SENTERA
C O N T R O L S

DCMFM-2R
Intelligent CO_2 duct sensor

The DCMFM-2R is an intelligent duct sensor featuring adjustable temperature, relative humidity and CO_2 ranges. The used algorithm generates an output value based on the measured T, rH and CO_2 levels, which can be used to directly control an EC fan, an AC fan speed controller or an actuator powered damper. It is 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 CO_2 ranges
- Bootloader for updating the firmware via Modbus RTU communication
- Modbus RTU communication
- Replaceable CO_2 sensor element
- Long-term stability and accuracy

Technical specifications

Supply voltage		24 VDC, Power over Modbus
Maximum power consumption		1,08 W
Nominal power consumption		0,81 W
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 % rH)
		± 30 ppm (range 400—2.000 ppm)
Min. airflow velocity		1 m /s
Protection standard		Enclosure: IP54, probe: IP20

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/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/EC
- RoHs Directive 2011/65/EC

Article codes

	Supply	Connection	Imax
DCMFM-2R	24 VDC, PoM	RJ45	45 mA

Area of use

- Demand controlled ventilation based on temperature, relative humidity and CO_2
- Suitable for mounting in air ducts

Operational diagram(s)
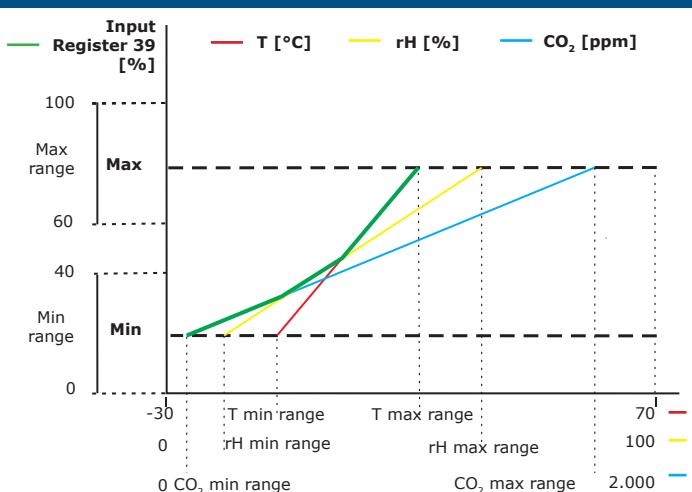
Note: The output changes automatically depending on the highest of the T, rH or CO_2 values, i.e. the highest of the three output values controls the output signal. See the green line in the operational diagram above. One or multiple sensors can be deactivated. E.g. it is also possible to control the output based on the measured CO_2 value only.

Settings
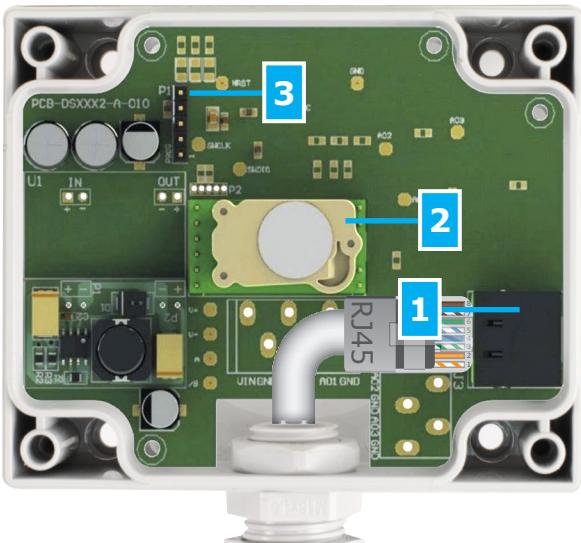
|		
1 - RJ45 socket		Plug the communication and power cable into the socket
2 - CO$_2$ sensor element		Replaceable in case of faulty operation
3 - PROG header, P1	1 2 3 4 5	Put a jumper onto pins 1 and 2 and wait for at least 5 seconds to reset the Modbus communication parameters
	1 2 3 4 5	Put a jumper onto pins 3 and 4 and restart the supply to enter bootloader mode
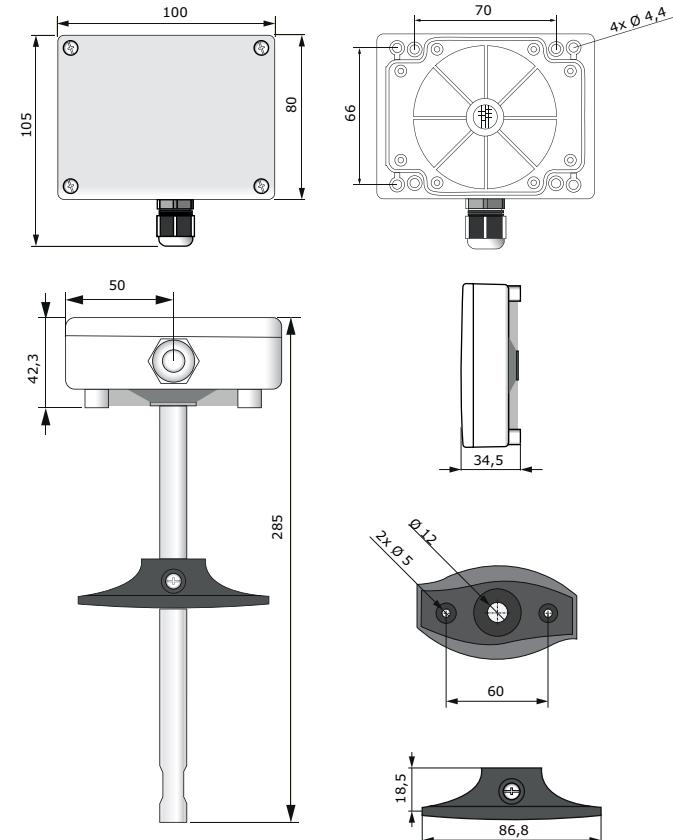
Wiring and connections

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

Global trade item numbers (GTIN)

Packaging	DCMFM-2R
Unit	05401003000694
Box	05401003500200
Pallet	05401003700020

Fixing and dimensions
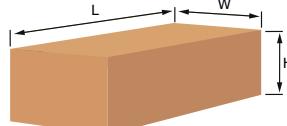
Packaging

Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
DCMFM-2R	Unit (1 pc.)	310	115	115	0,20 kg	0,308 kg
	Box (20 pcs.)	590	380	505	4 kg	4,20 kg
	Pallet (320 pcs.)	1,200	800	2,016	64 kg	64 kg