

NLII-CO2-R-5 | Combined sensor CO₂/RH

Room sensor NLII-CO2 is used to continuously monitor air quality inside buildings and then control ventilation (HVAC) systems according to current levels of air internal air quality. The sensor measures concentration of carbon dioxide (CO₂) and relative humidity (RH) in air. It is suitable for offices, classrooms, shopping centers, homes, restaurants, fitness centers, commercial buildings, etc.

- › measures CO₂ and RH
- › LED indication with automatic turn off according to ambient light (at night)
- › 2x analog voltage/current output
- › 2x output relay – 2x NO/C
- › option for cascade relay switching
- › not required maintenance during operation
- › long life and stability



Type of sensor / order code	CO ₂ output	RH output	Relay
NLII-CO2-R-5	0-10 V/0-20 mA/4-20 mA ¹⁾	-	1x NO/C/NC
NLII-CO2+RH-R-5	0-10 V/0-20 mA/4-20 mA ¹⁾	0-10 V/0-20 mA/4-20 mA ¹⁾	2x NO/C

¹⁾ It is possible to select the desired type of analog output by a jumper. Minimum achievable output value corresponds to minimum value of the measuring range.

The measuring of CO₂ is based on the principle of infrared radiation attenuation dependence on the CO₂ concentration in the air (NDIR). Built-in auto-calibration function ensures very good long term stability.

Measurement of the relative humidity is based on the principle of capacitive polymer sensor.

The sensor has built-in two separate analog outputs - one for the actual concentration of CO₂ and the other for the current relative humidity.

If the sensor contains 2 relays, it can be set to two switching modes: standard (each relay switches according to its assigned quantity), a cascade mode (both relays switch according to one selected quantity and each one can be set to different switching level). Cascade switching, for example, can be used to two-step switching of ventilation units output power. Relay trigger levels can be set independently by two rotary elements.

So the sensor efficiently manages ventilation and heat recovery units, based on current room air quality. The current air quality can easily be determined by looking at the three LED indicators. The **eco** level means good indoor air quality necessary to achieve a sense of well-being and at the same time optimal energy costs for heating, ventilation or air conditioning.

Based on these measurements, ventilation, air conditioning and heat recovery units can be controlled directly in an efficient manner.

Explanation of abbreviations and technical terms can be found on our website in the [Glossary](#) section.



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Parameter	Value	Unit
Supply voltage range	12 – 35	V DC
	12 – 24	V AC
Average consumption	0,5	W
CO ₂ measuring range	400 – 5000	ppm
CO ₂ accuracy	± 35 ppm ±5 % of reading	
CO ₂ relay - hysteresis	100	ppm
CO ₂ rate rise	max 1	min
CO ₂ step response	(90 %) 80	s
RH measuring range	0 – 100 %	RH
RH accuracy 0 – 90 %	± 5 %	RH
RH accuracy 90 – 100 %	± 6 %	RH
RH switching hysteresis	5 %	RH
Max. switching voltage	250/30	V AC / V DC
Max. switching current	5/5	A AC / A DC
Working humidity non condensing	0 – 95 %	RH
Working temperature	0 to +50	°C
Storage temperature	-20 to +60	°C
Expected lifetime	min. 10	years
Ingress protection	IP20	
Dimensions	90x80x31	mm

