NLII-CO2+RH+T-5-IQRF | Combined CO_2/RH/T sensor with IQRF

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 (CO_2), relative humidity (RH) and temperature (T). It can be effectively used in offices, classrooms, shopping centers, homes, restaurants, fitness centers, commercial buildings, etc.

- measures CO2, RH and temperature
- 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
- communication over IQRF network
- + version with IQRF module and power supply
- maintenance during operation is not required

Type of sensor	CO_2 output	RH output	T output[2)]	IQRF module + power supply	Relay
NLII-CO2+RH+T-5-IQRF	0-10 V/0-20 mA/4-20 mA[1)]	0-10 V/0-20 mA/4-20 mA[1)]	-	-	-
NLII-CO2+RH+T-5-IQRF+	0-10 V/0-20 mA/4-20 mA[1)]	0-10 V/0-20 mA/4-20 mA[1)]	-	*	-
NLII-CO2+RH+T-R-5-IQRF	0-10 V/0-20 mA/4-20 mA[1)]	0-10 V/0-20 mA/4-20 mA[1)]	-	-	2x NO/C
NLII-CO2+RH+T-R-5-IQRF+	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.

2) Temperature output is available only via IQRF interface.

The measuring of CO_2 is based on the principle of infrared radiation attenuation dependence on the CO_2 concentration in the air (NDIR). Built-in auto-calibration function ensures very good long term stability. Measurement of 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 CO_2 and the other for the current relative humidity. Temperature output is available only via IQRF interface.
The sensor contains 2 relays and 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.
For detailed information about IQRF, use the document NLII-IQRF-Communication. For information on the communication protocol, use the document NLII-Modbus-Communication.

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 12 – 24	V DC 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 startup	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 relay hysteresis	5 %	RH
T measuring range	0 – 50	°C
T accuracy	± 0,4	°C
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