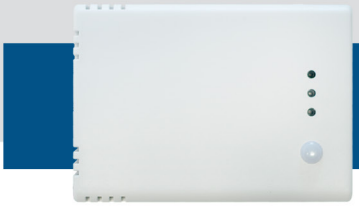
SENTERA CONTROLS



RCVCM-R

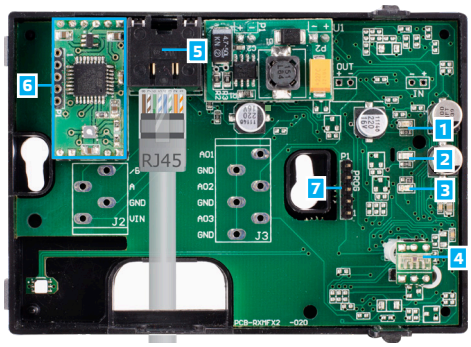
Intelligent TVOC room sensor

The RCVCM-R are intelligent room sensors featuring adjustable temperature, relative humidity and TVOC ranges. The used algorithm generates an output value based on the measured T, rH and TVOC values, which can be used to directly control an EC fan, an AC fan speed controller or an actuator powered damper. They are Power over Modbus supplied and all parameters are accessible via Modbus RTU.

Key features

- 24 VDC power supply via RJ45 (PoM)
- Selectable temperature, relative humidity and TVOC ranges
- Fan speed control based on T, rH and TVOC measurement
- Silicon based sensor elements for TVOC measurement
- 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 TVOC sensor module
- 3 LEDs with adjustable light intensity for status indication
- Long-term stability and accuracy

Indications



1 - Red LED	On	Measured temperature, relative humidity or TVOC values are out of range
	Blinking	Communication with one of the sensors fails
2 - Yellow LED	On	Measured temperature, relative humidity or TVOC values are in the alert range
3 - Green LED	On	Measured temperature, relative humidity or TVOC values are within range
	Blinking	TVOC sensor is 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
7 - PROG header, P1	 1 2 3 4 5	Put a jumper onto pins 1 and 2 and wait for at least 5 seconds to reset the Modbus communication parameters
	 1 2 3 4 5	Put a jumper onto pins 3 and 4 and restart the power supply to enter bootloader mode

Note: *By default, the LED indicators visualise the measured TVOC 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.*

Wiring and connections

RJ45 socket (Power over Modbus)

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

Area of use

- Demand controlled ventilation based on measured temperature, relative humidity and TVOC
- Suitable for residential and commercial buildings
- For indoor use only

Article codes

Article code	Supply	Imax	Connection
RCVCM-R	24 VDC, PoM	30 mA	RJ45

Technical specifications

Supply		24 VDC, Power over Modbus
Warm-up time		15 minutes
Typical range of use	Temperature range	0—50 °C
	Relative humidity range	0—95 % rH (non-condensing)
	TVOC range	0—60.000 ppb
Accuracy		± 0,4 °C (range 0—50 °C)
		± 3% rH (range 0—100 %)
		±15 % TVOC (range 0—60.000 ppb)
Protection standard		IP30 (according to EN 60529)

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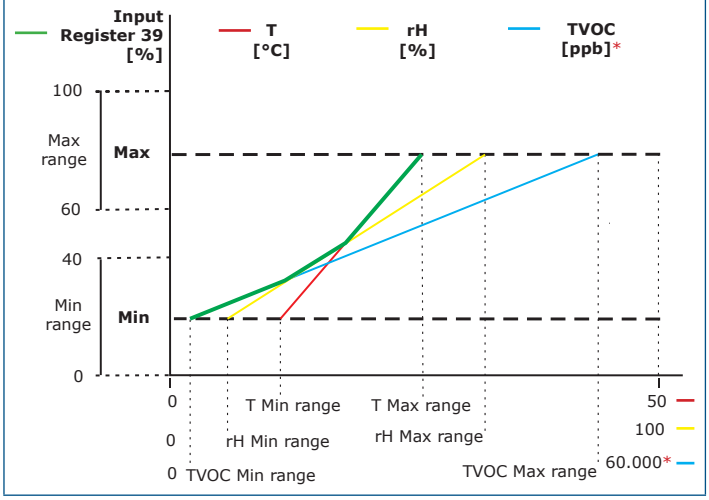
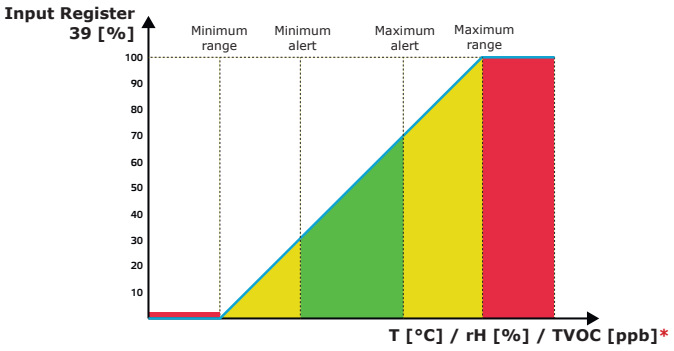
Operational diagram(s)



*TVOC measurements will return 0 ppb during warm-up time.

Note: *The output changes automatically depending on the highest of the T, rH or TVOC values, i.e. the highest of the three output values controls the output. See the green line in the operational diagram above. One or multiple sensors can be deactivated. E.g it is possible to control the output based on the measured TVOC value only.*

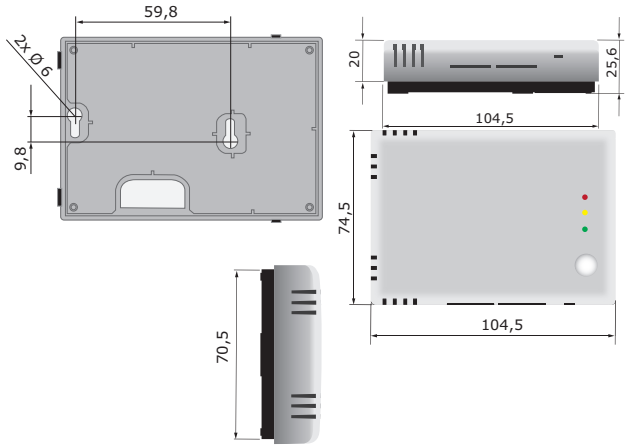


***LED indications - T, rH or TVOC (default)**

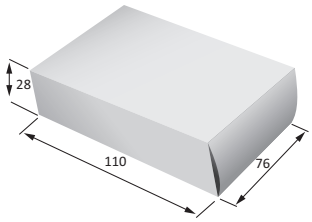
Standards

- 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 transducers with integrated or remote signal conditioning
- WEEE 2012/19/EU
- RoHs Directive 2011/65/EU

Fixing and dimensions



Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
RCVCM-R	Unit (1 pc.)	110	76	28	0,089	0,111 kg
	Carton (24 pcs.)	492	182	84	2,14 kg	2,284 kg
	Box (144 pcs.)	510	410	270	12,81 kg	18,066 kg

Global trade item numbers (GTIN)

Packaging	RCVCM-R
Unit	05401003018156
Carton	05401003302705
Box	05401003503881

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.