

# STHPV 102 – TEMPERATURE, RELATIVE HUMIDITY, ATM. PRESSURE AND VOC SENSOR TO THE INTERIOR WITH RS 485 (MODBUS) OUTPUT

H05.01en

## DESCRIPTION AND APPLICATION

Temperature, relative humidity, atmospheric pressure and VOC interior sensor with RS 485 (MODBUS) output - STHPV 102 is designed to measure air temperature, air relative humidity, atmospheric pressure and concentration of VOC (volatile organic compounds) in the air in spaces protected against water. This combined interior sensor STHPV 102 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. Temperature, relative humidity, atmospheric pressure and VOC are measured by a common internal sensing element whose signal is processed in a microprocessor and is converted to an output signal of MODBUS RTU.

Combined interior sensor STHPV 102 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. Combined interior sensor - STHPV 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 around the sensor: - 30 to 70 °C, for short period - 40 to 80 °C
- relative ambient humidity: 0 to 95% (non-condensing humidity)
- atmospheric pressure: 87 to 110 kPa

## DECLARATION, CERTIFICATES, CALIBRATION

Manufacturer provides **EU Declaration of Conformity**.

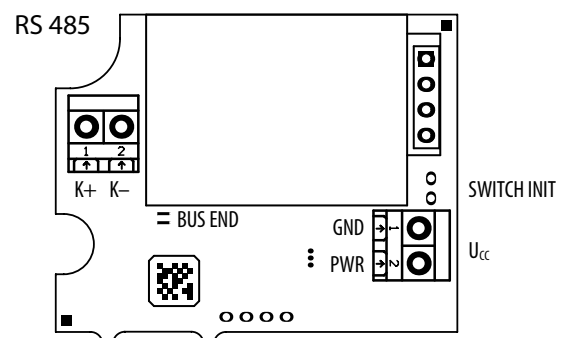
**Calibration** – The final metrological inspection – comparison with standards or working instruments – is carried out for all the products. Continuity of the standards and working measuring instruments is ensured within the meaning of the Section 5 of Act no.505/1990 on metrology. The manufacturer 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, as amended) or in an Accredited laboratory.

## SPECIFICATIONS

Sensor type	STHPV 102
Temperature measurement range *	- 30 to 70 °C - 40 to 80 °C short-term
Temperature measurement accuracy *	± 0.5 °C at 25 °C ± 1.0 in range 0 to 65 °C
Relative humidity measurement range *	0 to 95 %
Relative humidity measurement accuracy *	± 3 % in range 20 to 80 % ± 4.5 % in range 0 to 19 % and 81 to 95 %
VOC measurement range (IAQ index) *	0 to 500
VOC measurement accuracy *	± 15 %
Atmospheric pressure measuring range *	300 to 1100 hPa



## WIRING DIAGRAM



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

## OTHER PARAMETERS

Atm. pressure measurement accuracy* (in temp. range 0 to 65 °C in range 300 - 1100 hPa)	absolute deviation: ± 0.6 hPa long-term temperature stability: ± 1.0 hPa
Atm. pressure measurement accuracy* (in temp. range 25 to 40 °C in range 700 - 1100 hPa)	absolute deviation: ± 0.12 hPa
Output signal	RS 485 / MODBUS
Supply voltage U	15 to 30 VDC
Rated supply voltage Un	24 VDC
Consumption	maximum: 500 mW typical: 250 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>

\*) The stated measurement ranges and accuracies for the individual sensors refer to operating conditions when the supply voltage is connected.

## DIMENSIONAL DRAFT

