

# Hygro-Thermo Transmitter

Instruction for use 1.1005.60.751



## 1. General information

The water vapor in the air is called humidity. As, in general, air is only partially saturated with water vapor, 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 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.

The Hygro-thermo-transmitter is similar to the Hygro-transmitter described above but is additionally equipped with a temperature sensor YSI ( YSI, Nr. 052-44018-2-1/2 Sp. 052-13 ) in the immersion stem.



## 2. Construction of the Instrument

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 3 m long cable.

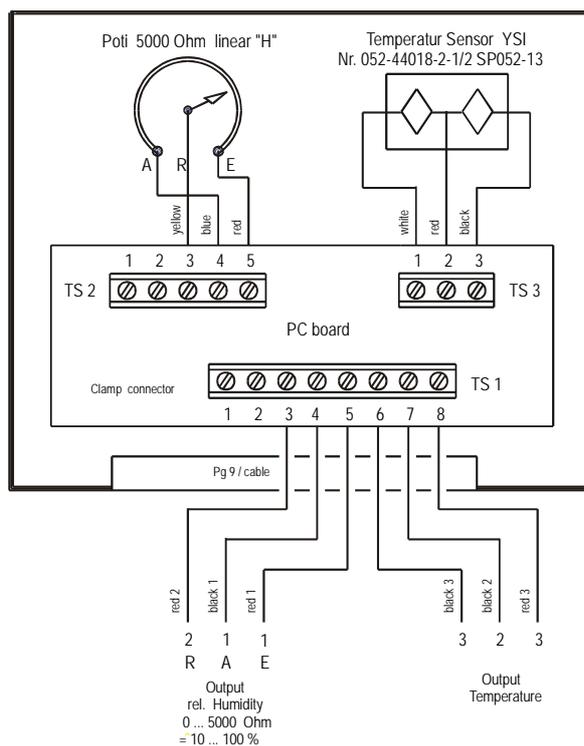
## 4. Technical Data

<b>Humidity</b>	Measuring range	: 10...100% rel. F
	Measuring element	: Hair
	Accuracy	: $\pm 3$ % rel. F
	Graduation	: 1% rel. F. (unlinear)
	Scale length	: 94 mm
	Electr. output	: 0 ... 5000 $\Omega$ , linear
	Load	: 1,5 VA
	Slider current	: max. 100 mA
<b>Temperature</b>	Sensor element	: Typ YSI Nr. 052-44018-2-1/2 Sp. 052-13
	Spezifikation	: acc. to YSI
<b>General</b>	Cable	: 3 pairs , Belden Typ 9513 ; 5 m long
	Protection	: IP 65 (housing)
	Weight	: 0,45 kg

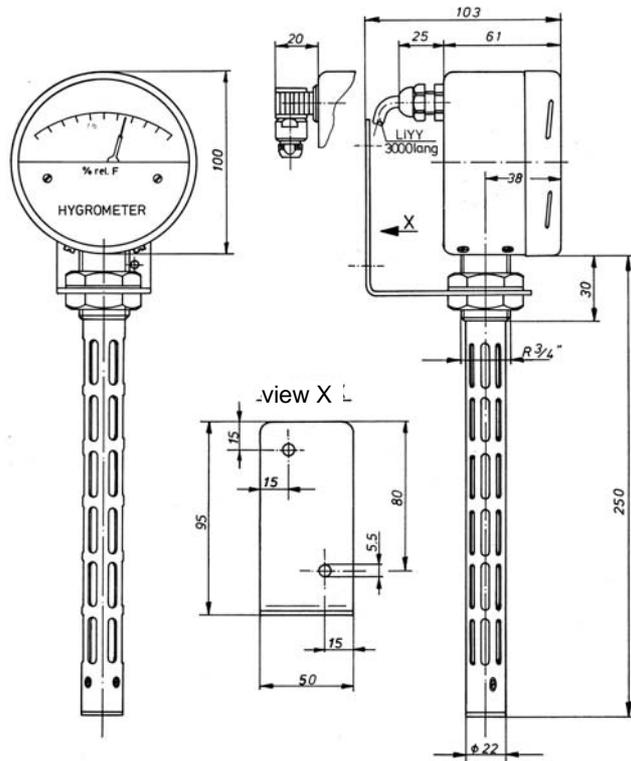
## 5. Mounting

Mount the Hygro-transmitter in such a way that it is protected from jarring, dust, chemical impurities and splashing water. You can either 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 or you can use the enclosed mounting angle to screw it to a plane surface. 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 order-no. **1.0509.85.006** 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.

## 6. Connecting diagram



## 8. Dimension



## 9. Maintenance

In the course of time, H measuring elements dry out resulting incorrect measurement values. 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. 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 vapors, mechanical strains etc.).

If the hygro-transmitter is used with a wind protector, then it will be necessary to check this regularly. If it is dirty, remove it from the stem of the instrument and clean it.



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