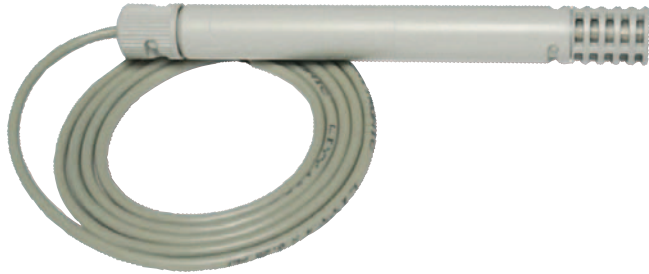




# TRH22

## RELATIVE HUMIDITY AND TEMPERATURE PROBE



### OPERATING INSTRUCTIONS

Vr 01 (ENG) - 19/07 - cod.: ISTR-MTRH22-ENG01

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#### PREFACE

**!** 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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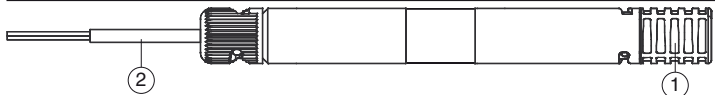
**!** Whenever a failure or a malfunction of the device may cause dangerous situations for persons, thing or animals, please remember that the plant has to be equipped with additional electromechanical devices which will guarantee safety.

## 1. DESCRIPTION

### 1.1 General Description

The TRH 22 is a relative humidity probe (of capacitive-digital type) and temperature (of thermistor-digital type) with normalized current output signals 4 ÷ 20 mA with 4 wires (2 + 2).

### 1.2 Probe description



- 1 Sensor protective cap;
- 2 Cable 4 x 0.25 mm<sup>2</sup>.

## 2. INSTALLATION AND USAGE WARNINGS

**!** The TRH22 probe **DOES NOT WORK** when only the temperature sensor is connected and powered. To work properly both the probe sensors, relative humidity and temperature, must be connected and powered.

### 2.1 Admitted use

**!** The instrument has been projected as measure transducer. It must 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.

### 2.2 Mechanical mounting

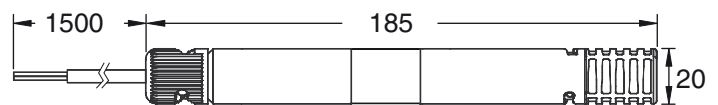
The instrument, into cylindrical case, is designed for wall mounting by provided clip.

- Install the instrument as far as possible from electromagnetic sources as motors, power relay, relays, electrovalves, etc..
- The signal cables of the device must be routed separately from the power cables.
- Avoid placing the probe in places where strong corrosive and polluting gases can be present and make sure that the probe is in an 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 Dimensions [mm]

#### 2.3.1 Mechanical dimensions



### 2.4 Electrical connections

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

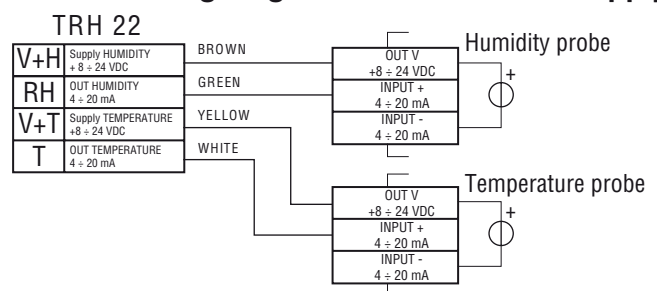
The probe can be powered by the instruments to which is connected or by an external power supply.

Check then if the measure instrument is equipped with a voltage output 8 ÷ 24 VDC able to supply at least 20 mA, otherwise connect the probe to a 8 ÷ 24 VDC external power supply able to supply 40 mA and connecting it as described following the wiring diagrams.

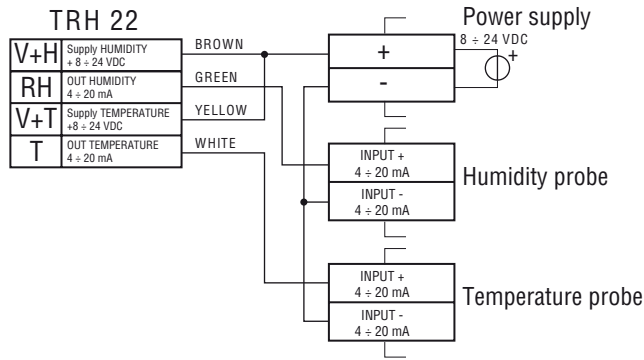
It is strongly recommended that cables with proper insulation, according to the working voltages and temperatures, be used. Furthermore, the input cable of the probes has to be kept separate from line voltage wiring. If some cables used for the wiring should be shielded, it is recommended to **connect the shield to ground at one side only.**

### 2.5 Electrical wiring diagram

#### 2.5.1 Wiring diagram with instrument supply



## 2.5.2 Wiring diagram with external supply



## 3. OPERATING MODE

The instrument to which the probe is to be connected must have a normalized current input of 4 ÷ 20 mA type.

To obtain the correct measure indication it is necessary to set the lower and upper input limits.

These limits are the values that are to be displayed when 4 mA (lower limit or beginning of scale) and 20 mA (upper limit or ending of scale) are present on the input circuit.

Consult the instrument's instruction manual to correctly set these limits.

The values that are to be set for the TRH 22 probes are:

- Lower humidity measurement limit (4 mA):** 0;
- Upper humidity measurement limit (20 mA):** 100;
- Lower temp. measurement limit (4 mA):** -30 (°C) or -22 (°F);
- Upper temp. measurement limit (20 mA):** 70 (°C) or 158 (°F).

## 4. PROBLEMS AND MAINTENANCE

### 4.1 Measurement 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 condensation on the sensor.

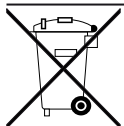
To obtain accurate measurements the sensor should be left to settle in the existing atmosphere for some time.

In order to avoid the condensation possibility on the humidity sensor, make sure that the probe is placed in a ventilated place and that it is not subject to sudden and high temperature variations (from cold to warm).

### 4.2 Cleaning

We recommend cleaning of the instrument only with a slightly wet cloth using water and not abrasive cleaners or solvents. Should be necessary to remove the protective cap, avoid touching the humidity sensor surface and mechanically stressing it.

### 4.3 Disposal



The appliance (or the product) must be disposed of separately in compliance with the local standards in force on waste disposal.

## 5. WARRANTY AND REPAIRS

The instrument is under warranty against manufacturing flaws or faulty material, that are found within 18 months from delivery date. The warranty is limited to repairs or to the replacement of the instrument.

The eventual opening of the housing, the violation of the instrument or the improper use and installation of the product will

bring about the immediate withdrawal of the warranty effects. In the event of a faulty instrument, either within the period of warranty, or further to its expiry, please contact our sales department to obtain authorisation for sending the instrument to our company. The faulty product must be shipped to Ascon Tecnologic with a detailed description of the faults found, without any fees or charge for Ascon Tecnologic, except in the event of alternative agreements.

## 6. TECHNICAL DATA

### 6.1 Electrical characteristics

**Power supply:** 8 ÷ 24 VDC;

**Power consumption:** 20 mA + 20 mA max.;

**Humidity sensor type:** Capacitive-Digital;

**Temperature sensor type:** Thermistor-Digital;

**Measurement circuit impedance:**

[(V supply. -8 V)/0.02 A] ±50Ω;

**Humidity output signal:** 4 ÷ 20 mA (0 ÷ 100% RH);

**Temperature output signal:** 4 ÷ 20 mA (-30 ÷ 70°C/-22 ÷ 158°F);

**Protection class against electric shock:** Class III.

### 6.2 Mechanical data

**Housing:** Self-extinguishing plastic;

**Dimensions:** L 185 mm, Ø 20 mm;

**Weight:** 80 g approx.;

**Mounting:** Wall mounting ;

**Connections:** Non-detachable flexible PVC cable

4 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.

### 6.3 Functional features

**Humidity measurement range:** 5 ÷ 95% RH (4.8 ÷ 19.2 mA);

**Temperature measurement range:** -10 ÷ 70°C/14 ÷ 158°F (7.2 ÷ 20 mA);

**Overall humidity accuracy:** ±3% (20 ÷ 80 %RH);

±5% (5 ÷ 20 and 80 ÷ 95% RH) with no pollutant presence, at 23°C and with an air speed of 3 m/s;

**Overall temperature accuracy:** ±1.5°C;

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

**Compliance:** ECC directive EMC 2004/108/CE (EN 61326), ECC directive LV 2006/95/CE (Instrument operating under 50 VAC and 75 VDC).