

RSMFVB-2R

Multifunctional room transmitter with buzzer

The RSMFVB-2R series are multifunctional room sensors with integrated audible alarm output which measure temperature, relative humidity, CO₂ concentration and ambient light level. These room sensors also feature 3 analogue / modulating outputs - one for temperature, one for relative humidity and one for CO₂ concentration and a wide range of low voltage power supply. They are Power over Modbus supplied and all parameters are accessible via Modbus RTU.

Key features

- Adjustable temperature, relative humidity and CO₂ ranges
- Replaceable audible alarm module, settable via Modbus register (OFF, continuous or pulsed)
- Ambient light sensor with adjustable 'active' and 'standby' level
- Replaceable CO₂ sensor element
- Modbus RTU (RS485) communication
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- Green, yellow and red LEDs with adjustable light intensity for status indication
- Long-term stability and accuracy
- Three selectable analogue / modulating outputs

Technical specifications

3 analogue / modulating outputs	0—10 VDC mode: min. load 50 kΩ (R _L ≥ 50 kΩ)	
	0—20 mA mode: max. load 500 Ω (R _L ≤ 500 Ω)	
PWM (open-collector type) mode: 1 kHz, min. load 50 kΩ (R _L ≥ 50 kΩ), PWM voltage level: 3,3 VDC or 12 VDC		
Typical range of use	Temperature	0—50 °C
	Relative humidity	0—100 % rH (non-condensing)
	CO ₂ range	0—2.000 ppm
Accuracy	±0,4 °C (0—50 °C)	
	±3 % rH (0—100 % rH)	
30 ppm CO ₂ ±3 % (0—2.000 ppm CO ₂)		
Protection standard	IP30 (according to EN 60529)	


Article codes

Article code	Supply	I _{max}
RSMFVB-2R	18—34 VDC	130 mA
RSMFGB-2R	18—34 VDC / 15—24 VAC ±10%	130 mA

Area of use

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

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/EC:
 - 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
- WEEE 2012/19/EC
- RoHS Directive 2011/65/EC



Wiring and connections

Article type	RSMFVB-2R	RSMFGB-2R	
VIN	18—34 VDC	18—34 VDC	15—24 VAC ±10%
GND	Ground	Common ground*	AC ~*
A	Modbus RTU (RS485) communication, signal A		
/B	Modbus RTU (RS485) communication, signal /B		
AO1	Analogue / modulating output 1 for temperature measurement (0—10 VDC / 0—20 mA / PWM)		
GND	Ground AO1	Common ground*	
AO2	Analogue / modulating output 2 for relative humidity measurement (0—10 VDC / 0—20 mA / PWM)		
GND	Ground AO2	Common ground*	
AO3	Analogue / modulating output 3 for CO ₂ measurement (0—10 VDC / 0—20 mA / PWM)		
GND	Ground AO3	Common ground*	
Connections	Spring contact terminal blocks, cable cross section: 1,5 mm ²		

***Attention!** The -F version of the 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. Minimum 4 wires are required to connect -F type sensors.

The -G version is intended for 3-wire connection and features a 'common ground'. This means that the ground of the analogue output is internally connected with the ground of the power supply. For this reason, -G and -F types cannot be used together on the same network. Never connect the common ground of -G type articles to other devices powered by a DC voltage. Doing so might cause permanent damage to the connected devices.

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 3SMobus software platform. You can download it from the following link:

<https://www.sentera.eu/en/3SMCenter>



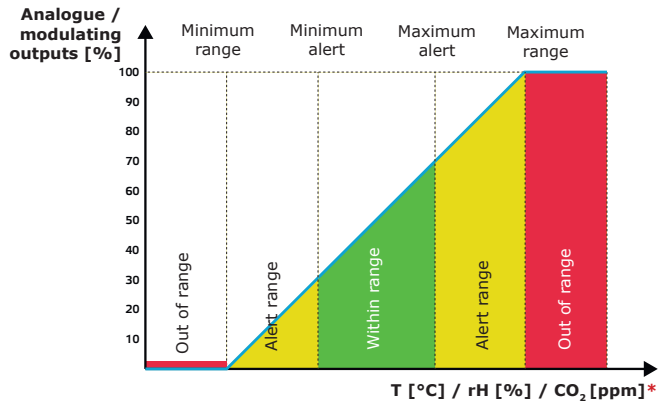
For more information about the Modbus registers, please refer to the product Modbus Register Map.

RSMFXB-2R

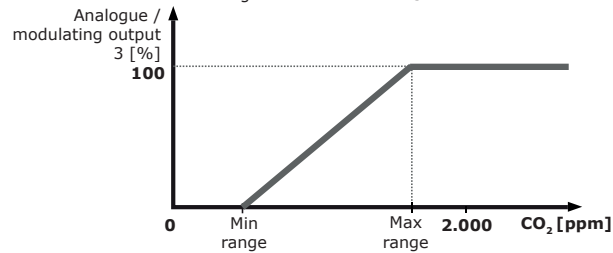
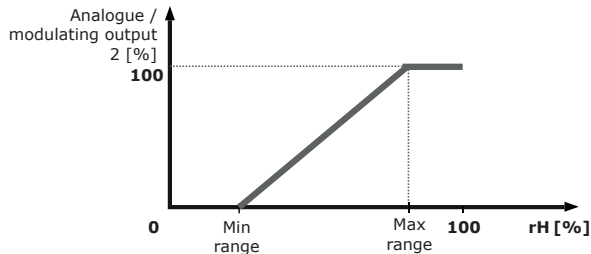
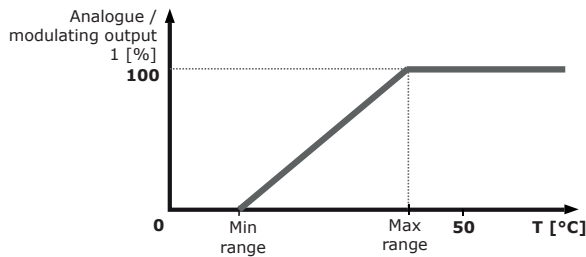
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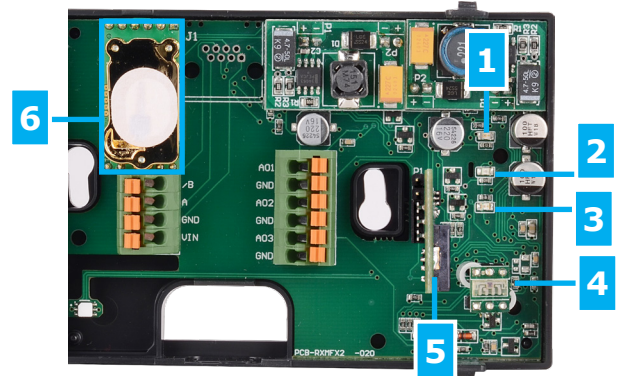
Operational diagram(s)




*LED indications - CO₂ (default), T or rH



Settings and indications



1 - Red LED	Continuous	Measured temperature, relative humidity or CO ₂ exceed the minimum or maximum range
	Blinking	Communication with one of the sensor elements fails
2 - Yellow LED	On	Measured temperature, relative humidity or CO ₂ exceed the minimum or maximum alert value
3 - Green LED	On	Measured temperature, relative humidity or CO ₂ are within range
4 - Ambient light sensor		Low light intensity / Active / Standby
5 - Buzzer		Adjustable audible alarm, corresponding to the measurements
6 - CO ₂ sensor element		Replaceable in case of faulty operation

Global trade item numbers (GTIN)

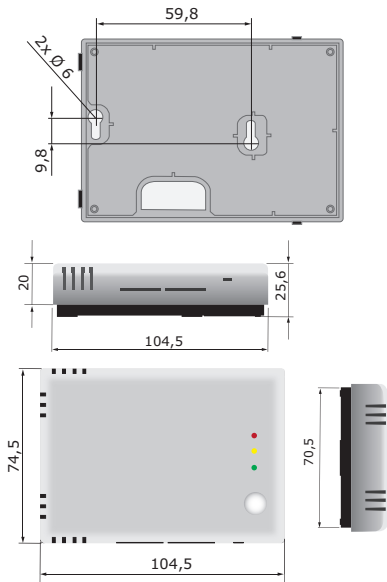
Packaging	RSMFFB-2R	RSMFGB-2R
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Carton	05401003302590	05401003302606
Box	05401003503737	05401003503744



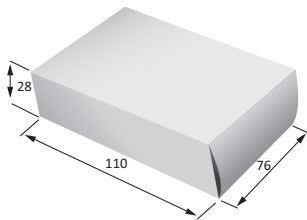
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Fixing and dimensions



Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
RSMFFB-2R RSMFGB-2R	Unit (1 pc.)	110	76	28	0,092 kg	0,13 kg
	Carton (24 pcs.)	492	182	84	2,2 kg	3,2 kg
	Box (144 pcs.)	590	380	280	13,2 kg	20,3 kg