

Datasheet

SHTM

Standalone high temperature humidity transmitter

The SHTM high temperature humidity transmitter is primarily developed for different types of ovens & furnaces (tunnel, vertical and serpentine) and to be able to work under the high temperatures and aggressive media present in these types of ovens/furnaces. The measurement is done in-situ in the oven/furnace, which is an advantage over other systems, where a gas sample needs to be extracted and analyzed, thereby causing disturbances in the oven/furnace.



The figure shows the SHTM product with a 300 mm sensor head connected via a 2500 mm high temperature cable to the electronics unit.



Features

- 0-100 % Humidity measurement range
- Operating temperature between 100 and 325°C
- Adjustable temperature range setting between 150 and 275°C by menu
- Sensor head length between 300 mm and 2500 mm
- Operational lifetime > 30.000 hours
- Excellent long time output signal stability
- Factory calibrated
- Calibration on-site by menu
- RoHS/Reach conform

Applications (examples, not limited to)

- Control of the steaming process in bakery ovens
 - Control of cooking processes in ovens
- Process monitoring in drying processes for instance in cereal, coffee or milk powder production
 - Control of burning process in ceramics and china manufacturing
- Measurement of absolute humidity for critical processes in the chemical industry
- Process monitoring in drying processes for instance in industrial glass manufacturing
 - Process monitoring in industrial sintering processes of metals
 - Power industry applications
 - Semiconductor equipment and process control

Product description

The new generation (SHTM) has more advantages over the old generation (FCX-OHS). The working temperature can be adjusted on-site and the sensor can be calibrated on-site. All done by an easy-to-use menu.

The standard configuration of the SHTM product has 24 VDC & 115-230 VAC power supply, 0-100% volumetric humidity reading in a display and 4-20 mA output signal.

The product name is SHTM-XXXX-CH, where the sensor head length (XXXX) can be chosen between 300 and 2500 mm in steps of 100 mm. By ordering, please specify the required length of the sensor head body. The specified length is the length of the stainless steel body. The total length of the sensor is the specified length + 85 mm. The 85 mm includes front sensor head termination and back metal cable gland. The high temperature cable between the sensor head and the electronics is 2500 mm. Other cable lengths are possible on request.

The sensor head calibration temperature is between 150 and 275°C and the operating temperature can be adjusted using the easy-to-use menu for the evaluation unit.

The maximum operating temperature of the sensor head (i.e. the front part of the sensor tube) is 325°C. The calibration temperature setting includes a tolerance of $\pm 50^{\circ}\text{C}$, in which the sensor head performance is in accordance with the specification values.

The sensor head output can be calibrated /adjusted in an easy-to-use menu. The output curve is calibrated/adjusted in either the full-scale or the zero point, or both. We recommend always to do a check in the application and adjust accordingly.

Technical data SHTM-XXXX-CH

We strongly recommend to purchase the SHTM together with a mounting flange.

The flange will mechanically support and stabilize the sensor head and it has a 2° tilt so that condensing water cannot flow back into the sensor head

Sensor head

Length stainless steel tube	specified by the customer (300-2500 mm) Standard lengths: 300, 600 and 800 mm
Total length of sensor head	Length of stainless steel tube + 85 mm
Sensor head diameter	25 mm
Cable length	2500 mm
Weight of sensor head	2.0 kg (stainless steel tube length = 800 mm)
Nominal temperature range	150-275 °C (adjustable) Factory calibration temperature = 200°C
Humidity measuring range	0-100 % H ₂ O
Measurement accuracy	~ < +/-3 %

Electronics unit

Supply voltage	24 VDC ± 50%, 115-230 VAC ±20%
Power consumption	< 0.5 A
Output signal	4...20 mA
Maximum load	500 Ohm
Ambient temperature	5 - 45 °C
Enclosure & Enclosure rating	Aluminum IP 65
Dimensions SHTM-XXXX-CH	260 x 160 x 90 mm
Weight SHTM-XXXX-CH	1.6 kg

Flange (to be ordered separately)

Material	Stainless steel
Dimension ground plate	150 x 120 x 3 mm
Guide tube	1" (34 x 3,7 mm);
Length guide tube	350 mm
Inclination guide tube	1 - 2°
Weight	1.2 kg
Plug & Cap nut	1" stainless steel (both)
Seal	VITON® 25x5 mm

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