RCTHM-2

Intelligent temperature and humidity room sensor

The RCTHM-2 are intelligent room sensors featuring adjustable temperature and relative humidity ranges. The used algorithm generates an output value based on the measured temperature and humidity 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

- 24 VDC power supply via RJ45 (PoM)
- Selectable temperature and relative humidity ranges
- Fan speed control based on temperature and humidity
- Bootloader for updating the firmware via Modbus RTU communication
- Ambient light sensor with adjustable 'active' and 'standby' level
- Modbus RTU communication
- 3 LEDs with adjustable light intensity for status indication
- Long-term stability and accuracy

Technical specifications

Supply voltage	24 VDC, Power over Modbus	
Typical field of use	Temperature range	0—50 °C
	Relative humidity range	0—95 % rH (non-condensing)
Accuracy	± 0,4 °C (range 0—50 °C)	
	± 3% rH (range 0—100 %)	
Protection standard	IP30 (according to EN 60529)	

Article codes

Article code	Supply	Connection type	Imax
RCTHM-2	24 VDC	RJ45	30 mA

Area of use

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

Wiring and connections

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

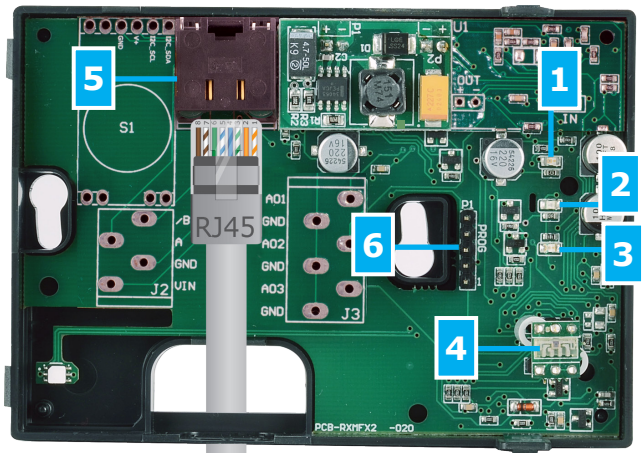
Modbus registers

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.

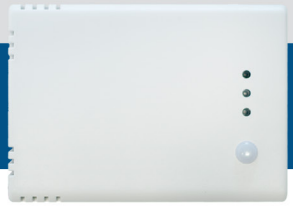
Indications



1 - Red LED	On	Measured temperature or relative humidity values are out of range
	Blinking	Communication with one of the sensors fails
2 - Yellow LED	On	Measured temperature or relative humidity values are in the alert range
3 - Green LED	On	Measured temperature or relative humidity values are within range
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 - 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 temperature 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.*

SENTERA CONTROLS



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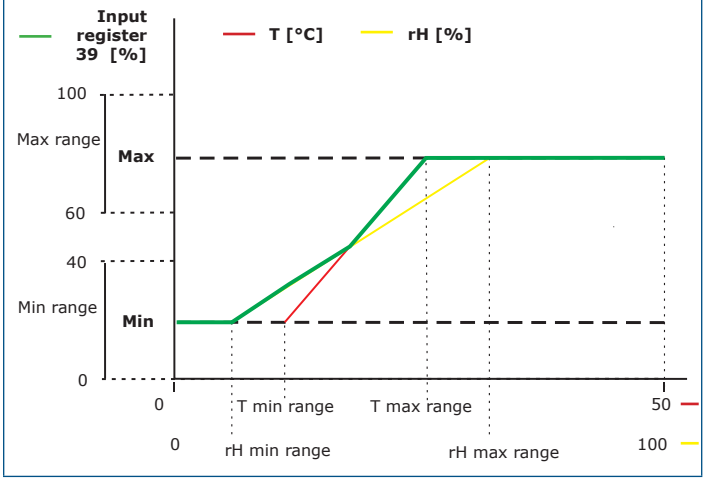
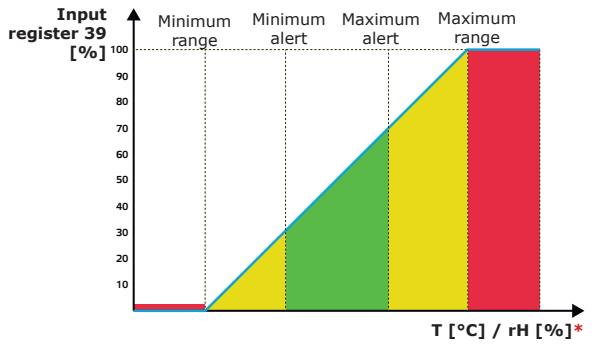
Operational diagram

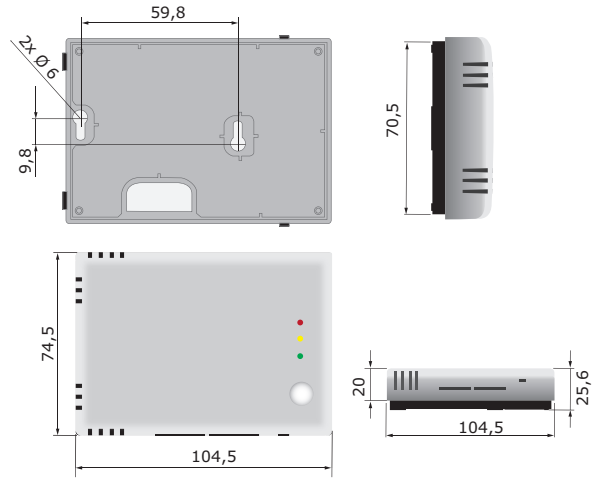


Note: *The output changes automatically depending on the highest of the T and rH values, i.e. the higher of the two output values controls the output. See the green line in the operational diagram above. One or multiple sensors can be deactivated. E.g. it is also possible to control the output based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



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

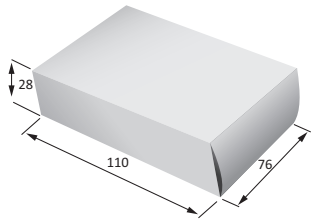
Fixing and dimensions



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 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

Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
RCTHM-2	Unit (1 pc.)	110	76	28	0,075 kg	0,083 kg
	Carton (24 pcs.)	46	182	84	1,8 kg	2,22 kg
	Box (60 pcs.)	590	410	270	10,08 kg	13,35 kg

Global trade item numbers (GTIN)

Packaging	RCTHM-2
Unit	05401003017951
Carton	05401003302545
Box	05401003503683