

RSTHX-3

Temperature and humidity room transmitter

The RSTHX-3 series are room sensors which measure temperature, relative humidity and ambient light. They feature a wide range of low voltage power supply and three analogue / modulating outputs. All parameters are accessible via Modbus RTU.

Key features

- Selectable temperature and relative humidity ranges
- 3 selectable analogue / modulating outputs - temperature, relative humidity and selectable temperature or relative humidity
- Ambient light sensor with adjustable 'active' and 'standby' level
- Modbus RTU (RS485)
- 3 LEDs with adjustable light intensity for status indication
- Long-term stability and accuracy

Technical specifications

Analogue / modulating outputs	0–10 VDC mode: $R_L \geq 50 \text{ k}\Omega$	
	0–20 mA mode: $R_L \leq 500 \Omega$	
	PWM (open-collector type) mode: 1 kHz, $R_L \geq 50 \text{ k}\Omega$, PWM voltage level: 3,3 VDC or 12 VDC	
Typical range of use	Temperature range	0–50 °C
	Relative humidity range	0–95 % rH (non-condensing)
Accuracy	$\pm 0,4 \text{ }^\circ\text{C}$ (range 0–50 °C)	
	$\pm 3\%$ rH (range 0–100 %)	
Protection standard	IP30 (according to EN 60529)	

Article codes

Article code	Supply	Imax
RSTHF-3	18–34 VDC	75 mA
RSTHG-3	18–34 VDC / 15–24 VAC $\pm 10\%$	75 mA / 85 mA

Wiring and connections

Article type	RSTHF-3	RSTHG-3	
VIN	18–34 VDC	18–34 VDC	15–24 VAC $\pm 10\%$
GND	Ground	Common ground*	AC ~*
A	Modbus RTU (RS485), signal A		
/B	Modbus RTU (RS485), signal /B		
AO1	Analogue / modulating output 1 for temperature measurement (0–10 VDC / 0–20 mA / PWM)		
GND	Ground AO	Common ground*	
AO2	Analogue / modulating output 2 for relative humidity measurement (0–10 VDC / 0–20 mA / PWM)		
GND	Ground AO	Common ground*	
AO3	Analogue / modulating output 3 for temperature or relative humidity measurement (0–10 VDC / 0–20 mA / PWM)		
GND	Ground AO	Common ground*	
Connections	Spring contact terminal blocks, cable cross section: 1,5 mm ²		

***Attention!** The -F version of the product is not suited for 3-wire connection. It has separate grounds for power supply and analogue output. Connecting both grounds together might result in incorrect measurements. Minimum 4 wires are required to connect -F type sensors.

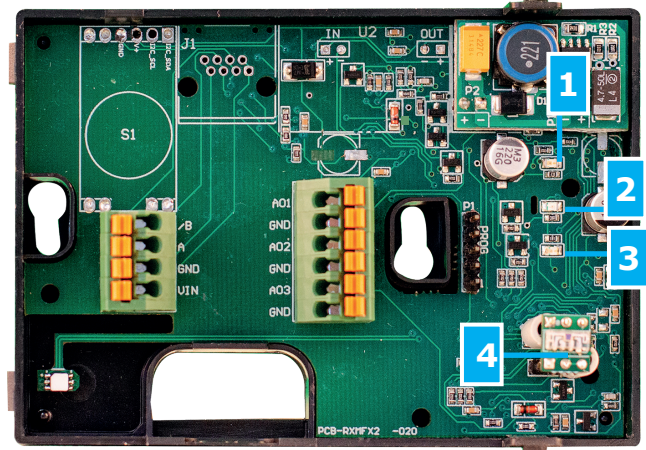
The -G version is intended for 3-wire connection and features a 'common ground'. This means that the ground of the analogue output is internally connected with the ground of the power supply. For this reason, -G and -F types cannot be used together on the same network. Never connect the common ground of -G type articles to other devices powered by a DC voltage. Doing so might cause permanent damage to the connected devices.




Area of use

- Monitoring indoor temperature and relative humidity in HVAC applications
- Suitable for residential and commercial buildings
- For indoor use only

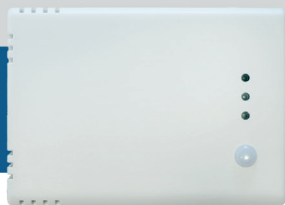
Indications



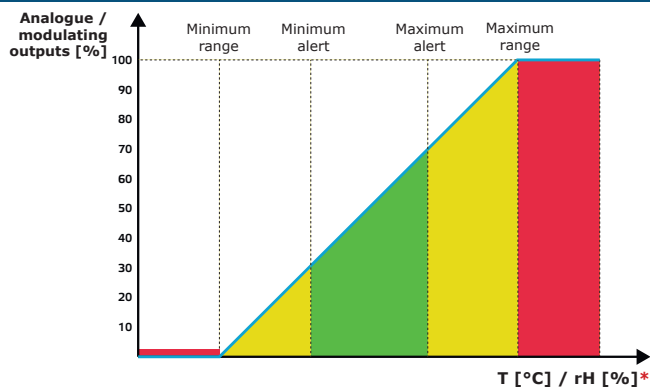
1 - Red LED	Continuous	Measured temperature or relative humidity are out of range
	Blinking	Communication with one of the sensors fails
2 - Yellow LED	On	Measured temperature or relative humidity are in the alert range
3 - Green LED	On	Measured temperature or relative humidity are within range
4 - Ambient light sensor		Low light intensity / Active / Standby

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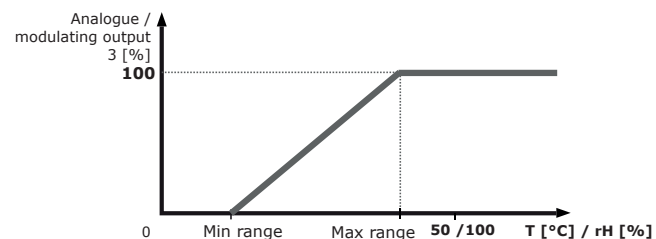
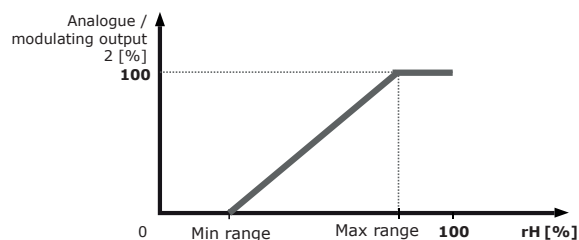
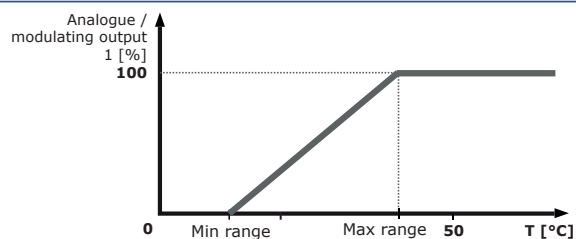
Temperature and humidity room transmitter



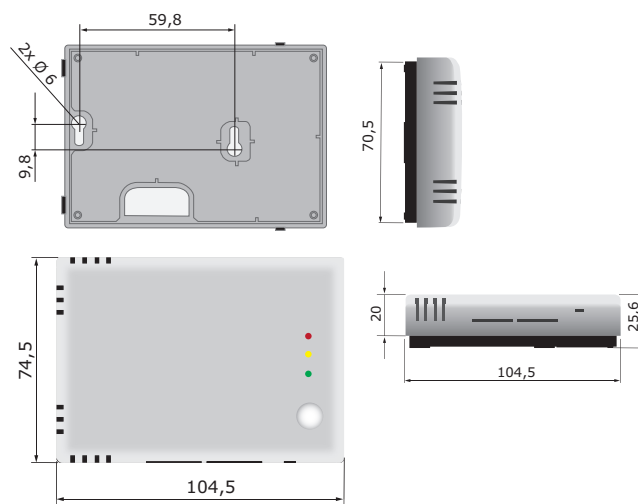
Operational diagram(s)



* LED indications - T (default) / rH



Fixing and dimensions



Modbus registers



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

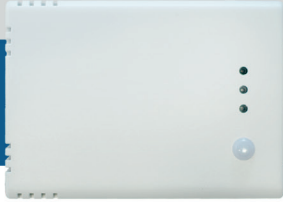
The parameters of the unit can be monitored / configured through the 3SMobus software platform. You can download it from the following link:
<https://www.sentera.eu/en/3SMCenter>

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
- 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

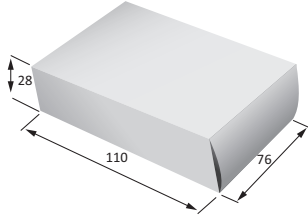




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Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
RSTHF-3 RSTHG-3	Unit (1 pc.)	110	76	28	0,080 kg	0,092 kg
	Carton (24 pcs.)	492	182	84	1,92 kg	2,34 kg
	Box (144 pcs.)	510	410	270	11,52 kg	14,065 kg

Global trade item numbers (GTIN)

Packaging	RSTHF-3	RSTHG-3
Unit	05401003017708	05401003017715
Carton	05401003302378	05401003302385
Box	05401003503485	05401003503492