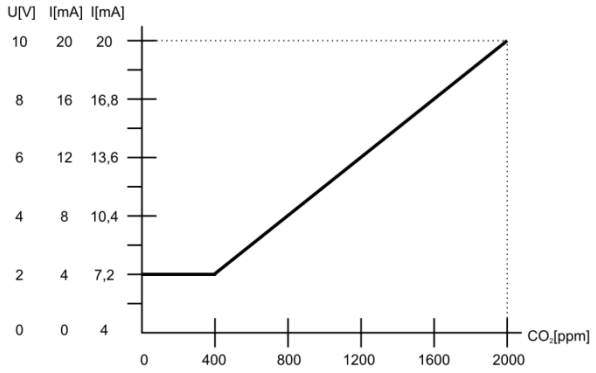
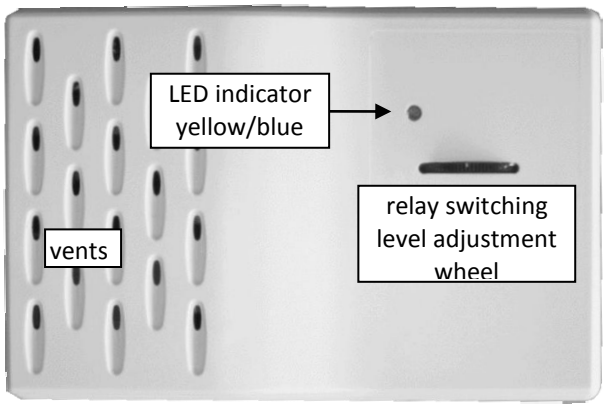
Output voltage/current dependence graph:



Front view:



Relay switching level adjustment wheel:

- turn to the left to decrease the relay switching level of CO_2, the relay will switch at lower concentration

- turn to the right to increase the relay switching level of CO_2, the relay will switch at higher concentration

To avoid fast relay switching around the adjusted level the hysteresis of 1,5 VDC - related to the 0-10VDC output - is automatically added and the minimal duration of one state (contacts open/closed) is 1 minute.

LED indicator:

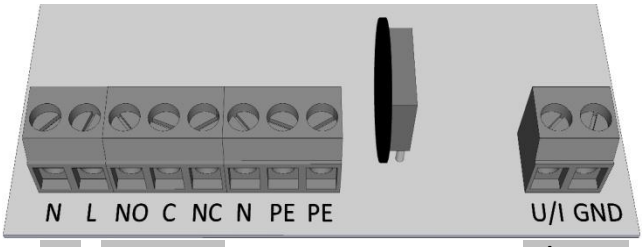
Blue

- continuous light = relay contacts closed
- blinking = relay contacts opened

Yellow

- Indicates only when you turn the adjustment wheel. After finishing the adjustment it indicates further 10s, after that the indication turns off.
- Slow blinking - if you turn the wheel to left = more frequent relay switching.
- Fast blinking - if you turn the wheel around the middle = to set the standard air quality.
- Continuous light - if you turn the wheel to right = less frequent relay switching.

Terminals:

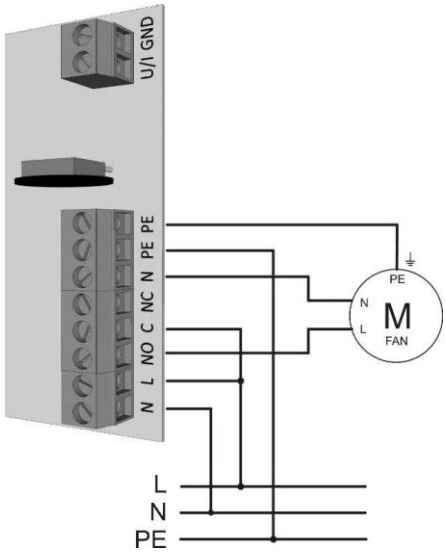


N L power supply

NO C NC relay contacts

U/I GND output 0-10V

Connection example:



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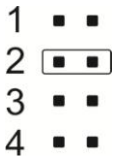
Jumper JP8 settings:



LED enable - if fitted, the blue LED indication is enabled.

Positions no. 1, 3 and 4 aren´t intended for user settings - don´t change settings on these positions!

Jumper JP1 voltage/current output setting:

Jumper in position 1-2 = voltage output.
Jumper in position 2-3 = current output.

Jumper JP2 current output setting:

JP2 fitted = output current range 4-20mA.
JP2 not fitted = output current range 0-20mA.

Note: if the voltage output is selected, JP2 must not be shorted; otherwise there will be an offset to the voltage output.

Autocalibration

Autocalibration ensures a good long-term stability of the sensor. For the proper function of the sensor it is required at least one intensive venting by a fresh air once in a month.

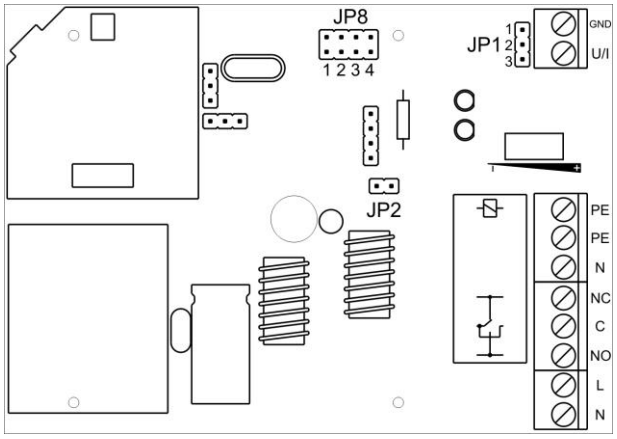
Way to use

The product is intended for indoor use only. You can read the recommendations for sensor placement on our web pages.

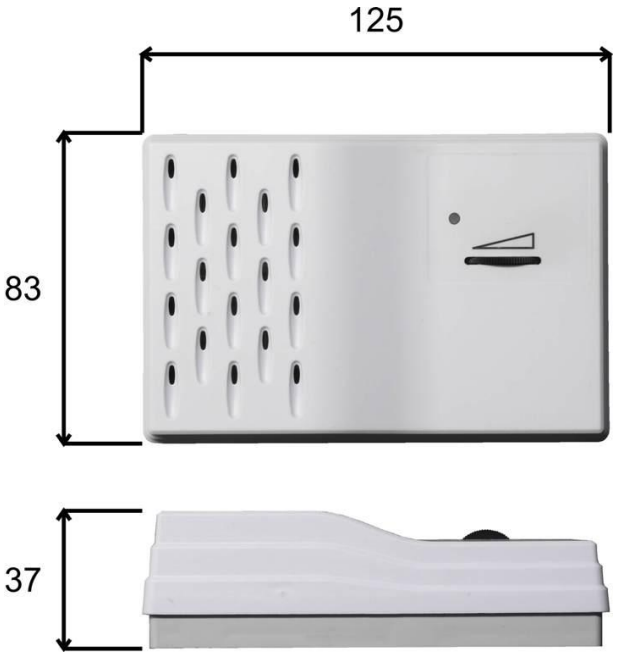
What to do at the end of lifetime of this product

Discard the product in according to the electronic waste law and the EU directives.

On the PCB jumpers location:



Dimensions (mm):



The producer reserves the right of technical changes in order to product improvements its properties and functions without previous notice.