sauermann TH 210-R Humidity and Temperature Sensor User Guide

Contents

sauermann TH 210-R Humidity and Temperature Sensor

Humidity and temperature transmitter

- Stainless steel or polycarbonate probes
- 2 relay outputs
- Two 4-wire analogue output 0-5/10 V or 0/4-20 mA
- ABS V0 IP65 housing with or without display

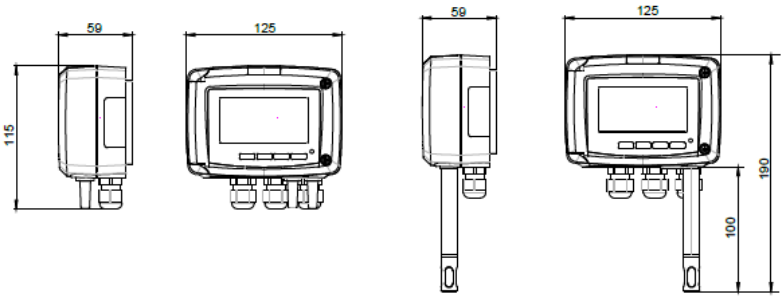
General features

Power supply	Warning: risk of electric shock
Output	2 x 4-20 mA or 2 x 0-20 mA or 2 x 0-5 V or 2 x 0-10 V (4 wires) Common mode voltage < 30 VAC. Maximum load: 500 Ω (0/4-20 mA). Minimum load: 10 kΩ (0-5/10 V)
Relay outputs	2 changeover relays. NO: 5 A/NC: 3 A/240 Vac
Galvanic isolation	Inputs and outputs (models 100-240 Vac). Device fully protected by DOUBLE ISOLATION or REINFORCED ISOLATION Outputs (models 24 Vac/Vdc)
Consumption	TH 210-B: 6 VA/TH 210-H: 8 VA
Electrical connection	Screw terminal block for cable 2.5 mm². Executed following the good practices guidelines.
Type of sensor	Hygrometry: capacitive. Temperature: Pt100 1/3 as per IEC 60751 (2008)
Type of fluid	Air and neutral gases
PC communication	USB-Mini Din cable
Environment	Air and neutral gases
Conditions of use (°C/%RH/m)	From -10 to 50 °C. In non-condensing condition. From 0 to 2000 m.
Storage temperature	From -10 to 70 °C
Security	Protection class II. Pollution degree 2. Overvoltage CAT II
European directives	2014/30/EU EMC; 2014/35/EU Low Voltage; 2011/65/EU RoHS II; 2012/19/EU WEEE

Features of the housing

Material	ABS V0 as per UL94
Protection	IP65
Display	75 x 40 mm, LCD 20 digits 2 lines. Height of digits: Values: 10 mm; Units: 5 mm
Cable gland	For cables Ø 8 mm maximum
Weight	340 g

All dimensions are in millimeters.

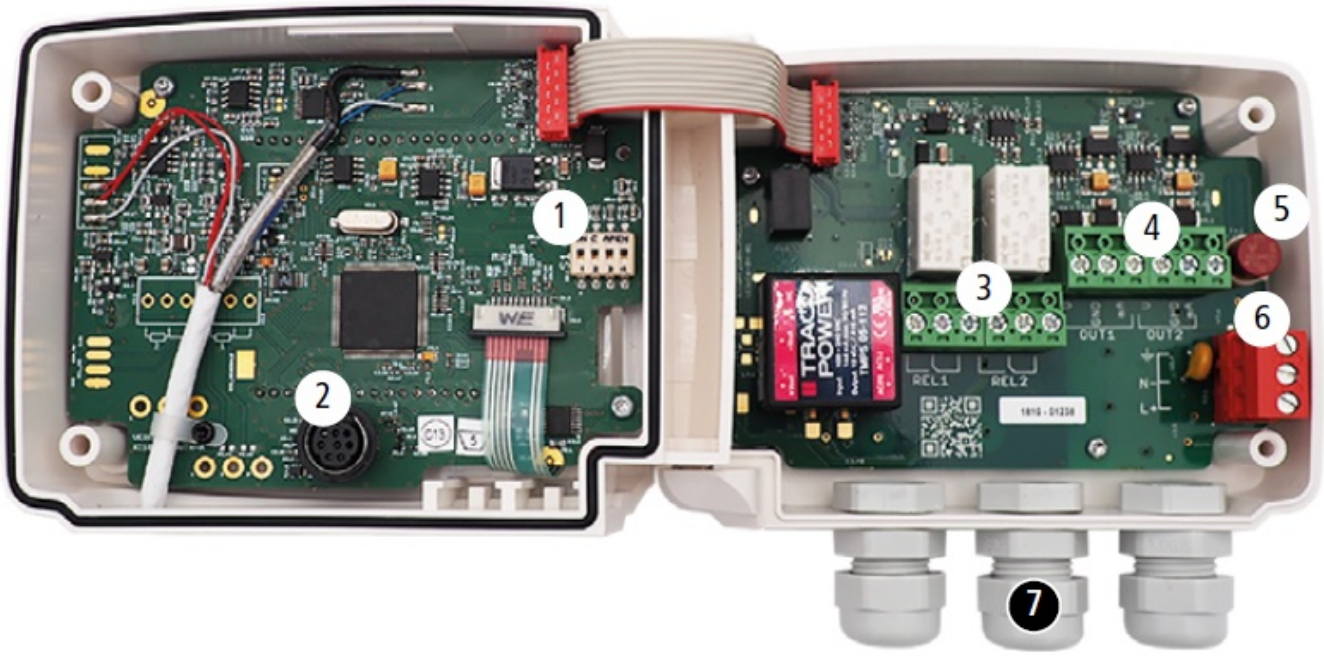


Remote model Ambient model

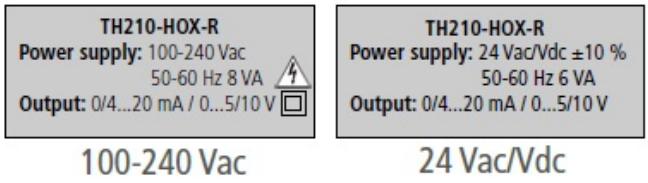
Symbols used

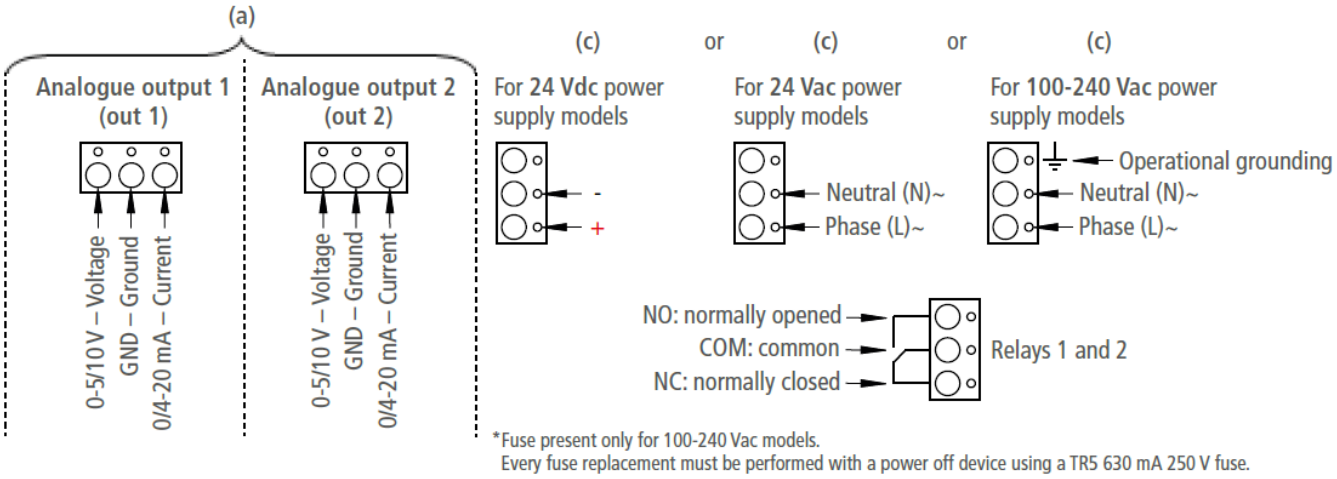
For your safety and in order to avoid any damage to the device, please follow the procedure described in this document and read carefully the notes preceded by the following symbol: The following symbol will also be used in this document, please read carefully the information notes indicated after this symbol:

Connections



Power supply type (b) specified on the label on the side of the transmitter





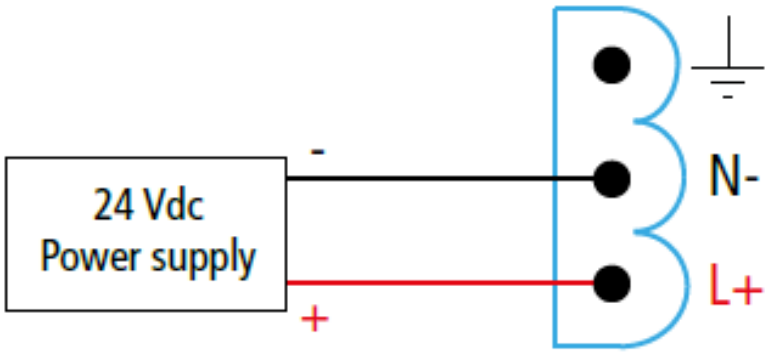
*Fuse present only for 100-240 Vac models.
Every fuse replacement must be performed with a power off device using a TR5 630 mA 250 V fuse.

1. DIP switch (d)
2. LCC-S software connection
3. Relays
4. Analog outputs (a)
5. F3.20* fuse
6. Power supply terminal block (c)
7. Cable glands

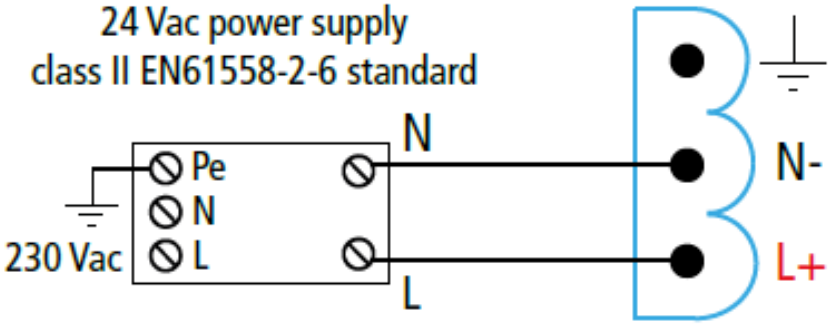
Electrical connections as per NFC15-100 standard

This connection must be made by a formed and qualified technician. To make the connection, the transmitter must not be energized. Before making the connection, you must first check the power supply indicated on the transmitter board (see (b) in “Connections” part). The presence of a switch and a circuit breaker upstream the device is compulsory

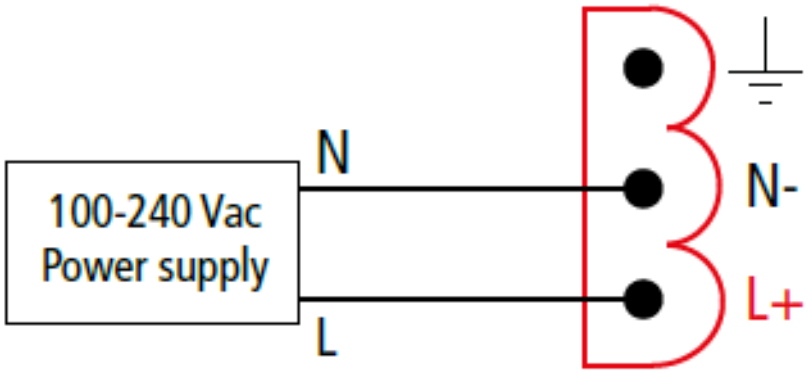
- For transmitters with 24 Vdc power supply:



- For transmitters with 24 Vac power supply:



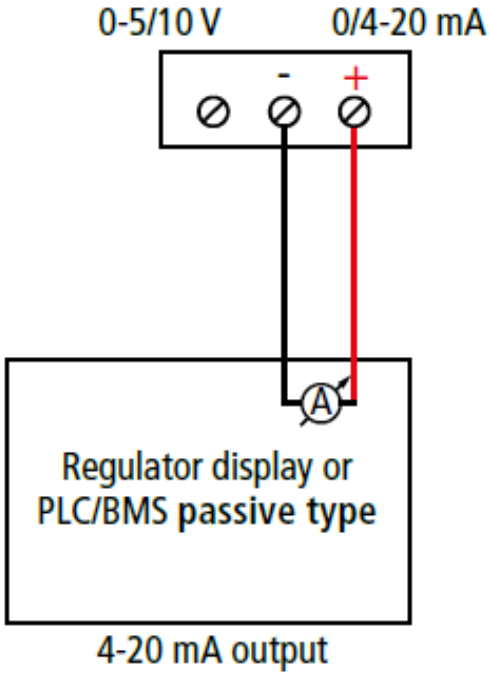
- For transmitters with 100-240 Vac power supply:



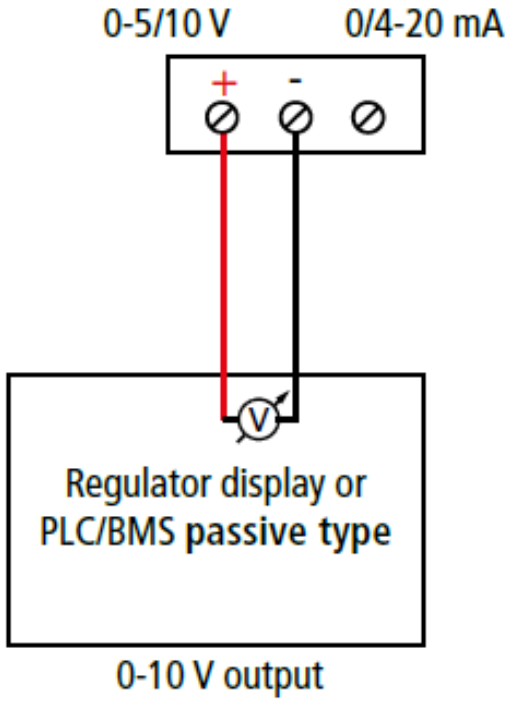
The selection of the output signal in voltage (0-10 V or 0-5 V) or in current (4-20 mA or 0-20 mA) is made via the DIP switch (d) of the electronic board of the transmitter: put the on-of switches as shown in the table below:

Configurations	4-20 mA	0-10 V	0-5 V	0-20 mA
Combinations				

- Connection of the output in current 4-20 mA:



- Connection of output in voltage 0-10 V:



On 100-240 Vac models, if a fuse protection is used for the power line, it is imperative to use delayed-action fuses in order to absorb the surge of current when first turned on the transmitter.

Transmitters configuration

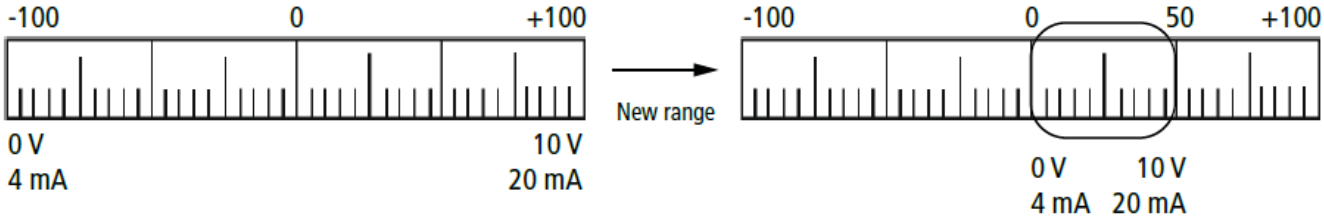
It is possible on the class 210 to configure all the parameters of the transmitter: units, measuring ranges, outputs, channels, calculation functions, etc. via different methods:

- Keypad for models with display: a code-locking system allows to secure the installation (See class 210 transmitters user manual).
- Software (optional) on all models. Simple user-friendly configuration. See LCC-S user manual.

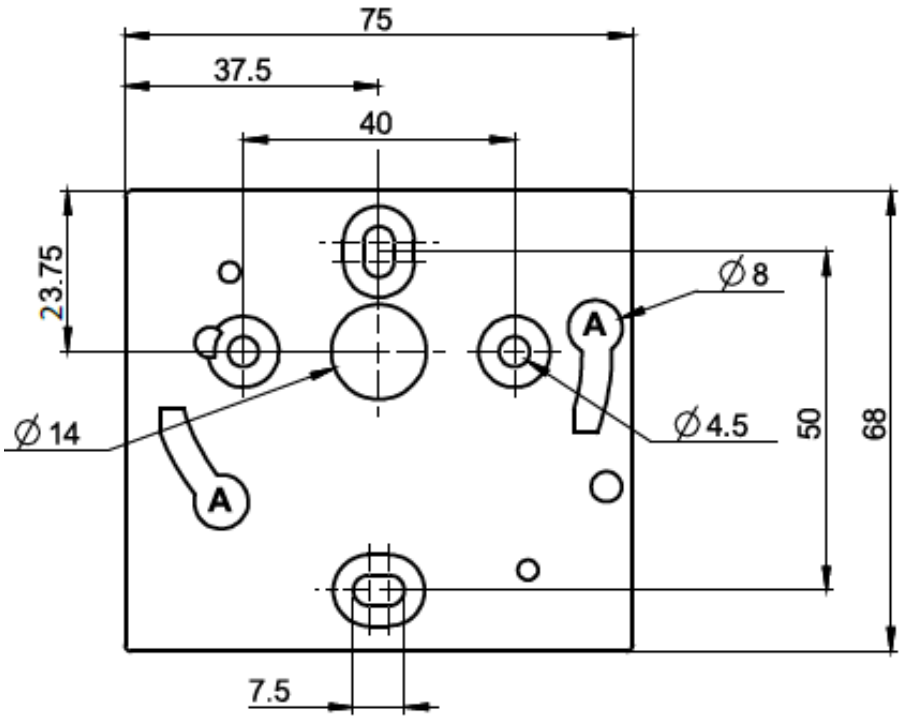
Configurable analogue output:

Range with center zero (-40/0/+40 °C), with offset zero (-30/0/+70 °C) or standard range (0/+100 °C). It is possible to configure your own intermediary ranges

Caution: the minimum difference between the high range and the low range is 20. Configure the range according to your needs: outputs are automatically adjusted to the new measuring range



Mounting



To mount the transmitter, mount the ABS plate on the wall (drilling: 50 Ø 6 mm, screws and pins are supplied). Insert the transmitter on the fixing plate (see A on the drawing beside). Rotate the housing in a clockwise direction until you hear a “click” which confirms that the transmitter is correctly installed.

Accessories

Please refer to the datasheet to get more information about available accessories.

Maintenance

Please avoid any aggressive solvents. Please protect the transmitter and its probes from any cleaning product containing formalin, that may be used for cleaning rooms or ducts.

Precautions for use:

please always use the device in accordance with its intended use and within the parameters described in the technical features in orderm not to compromise the protection ensured by the device.

Documents / Resources

	sauermann TH 210-R Humidity and Temperature Sensor [pdf] User Guide TH 210-R, Humidity and Temperature Sensor
	sauermann TH 210-R Humidity and Temperature Sensor [pdf] User Guide TH 210-R Humidity and Temperature Sensor, TH 210-R, Humidity and Temperature Sensor, Temperature Sensor, Sensor, Temperature, Humidity

References

- Manufacturer of Condensate Pumps and Measuring Instruments | Sauermann group
- Services - Homepage