



SHN THERMO HYGROMETRE

Air temperature and humidity measurement sensor



PRODUCT DESCRIPTION

The SHN transducer is a multiple sensor containing the transducers for measuring air temperature and humidity. The instrument consists of a "PT100 Cl.A" thermistor according to the DIN 43760 standards to measure air temperature. The thermistor is crossed by a constant current, so the change in temperature is brought back to a voltage change at its ends. A capacitive type of sensor to measure relative humidity consists of a membrane of hygroscopic material that forms the dielectric of a capacitor so that the water molecules in the air are absorbed by the dielectric, thus causing a change in the capacitor's capacity, due to the humidity, to which a change in the oscillation frequency of an electrical circuit connected to a sensor corresponds, which in turn transforms it into a change in direct voltage. The temperature sensor is immersed in a convective current produced by natural ventilation inside an anti-radiation shield. The shield is made up of several concentric and overlapping metal discs painted white, whose particular shape plays the two-fold role of fostering natural ventilation of the sensor and of protecting it from solar radiation (direct and reflected) and from the rain. The paintwork of the discs ensures high reflectivity and low heat retention.

OPERATION

It is a multiple sensor containing the transducers for measuring air temperature and humidity. The instrument consists of a "PT100 Cl.A" thermistor according to the DIN 43760 standards to measure air temperature and a capacitive type of sensor to measure the relative humidity, consisting of a membrane of hygroscopic material that forms the dielectric of a capacitor so that the water molecules in the air are absorbed by the dielectric, thus causing a change in the capacitor's capacity, due to the humidity, to which a change in the oscillation frequency of an electrical circuit connected to a sensor corresponds, which in turn transforms it into a change in direct voltage. The probe produces a signal/noise ratio.

MAIN FEATURES

Protective devices:

the sensor is equipped with fast semiconductor electronic devices for protection from electric discharges.

Easy maintenance:

the benefits that our thermohygrometric sensor offers are not limited to precision, but also include simple and quick maintenance due to the engineering of the sensor that simplifies the phases. The only preventive activity consists of cleaning the sensor screen (once a year) in order to ensure its full functioning.

Sturdy and reliable construction:

lastly makes it an instrument with a long lifetime, which safeguards the customer's investment. The instrument does not drift due to aging and requires no periodic calibrations.

INSTALLATION

It is advisable to install the sensor at a distance from the soil of between 1.5 and 2.5 metres so that the measurement can be represented. The instrument does not drift due to aging and requires no periodic calibrations. It is advisable to clean the screen to ensure its full operation at least once a year. The sensor is equipped with fast semiconductor electronic devices for protection from electric discharges. The sensor perfectly meets the WMO recommendations in terms of principle of measurement, structure and performance.

COMPONENTS THAT CAN BE ADDED OR BE BUILT INTO THE PRODUCT

none

TECHNICAL SPECIFICATIONS

CERTIFICATIONS	REFERENCE STANDARD
TEMPERATURE MEASUREMENT	
Sensor type	PT100
Range of measurement	.-30°C...+60°C
Precision	±0,2°C
Electrical output	0-1V
Operative temperature	.-40°C...+80°C
HUMIDITY MEASUREMENT	
Sensor type	Capacitive
Range of measurement	0...100%
Precision	±3% @ 10%<UR<90%, ±5% @ UR<10% e >90%
Electrical output	0-1V
Operative temperature	.-40°C...+80°C

CERTIFICATIONS AND PROTOCOLS

CERTIFICATIONS	REFERENCE STANDARD
Electromagnetic Compatibility	CEI EN 61326-1
EMC (Part 1)	EN 301 489-1 V.1.8.1
EMC (Part 3)	EN 301 489-3 V.1.4.1