

RSMFM-3

Multifunctional CO₂ room transmitter, PoM



The RSMFM-3 are multifunctional room transmitters which measure CO₂ concentration levels, temperature, relative humidity and ambient light. They are Power over Modbus supplied and all parameters are accessible via Modbus RTU.

Key features

- Selectable CO₂, temperature and relative humidity ranges
- Outputs available via Modbus RTU input registers
- A bootloader for firmware updates using Modbus RTU communication
- Ambient light sensor with adjustable 'active' and 'standby' level
- 3 LEDs with adjustable light intensity for status indication
- Long-term stability and accuracy

Area of use

- Monitoring indoor temperature, relative humidity and CO₂ levels in HVAC applications
- Suitable for residential and commercial buildings
- For indoor use only

Article codes

Article code	Supply voltage	I _{max}	Connection type
RSMFM-3	24 VDC, PoM	30 mA	RJ45 socket

Technical specifications

Supply voltage	24 VDC, Power over Modbus	
Typical range of use	Temperature	0–50 °C
	Relative humidity	0–95 % rH (non-condensing)
	CO ₂ range	400–2.000 ppm
Accuracy		±0,5 °C (5–50 °C)
		±6 % rH (20–80 % rH)
	400–2.000 ppm CO ₂	±(50 ppm + 3 % of the reading)
	2.001–5.000 ppm CO ₂	±(40 ppm + 5 % of the reading)
Protection standard	IP30 (according to EN 60529)	

How to configure



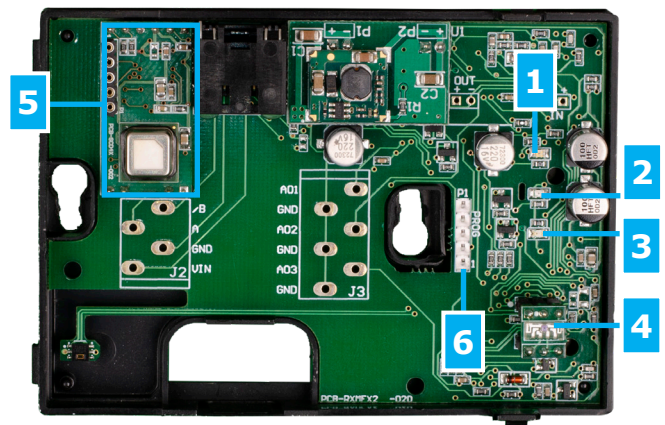
Via a Sentera Internet Gateway you can connect your installation to the SenteraWeb HVAC cloud and:




- Easily change the parameter settings of the connected devices remotely
- Define users and give them access to monitor the installation via a standard web browser
- Log data - create diagrams and export logged data
- Receive alerts or warnings when measured values exceed alert ranges or when errors occur
- Create different regimes for your ventilation system - e.g. day-night regime

Please refer to the Modbus Register Map of the product for more details regarding the Modbus registers.



Settings and indications

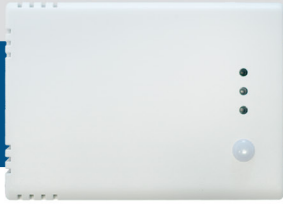


1 - Red LED	On	Measured temperature or relative humidity values are out of range or CO ₂ is higher than or equal to Alert 2 level
	Blinking	Communication with one of the sensors fails
2 - Yellow LED	On	Measured temperature or relative humidity values are in the alert range or CO ₂ is higher than or equal to Alert 1 level
3 - Green LED	On	Measured temperature or relative humidity values are within range or CO ₂ level is lower than Alert 1 level
4 - Ambient light sensor		Low light intensity / Active / Standby
5 - CO ₂ sensor element		To measure CO ₂ concentration, self-calibrating
6 - PROG header, P1		Put a jumper on pins 1 and 2 and wait for at least 5 seconds to reset the Modbus communication parameters
		Put a jumper on pins 3 and 4 and restart the supply to enter bootloader mode

Note: By default, the LED indicators visualise the measured CO₂ level. When the sensor is in bootloader mode, the green and yellow LEDs flash alternately. During the firmware download, the red LED is flashing additionally.

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Wiring and connections

RJ45 socket (Power over Modbus)

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		

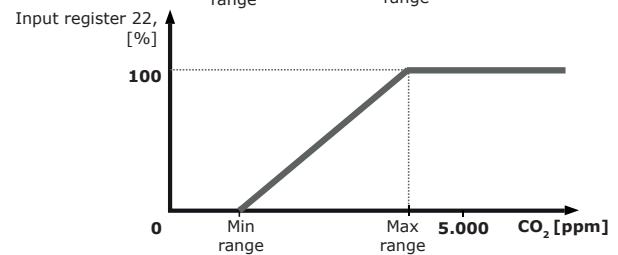
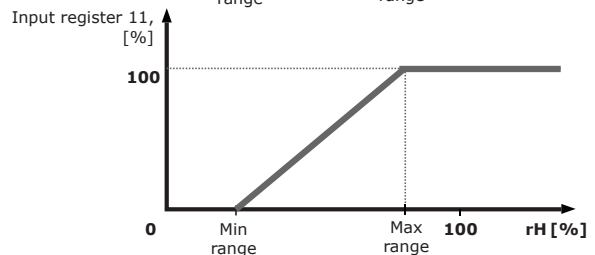
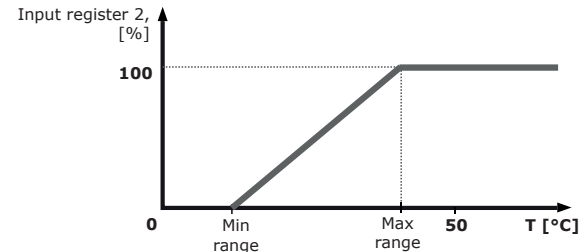


Standards

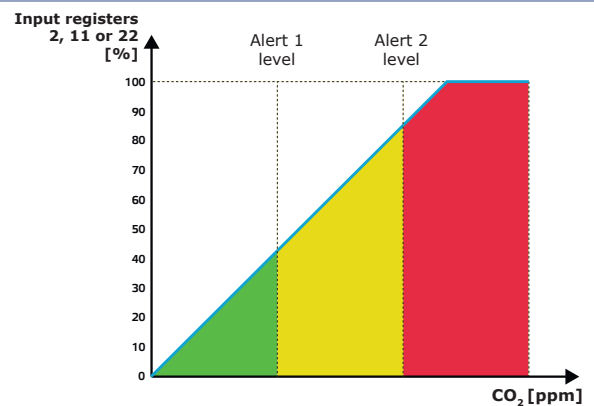


- Low Voltage Directive 2014/35/EU
 - EN 60529:1991 Degrees of protection provided by enclosures (IP Code) Amendment AC:1993 to EN 60529
 - EN 60730-1:2011 Automatic electrical controls for household and similar use - Part 1: General requirements
- EMC Directive 2014/30/EU
 - EN 60730-1:2011 Automatic 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 transmitters with integrated or remote signal conditioning.
- WEEE 2012/19/EU
- RoHS Directive 2011/65/EU
 - EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

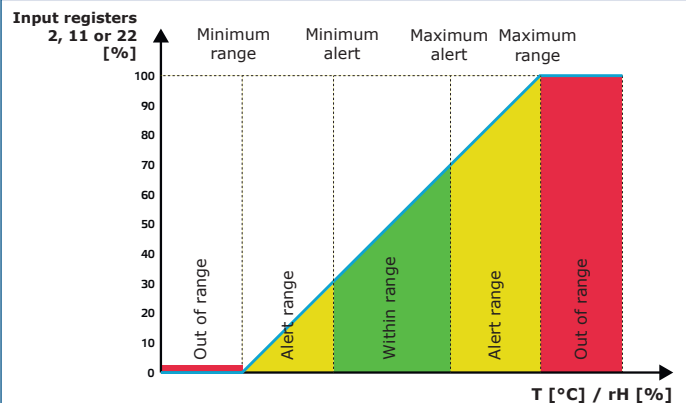
Operational diagrams



LED indication of CO₂ sensor (default setting)



LED indication of temperature and humidity sensor





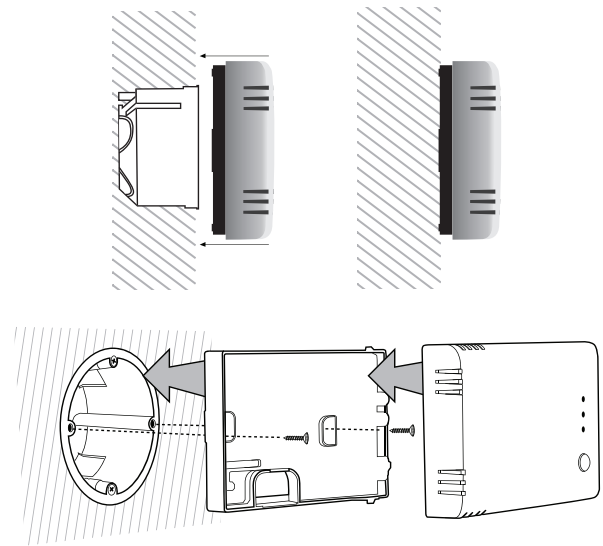
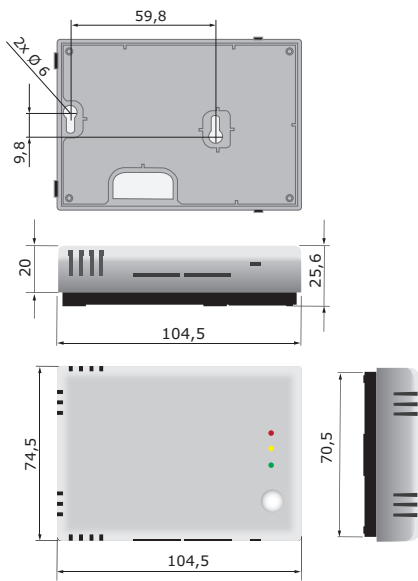
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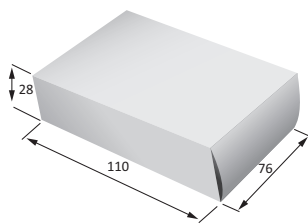
Global trade item numbers (GTIN)

Packaging	RSMFM-3
Unit	05401003018873
Carton	05401003302965
Box	05401003504390

Fixing and dimensions



Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
RSMFM-3	Unit (1 pc.)	110	76	28	0,088 kg	0,101 kg
	Carton (24 pcs.)	492	177	85	2,112 kg	2,574 kg
	Box (144 pcs.)	590	380	505	12,672 kg	16,434 kg