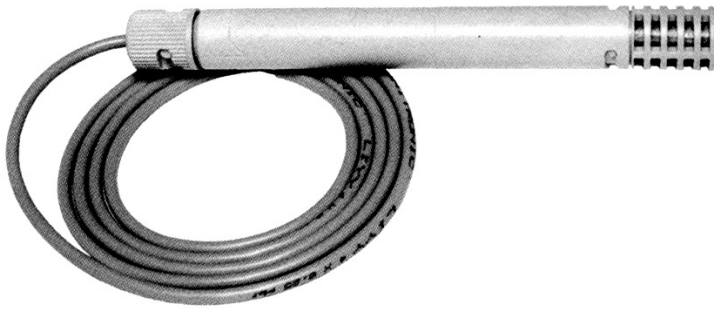




# TRH 20

## RELATIVE HUMIDITY PROBE



### OPERATING INSTRUCTIONS Vr. 01 (ENG) - 09/06 - cod.: ISTR 07211

**TECNOLOGIC S.p.A.**

VIA INDIPENDENZA 56  
27029 VIGEVANO (PV) ITALY

TEL.: +39 0381 69871

FAX: +39 0381 698730

internet : <http://www.tecnologic.it>

e-mail: [info@tecnologic.it](mailto:info@tecnologic.it)

#### FOREWORD



This manual contains the information necessary for the product to be installed correctly and also instructions for its maintenance and use; we therefore recommend that the utmost attention is paid to the following instructions and to save it.

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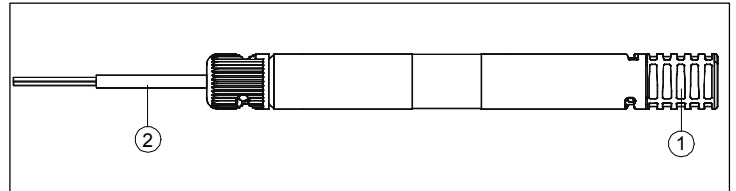
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#### 1 - DESCRIPTION

##### 1.1 - GENERAL DESCRIPTION

TRH 20 is a relative humidity probe of capacitive-digital type with normalized output current signal 4 .. 20 mA by 2 wires.

##### 1.2 - PROBE DESCRIPTION



- 1 - Sensor protective cap
- 2 - Cable 2 x 0,25 mm<sup>2</sup>

#### 2 - INSTALLATION AND USE ADVICES



##### 2.1 - USE ALLOWED

The instrument has been projected as measure transductor.

It has to be reminded that the user has to take care that the electromagnetic rules are being respected also after the instrument installing, eventually using

proper filters.

Whenever a failure or a bad functioning of the instrument may cause dangerous situations or damage to people, things or animals it has to be reminded that the plant has to be equipped with additional electromechanical devices in order to grant the safety.

##### 2.2 - MECHANICAL MOUNTING

The instrument, into cylindrical case, is designed for wall mounting by provided clip.

Install the instrument as far as possible from electromagnetic sources as motors, power relay, relays, electrovalves, etc.

Avoid to place the probe into places where are present corrosive and polluting gases and to do so that the probe are installed in ventilated position.

Should be necessary to remove the protective cap, do not cause any mechanical stress to the sensor and absolutely avoid touching the sensor surface.

##### 2.3 - ELECTRICAL CONNECTIONS

Make electrical connections according to the following diagrams, checking that the power supply is the same as indicated on the instrument.

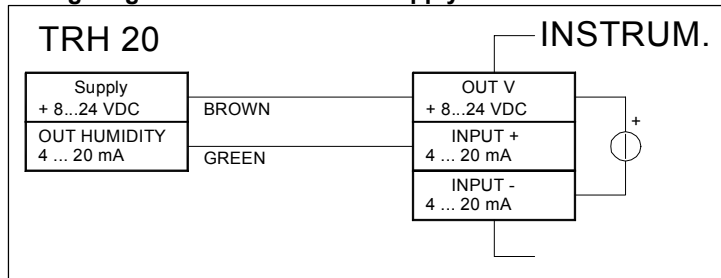
Check then if the measure instrument is equipped with a voltage output 8...24 VDC able to supply at least 20 mA, otherwise connecting the probe with an external voltage supply 8...24 VDC able to supply the necessary current as previously described and connecting it following the wiring diagrams.

It's strongly recommended to use cables with proper insulation, according to the working voltages and temperatures. Furthermore, the cable of the probe has to be kept separate from line voltage wiring in order to avoid electromagnetic noises infiltration.

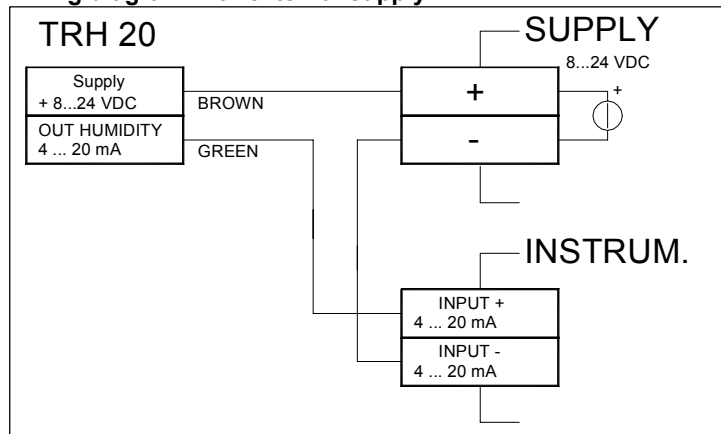
If the input cable of the probe is screened, it advisable to connect it on the ground with one side only.

## 2.4 - ELECTRICAL CONNECTION DRAWING

Wiring diagram with instrument supply :



Wiring diagram with external supply :



## 3 - OPERATING MODE

The instrument to which the probe has to be connected has to be provided with a current input 4 ... 20 mA type.

To have a correct measure indication is necessary to set the lower and upper input limits.

These limits are the corresponding value to 4 mA (lower limit or beginning of scale) and 20 mA (upper limit or ending of scale) which have to be displayed.

See on the operating instructions of the measure instrument the setting mode of these limits.

**The set values for TRH 20 probe are:**

Lower limit (4 mA) : 0

Upper limit (20 mA) : 100

## 4 - PROBLEMS, MAINTENANCE AND WARRANTY

### 4.1 - MEASURE ERRORS

Reading errors can occur if settling time is too short, or be caused by steam, sprayed water, air drafts, direct exposure to sunlight, or presence of condensate on the sensor.

To obtain accurate measurements the sensor should be left to settle in the existing atmosphere for some time.

To reduced the possibility of condensation on the humidity sensor place the probe in ventilated position and where there is not a quick and elevation variation of temperature (from cold to warm)

### 4.2 - CLEANING

It's raccomanded to clean the box only with a cloth wetted with water or with a detergent neither abrasive nor containing solvents. Should be necessary to remove the protective cap, do not cause any mechanical stress to the sensor and absolutely avoid touching the sensor surface.

## 4.3 - WARRANTY AND REPAIRS

The instrument is under warranty against construction vices or defected material, noticed within 12 months from delivery date.

The warranty is limited to the repairs or to the substitution of the instrument.

The eventual violation of the instrument or the wrong use and installation of the product means the automatic decay of the warranty.

In case of defected instrument, noticed in warranty period or out of warranty, do contact our sales department to obtain the shipment authorisation.

The defected product must be shipped to TECNOLOGIC with the detailed description of the failures found and without any fees or charge for Tecnologic, safe different agreements.

## 5 - TECHNICAL DATA

### 5.1 - ELECTRICAL DATA

Power supply: 8 ... 24 VDC

Power consumption: 20 mA MAX

Humidity sensor type: Capacitive-Digital

Max. External load : [(V alim. - 8 V) / 0.02 A] +/- 50 Ω

Output signal : 4...20 mA (0 ...100 %RH)

Protection class against electric shock: Class III

### 5.2 - MECHANICAL DATA

Housing: plastic

Dimensions: L 185 mm, Ø 20 mm

Weight: 80 g approx.

Mounting: Wall mounting

Connections: Non-detachable flexible PVC cable 2 x 0,25 mm<sup>2</sup>, L 1,5 m

Box protection : IP 65

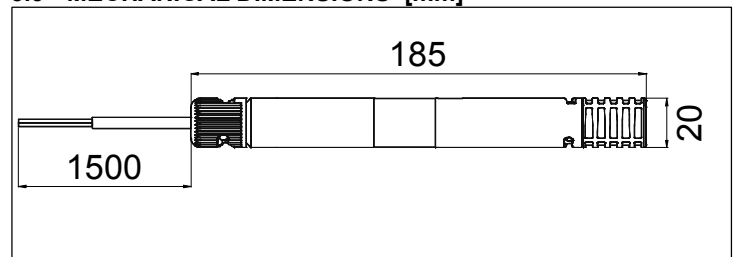
Air filter: wire mesh

Operating temperature : -10 ... 70 °C

Operating humidity: 0 ... 100 RH%

Storage temperature: -10 ... 70 °C

### 5.3 - MECHANICAL DIMENSIONS [mm]



### 5.4 - FUNCTIONAL DATA

Measurement range: 5 ... 95 %RH (4,8 ... 19,2 mA)

Overall accuracy : +/- 3 % (20...80 %RH) ; +/- 5 % (5..20 , 80..95 %RH) without pollutant presence, at 23 °C and with an air speed of 3 m/s

Response time : 30 sec. (at 23 °C and with an air speed of 3 m/s)

Compliance: ECC directive EMC 89/336 (EN 61326), ECC directive LV 73/23 and 93/68 (Instrument operating under 50 VDC and 75 VAC)