OCVCM-R

Intelligent TVOC sensor for harsh environments

The OCVCM-R are intelligent sensors featuring adjustable temperature, relative humidity and TVOC ranges suitable for outdoor applications or tough environments. Based on the temperature and relative humidity measurements, the dew point temperature is calculated. The used algorithm generates an output value based on the measured temperature, humidity 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 communication.

Key features

- Wiring via RJ45 connector
- Suitable for harsh environments
- Selectable temperature, relative humidity and TVOC ranges
- Fan speed control based on temperature, humidity and TVOC
- 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
- Long-term stability and accuracy
- Replaceable TVOC sensor module

Area of use

- Demand controlled ventilation based on temperature, relative humidity and TVOC
- Suitable for both indoor and outdoor use (e.g. open-air spaces, multi-storey and subterranean car parks, residential and commercial buildings)

Article codes

Article code	Supply	Imax	Connection
OCVCM-R	24 VDC, PoM	15 mA	RJ45

Technical specifications

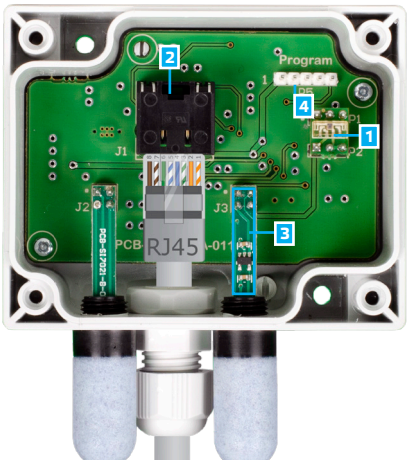
Supply voltage		24 VDC, Power over Modbus
Warm-up time		15 minutes
Typical range of use	Temperature range	-30—70 °C
	Relative humidity range	0—100 % rH (non-condensing)
	TVOC range	0—60.000 ppb
Accuracy		±0,4 ºC (-30—70 ºC)
		±3 % rH (0—100 % rH)
		±15 % TVOC (range 0—60.000 ppb)
Protection standard		IP65 (according to EN 60529)

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		

Indications



1 - Ambient light sensor		Low light intensity / Active / Standby
2 - RJ45 socket		Plug the communication and power cable into the socket
3 - TVOC sensor element		Replaceable in case of faulty operation
4 - PROG header	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

OCVCM-R

Intelligent TVOC sensor for harsh environments

Modbus registers

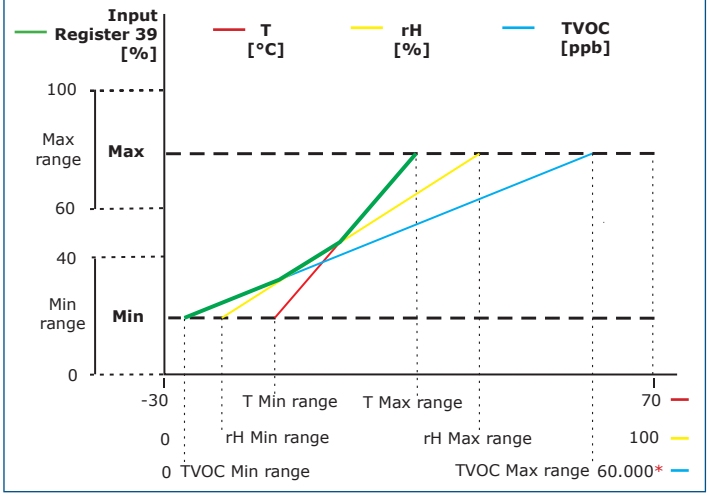
The Sensistant Modbus configurator allows you to easily monitor and/or configure Modbus parameters.

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.

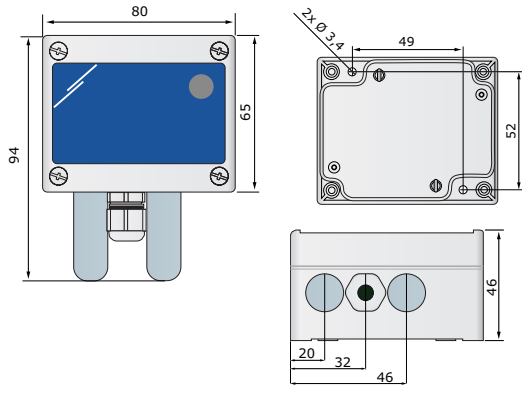
Operational diagram(s)



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 also possible to control the output based on the measured TVOC values only.*

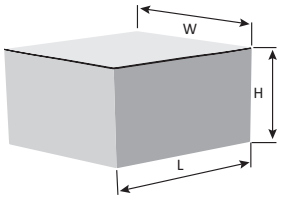
Fixing and dimensions



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 61010-1:2010 Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements
- EMC directive 2014/30/EU
  - EN 61000-6-1:2007 Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments
  - EN 61000-6-2:2005 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments Amendment AC:2015 to EN 61000-6-2
  - 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

Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
OCVCM-R	Unit (1 pc.)	105	80	55	0,150 kg	0,190 kg
	Box (80 pcs.)	590	380	280	12,00 kg	15,2 kg
	Pallet (2,240 pcs.)	1,200	800	2,100	336 kg	425,6 kg

Global trade item numbers (GTIN)

Packaging	OCVCM-R
Unit	05401003018163
Box	05401003503898
Pallet	05401003700983