



OCMFM-R

Intelligent CO2 sensor for harsh environments

The OCMFM-R are intelligent sensors featuring adjustable temperature, relative humidity and CO₂ ranges suitable for outdoor applications or tough environments. The used algorithm controls a single analogue / modulating output based on the measured temperature, humidity and CO₂ 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.

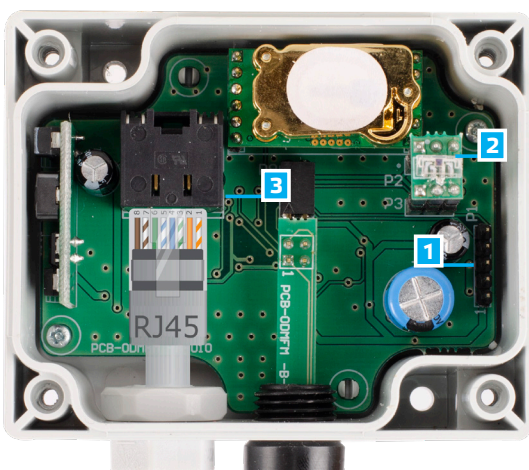
Key features

- Wiring via RJ45 connector
- Suitable for harsh environments
- Selectable temperature, relative humidity and CO₂ ranges
- Fan speed control based on temperature, humidity and CO₂
- 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 CO₂ sensor element
- Long-term stability and accuracy

Technical specifications

Supply voltage	24 VDC, Power over Modbus	
Maximum power consumption	1,2 W	
Nominal power consumption	0,9 W	
Imax	50 mA	
Typical range of use	Temperature range	-30—70 °C
	Relative humidity range	0—100 % rH (non-condensing)
	CO ₂ range	400—2.000 ppm
Accuracy	± 0,4 °C (range -30—70 °C)	
	± 3% rH (range 0—100 %)	
	± 30 ppm (range 400—2.000 ppm)	
Protection standard	IP65 (according to EN 60529)	

Settings



1 - PROG header, P1		Put a jumper onto pins 1 and 2 and wait for at least 5 seconds to reset the Modbus communication parameters
		Put a jumper onto pins 3 and 4 and restart the supply to enter bootloader mode
2 - Ambient light sensor		Low light intensity / Active / Standby
3 - RJ45 Socket		Plug the communication and power cable into the socket



Article codes

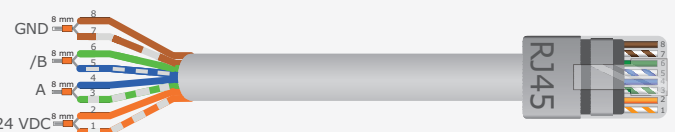
	Supply	Connection
OCMFM-R	24 VDC, PoM	RJ45

Area of use

- Demand controlled ventilation based on temperature, relative humidity and CO₂
- Suitable for both indoor and outdoor use (e.g. open-air spaces, multi-storey and subterranean car parks, residential and commercial buildings)

Wiring and connections

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

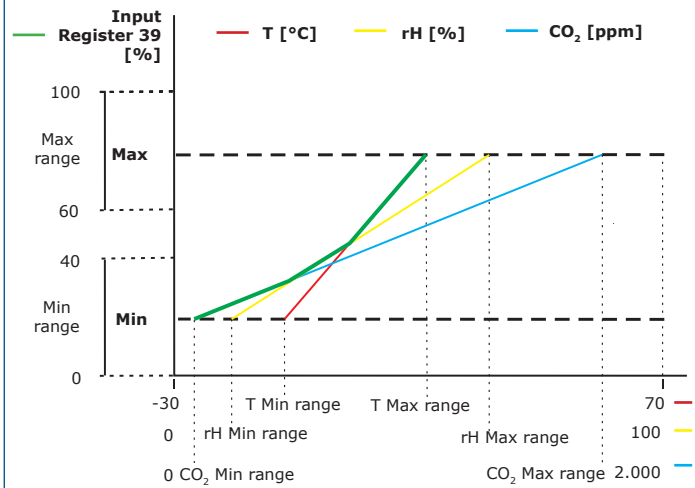




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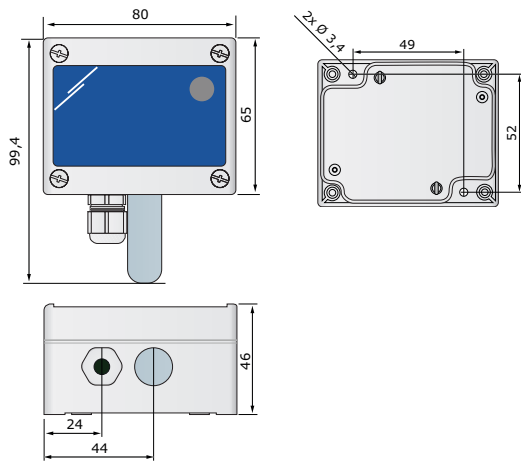
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Operational diagram



Note: The output changes automatically depending on the highest of the T, rH or CO₂ values, i.e. the highest of 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 CO₂ values only.

Fixing and dimensions



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>

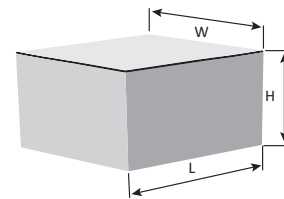
For more information about the Modbus registers, please refer to the product Modbus Register Map.

Standards

- Low Voltage Directive 2014/35/EC:
 - 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/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 for transducers with integrated or remote signal conditioning
- WEEE 2012/19/EC
- RoHS Directive 2011/65/EC



Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
OCMFM-R	Unit (1 pc.)	110	90	50	0,125 kg	0,155 kg
	Box (80 pcs.)	590	380	280	10,00 kg	13,26 kg

Global trade item numbers (GTIN)

Packaging	OCMFM-R
Unit	05401003010631
Carton	05401003301562
Box	05401003502310