

# 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 <sup>2</sup>		

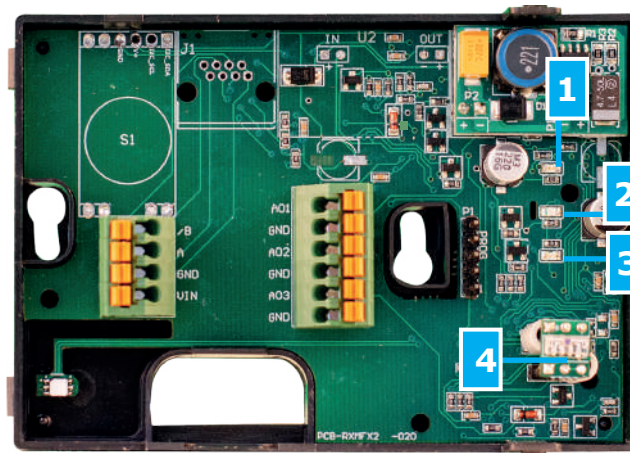
**\*Attention!** The -F version of the product is not suited for 3-wire connection. It has separate grounds for power supply and analogue output. Connecting both grounds together might result in incorrect measurements. Minimum 4 wires are required to connect -F type sensors.


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



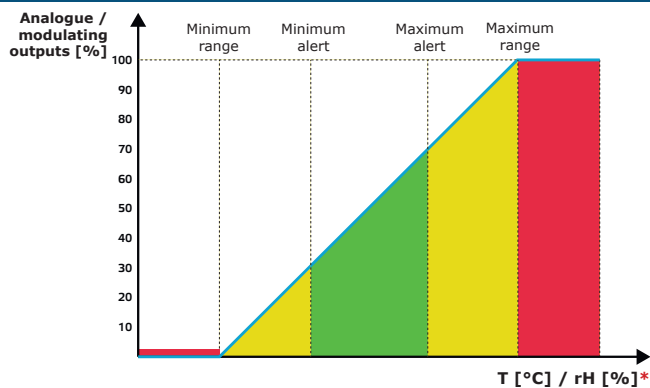
1 - Red LED	Continuous	Measured temperature or relative humidity are out of range
	Blinking	Communication with one of the sensors fails
2 - Yellow LED	On	Measured temperature or relative humidity are in the alert range
3 - Green LED	On	Measured temperature or relative humidity are within range
4 - Ambient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



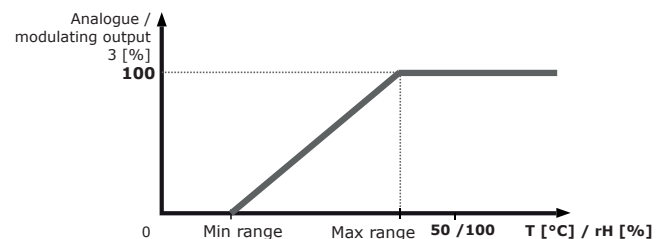
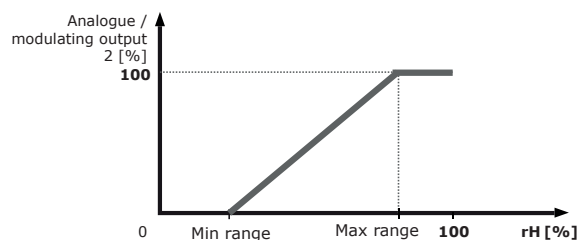
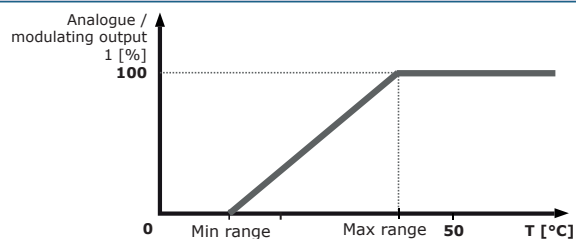
# RSTHX-3

Temperature and humidity room transmitter

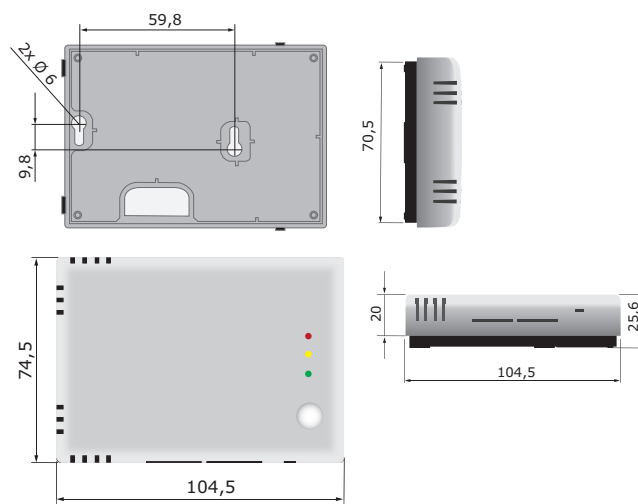
## Operational diagram(s)



\* LED indications - T (default) / rH



## 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



- 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

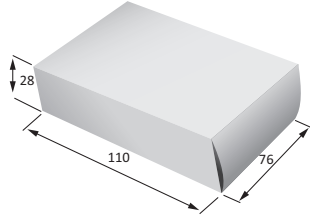
- RoHS Directive 2011/65/EC



# RSTHX-3

Temperature and humidity room transmitter

## 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
<b>Unit</b>	05401003017708	05401003017715
<b>Carton</b>	05401003302378	05401003302385
<b>Box</b>	05401003503485	05401003503492