

# STH 102 – TEMPERATURE AND RELATIVE HUMIDITY SENSOR TO THE INTERIOR WITH RS 485 OUTPUT (MODBUS)

H01.02en

## DESCRIPTION AND APPLICATION

The sensor of temperature and relative humidity - STH 102 is designed to measure the temperature and relative humidity of the air in spaces protected against water. This combined sensor consists of a plastic ribbing head, where a printed circuit board with the individual sensors and a converter is placed to establish a communication via the RS 485 bus. The temperature and relative humidity are measured by a common internal sensor whose signal is processed in a microprocessor and is converted to an output signal of MODBUS RTU. The sensors meet ingress protection IP 30 according to EN 60529, as amended. Suitable design and high-quality material ensure that the sensors do not feel disturbing even in the interiors with high aesthetic requirements. The installation is recommended on an inner wall at the height of 1.5 m, in areas with moving persons, not exposed to direct sunlight and not influenced by heat from walls, heat sources or lighting. The sensor of temperature and relative humidity - STH 102 is designed to be operated in a chemically non-aggressive environment; the use must be chosen with regard to the temperature and chemical resistance of the sensor head and of the individual sensors.

### The operating conditions to establish the correct function are:

- ambient temperature in the vicinity of the sensor: - 40 to 80 °C
- relative ambient humidity: 0 to 95% (non-condensing humidity)
- atmospheric pressure: 87 to 106 kPa

## DECLARATION, CERTIFICATES, CALIBRATION

Manufacturer provides **EU Declaration of Conformity**.

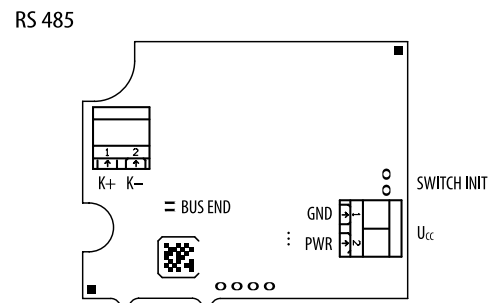
**Calibration** – The final metrological inspection – comparison with standards or working instruments – is carried out for all the products. Continuity of the standards and working measuring instruments is ensured within the meaning of the Section 5 of Act no.505/1990 on metrology. The manufacturer offers a possibility to supply the sensors calibrated in SENSIT s.r.o.'s laboratory (according to requirements of the EN ISO/IEC 17025 standard) or in an Accredited laboratory.

## SPECIFICATIONS

Sensor type	STH 102
Temperature measurement range	-40 to 80 °C
Temperature measurement accuracy	± 0.5 °C in the range from 0 to 65 °C ± 0.7 °C in the range from 65 to 80 °C ± 1.1 °C in the range from -40 to 0 °C
Relative humidity measurement range	0 to 95 %
Relative humidity measurement accuracy	± 3 % in the range from 10 to 90 % ± 4.5 % in the range from 0 to 10 % and 90 to 95 %
Output signal	RS 485 / MODBUS RTU
Galvanically separated	no, possible on request
Supply voltage U	15 to 30 V DC
Rated supply voltage Un	24 VDC
Consumption	maximum: 500 mW typical: 300 mW
Ingress protection	IP 30 in accordance with EN 60529, as amended
Dimension of the head	71.9 x 59 x 27 mm
Material of the head	LEXAN
Weight min	35 g
Recommended wire cross section	0.14 to 1 mm <sup>2</sup>



## WIRING DIAGRAM



GND, PWR – U<sub>cc</sub> supply voltage  
K+/K- – communication line  
BUS END – RS 485 termination

## DIMENSIONAL DRAFT

