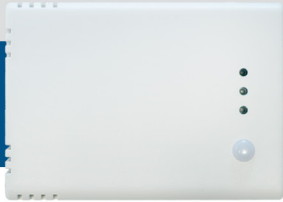


# RSCOH-R

## CO / NO<sub>2</sub> room transmitter



RSCOH-R are multifunctional room transmitters which measure temperature, relative humidity, carbon monoxide and nitrogen dioxide levels. Based on the temperature and relative humidity measurements, the dew-point temperature is calculated. They feature 24 VDC power supply and 3 analogue / modulating outputs - one for temperature, one for relative humidity and one for CO / NO<sub>2</sub>. All the parameters and measurements are accessible via Modbus RTU.

### Key features

- Spring contact terminal block or RJ45 connections
- Selectable temperature, relative humidity and CO / NO<sub>2</sub> ranges
- Silicon based sensor elements for measuring CO and NO<sub>2</sub> trends
- Bootloader for updating the firmware via Modbus RTU communication
- Day / Night detection via ambient light sensor
- Ambient light sensor with adjustable 'active' and 'standby' level
- Modbus RTU communication
- Replaceable CO / NO<sub>2</sub> sensor module
- 3 LEDs with adjustable light intensity for status indication
- Long-term stability and accuracy

### Area of use

- Measurement of indoor temperature, relative humidity and CO and NO<sub>2</sub> trends
- Monitoring of CO and NO<sub>2</sub> trends in buildings and parking garages
- For indoor use only

### Technical specifications

3 analogue / modulating outputs	0—10 VDC mode: min. load 50 kΩ (R <sub>L</sub> ≥ 50 kΩ)	
	0—20 mA mode: max. load 500 Ω (R <sub>L</sub> ≤ 500 Ω)	
	PWM (open-collector type) mode: 1 kHz, min. load 50 kΩ (R <sub>L</sub> ≥ 50 kΩ), PWM voltage level: 3,3 VDC or 12 VDC	
Warm-up time	1 hour	
Typical field of use	Temperature range	0—50 °C
	Relative humidity range	0—95 % rH (non-condensing)
	CO range	0—1.000 ppm
	NO <sub>2</sub> range	0—10 ppm
Accuracy	±0,4 °C (0—50 °C)	
	± 3% rH (range 0—95 %) Trend sensor (CO and NO <sub>2</sub> )	
Protection standard	IP30 (according to EN 60529)	

### Article codes

Article code	Supply voltage	I <sub>max</sub>	Connection type
RSCOH-R	24 VDC	119 mA	RJ45 or terminal block

**Attention!** This product is not suited for 3-wire connection. It has separate grounds for power supply and analogue output. Connecting both grounds together might result in incorrect measurements.

### Modbus registers



The Sensistant Modbus configurator allows you to easily monitor and/or configure Modbus parameters. The parameters of the unit can be monitored / configured through the 3SMODBUS software platform. You can download it from the following link:  
<https://www.sentera.eu/en/3SMCenter>  
 For more information about the Modbus registers, please refer to the product Modbus Register Map.



### Wiring diagram

#### RJ45 sockets (Power over Modbus)

Pin	Signal	Description
Pin 1	24 VDC	Supply voltage
Pin 2		
Pin 3	A	Modbus RTU communication, signal A
Pin 4		
Pin 5	/B	Modbus RTU communication, signal /B
Pin 6		
Pin 7	GND	Ground, supply voltage
Pin 8		



#### Terminal Block 1

VIN	Supply voltage 24 VDC
GND	Supply voltage, ground
A	Modbus RTU communication, signal A
/B	Modbus RTU communication, signal /B

#### Terminal Block 2

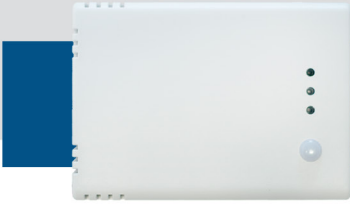
AO1	Analogue / modulating output 1 for temperature measurement (0—10 VDC / 0—20 mA / PWM)
GND	Ground AO1
AO2	Analogue / modulating output 2 for relative humidity measurement (0—10 VDC / 0—20 mA / PWM)
GND	Ground AO2
AO3	Analogue / modulating output 3 for CO / NO <sub>2</sub> * measurement (0—10 VDC / 0—20 mA / PWM)
GND	Ground AO3

**Attention!** The unit needs to be supplied via the RJ45 connector or via the connection terminals. Do not connect the device via the RJ45 connector and the terminal block simultaneously!

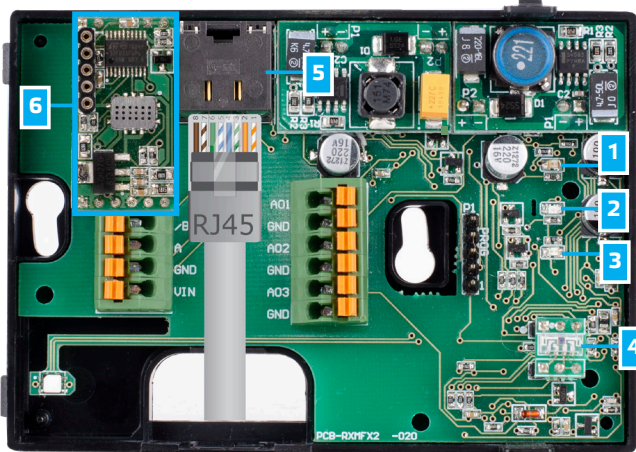
\*Adjustable via Modbus Holding register 67 (default is CO measurement).



# RSCOH-R

CO / NO<sub>2</sub> room transmitter

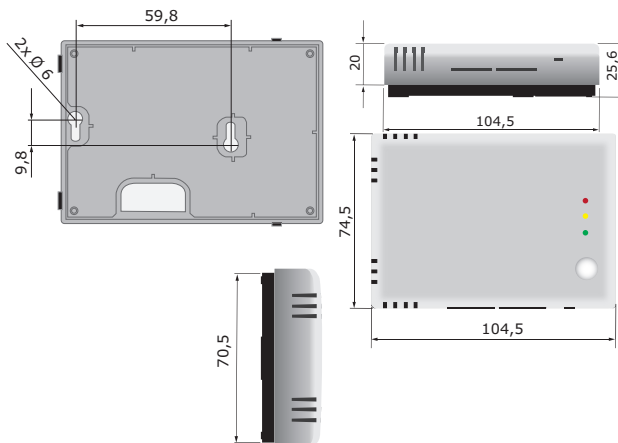


## Settings and indications

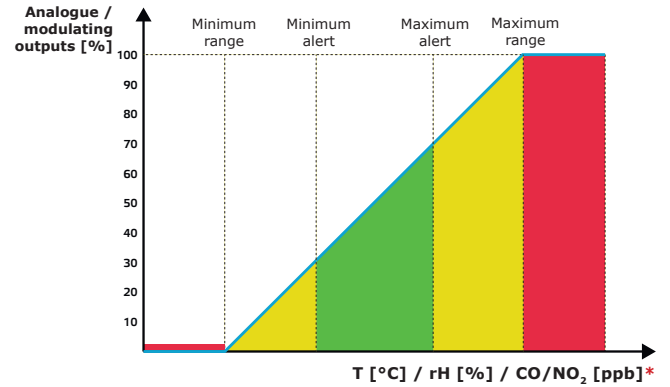


1 - Red LED	Continuous	Measured temperature, relative humidity or CO / NO <sub>2</sub> exceed the minimum or maximum range
	Blinking	Communication with one of the sensors fails
2 - Yellow LED	On	Measured temperature, relative humidity or CO / NO <sub>2</sub> exceed the minimum or maximum alert value
	Blinking	Sensor warming up
3 - Green LED	On	Measured temperature, relative humidity or CO / NO <sub>2</sub> are within range
	Blinking	Sensor warming up
4 - Ambient light sensor		Low light intensity / Active / Standby
5 - RJ45 socket		Modbus communication with connected Master devices and PoM voltage supply (24 VDC) Blinking LEDs indicate that packages are transmitted via Modbus RTU communication
6 - TVOC sensor element		Replaceable in case of faulty operation. This CO / NO <sub>2</sub> trend sensor is intended to control ventilation systems in HVAC applications. It detects changes in concentration of carbon monoxide, Nitrogen dioxide, Ethanol, Hydrogen, Ammonia and Methane.

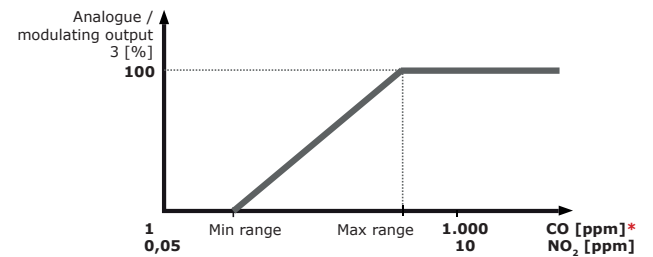
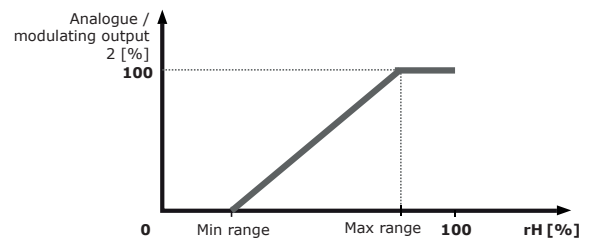
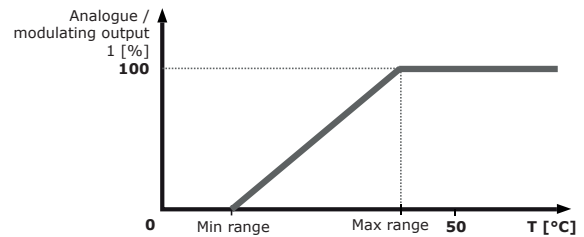
## Fixing and dimensions



## Operational diagram(s)



\* LED indications - CO (default)/NO<sub>2</sub>, T or rH




\*CO and NO<sub>2</sub> measurements will return 0 ppm during warm-up time.



# RSCOH-R

## CO / NO<sub>2</sub> room transmitter

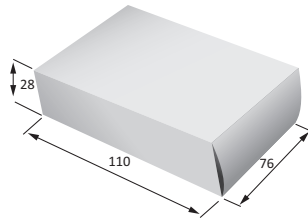
### Standards

- Low Voltage Directive 2014/35/EC 
  - EN 60529:1991 Degrees of protection provided by enclosures (IP Code) Amendment AC:1993 to EN 60529
- EMC directive 2014/30/EU:
  - EN 60730-1:2011 Automatic electrical controls for household and similar use - Part 1: General requirements
  - EN 61000-6-1:2007 Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments
  - EN 61000-6-3:2007 Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments. Amendments A1:2011 and AC:2012 to EN 61000-6-3
  - EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
  - EN 61326-2-3:2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-3: Particular requirements. Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning
- WEEE 2012/19/EC
- RoHS Directive 2011/65/EC

### Global trade item numbers (GTIN)

Packaging	RSCOH-R
<b>Unit</b>	05401003011331
<b>Carton</b>	05401003301777
<b>Box</b>	05401003502594

### Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
RSCOH-R	Unit (1 pc.)	110	76	28	0,089 kg	0,111 kg
	Carton (24 pcs.)	492	182	84	2,14 kg	2,804 kg
	Box (144 pcs.)	510	410	270	12,81 kg	18,066 kg