
Hygro-Thermo Transmitter

1.1005.60.752



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1 Model

| Order- No. | Measuring Range | Output | Connection |
|-------------------|--|------------------------------|--------------------|
| 1.1005.60.752 | rel. humidity:10...100% temperature : acc. to YSI | poti 0..5000Ω acc. to YSI | 5 m cable , 6 pole |

2 Application

The water vapour in the air is called humidity. As, in general, air is only partially saturated with water vapour, it is of great interest to determine the relative degree of saturation which is given in percent of maximum humidity. For many institutions such as hospitals, computer rooms, meteorological measuring stations, museums, warehouses, greenhouses, systems for black ice warning etc., the exact knowledge and constant monitoring of the relative humidity is of great importance. The hygro-transmitter, employed for such measurements, measures the relative humidity, displays the measured value and simultaneously provides an electrical signal.

3 Mode of Operation

The temperature is measured by a special temperature sensor from the company YSI. This sensor is situated in a stainless steel housing, fixed in the immersion stem.

Hair (H) measuring elements are used to measure humidity. The measuring elements consists of a number of hairs which change in length when the humidity changes. This change in length is transferred to the axis of a potentiometer. The slider and the scale pointer are also mounted to the axis of the potentiometer. The housing and the stem are made of stainless steel (V2A). On the back of the case there is a 5 m long cable.

4 Installation

4.1 Mechanical Mounting:

Mount the hygro-transmitter in such a way that it is protected from jarring, dust, chemical impurities and splashing water. You can mount it with the aid of the R 3/4" nuts directly to the wall of the room where the measurements are to be taken. Please make sure that the transmitter is in the correct position for use - that immersion stem must be vertical and pointing downwards. Should there be heavily polluted air or wind velocities above about 3 m/s, then you will have to use a wind protection device (optionally available) in order to guarantee accurate measurements. This device is simply slipped over the immersion stem of the Hygro-transmitter and turned such that the closed side is facing the air stream.

When using the instrument outdoor, for example with weather stations, systems for black ice warning etc., it should be equipped with a gauze protection (optionally available) against dust. In addition, the hygro-thermo transmitter should have a weather and thermal radiation shield (optionally available), avoiding an effect on the measuring values by direct precipitation, and solar radiation.

4.2 Electrical Mounting:

The electrical connection is carried out according to the connecting diagram.

5 Maintenance

In the course of time, H measuring elements dry out resulting incorrect measurements. This process is called degeneration. It leads to the display of values which are too high. The degree of deviation is dependent on the extend and the duration of the drying.

Degeneration can be reversed by exposing the measuring element to saturated air. This process is called regeneration

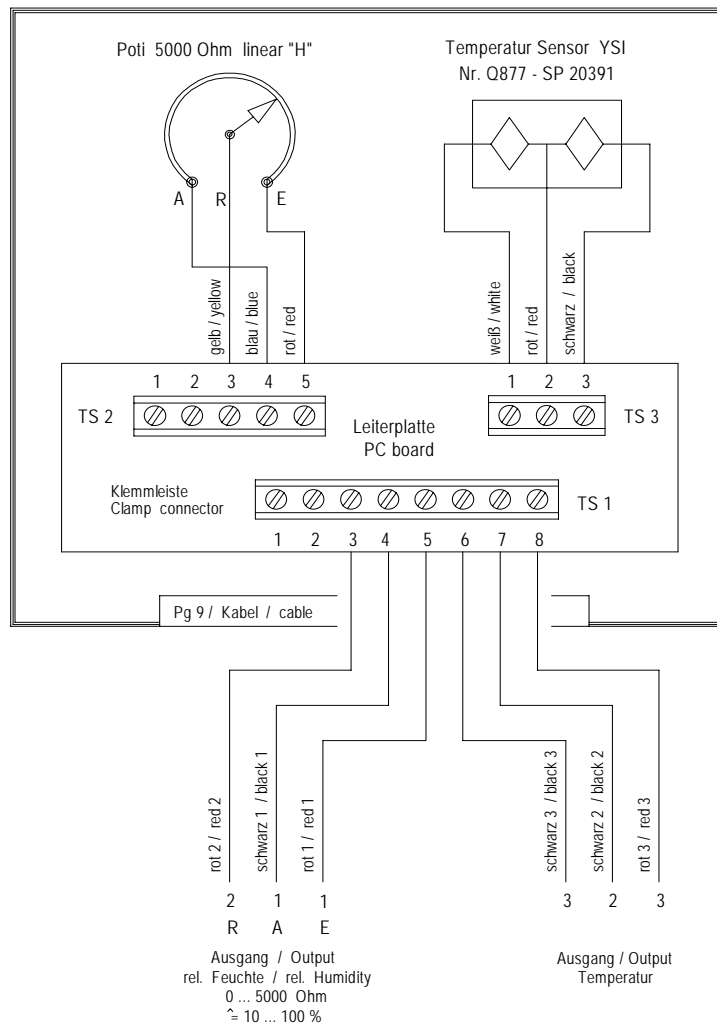
Remark:

Hygro-transmitters used in air with a humidity of 80% do not have to be regenerated.

In the interests of measuring accuracy, it is advisable to regenerate the H measuring element at regular intervals. The easiest way to do this is to wrap the immersion stem of the Hygro-transmitter for about 60 minutes in a damp cloth which has been dipped in lukewarm water. Normally the indicator will settle at 95 - 97 % rel. humidity. If there are significant deviations from this value, then correct this by means of the setting screw marked in red at the lower end of the stem. The Hygro-transmitter which is now correctly set at 97 % rel. humidity will also indicate all other humidity values correctly, provided that the characteristic hygrometric features of the hair have not changed as a result of detrimental influences (heat, aggressive vapours, mechanical strains etc.).

The hygro thermo transmitter should be checked regularly. If the instrument is dirty, it has to be cleaned.

6 Connecting Diagram



7 Technical Data

Rel. humidity

| | |
|---------------------|-------------------------|
| Measuring range | 10 ... 100 rel. h. |
| Measuring element | Hair |
| Accuracy | ± 3% rel. h. |
| Graduation of Scale | 1% rel. h. (not linear) |
| Electrical output | 0 ... 5000 Ω, linear |
| Load | 1,5 VA |
| Slider current | Max. 100 mA |

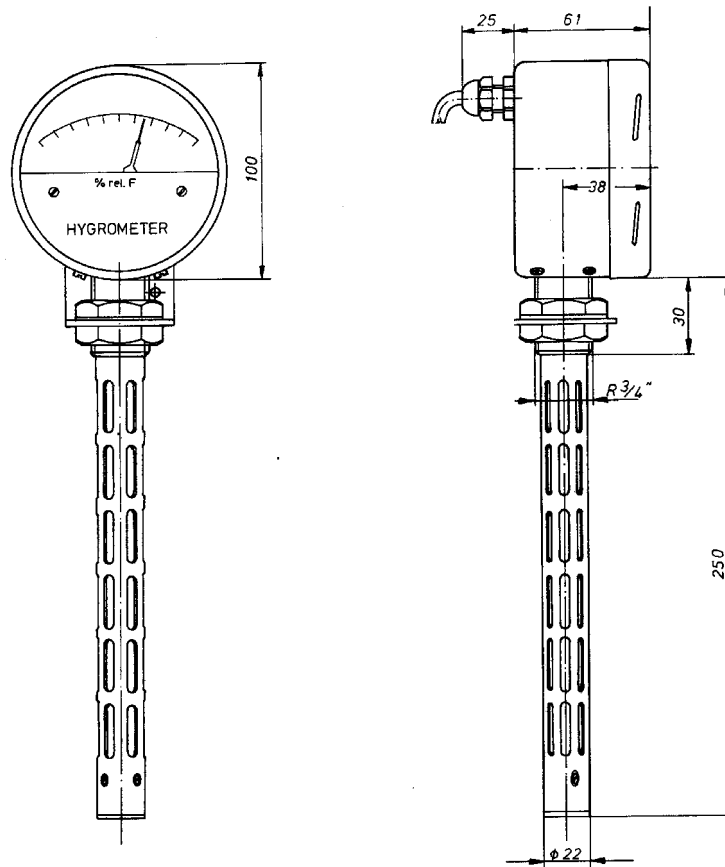
Temperature

| | |
|----------------|--------------------------------------|
| Sensor element | Thermistor Type YSI Nr. Q877-SP20391 |
| Specification | Acc. to YSI- company |

General

| | |
|------------|---|
| Cable | 5 m long; 3pairs; company: Belden type 9513 |
| Protection | IP 65 (scale housing) |
| Weight | 0,7 kg |

8 Dimensional Drawing



9 Accessories (optional)

| | | |
|--------------------------------------|---------------|--|
| Weather and Thermal radiation shield | 1.1025.51.000 | Protecting housing for hygro-thermo transmitter and hygro transmitter with outdoor stations. Effects on measuring values by precipitation and solar radiation can extensively be avoided. |
| Gauze Protection | 500278 | Protects the humidity measuring element against coarse dust |
| Wind shield | 1.0509.85.006 | Protects the humidity measuring element against coarse dust and strong air flow. |

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