

## DESCRIPTION AND APPLICATION

The programmable sensor is intended for temperature measurement and measurement of relative humidity of air. The sensors enable to measure temperature and humidity in food, pharmaceuticals and raw material stores, museums, archives, galleries, meteorological stations etc. The sensor is designed for wall mounting. It consists of electronic circuits placed in the durable plastic box with the connection terminal board and the sensing element for temperature and humidity located in the cover.

Digital conception with microprocessor provides long-term stability of parameters, temperature compensation of the humidity sensing element and failure state signaling. The most up to date polymeric sensing element for humidity guarantees stability of indication and resistance to condensation water.

Two galvanically separated current signals 4 to 20 mA are available as output signals of the measured variables; the outputs are set by the producer as follows:

**the value on the output I1:** relative humidity, range 4 to 20 mA is related to 0 to 100 % RH

**the value on the output I2:** temperature, range 4 to 20 mA is related to -30 to +80 °C

A calibration sheet and program TSensor for sensor configuration by means of USB cable SP003 are included in the sensor price.

The sensors are designed to be operated in a chemically non-aggressive environment.



## SPECIFICATIONS

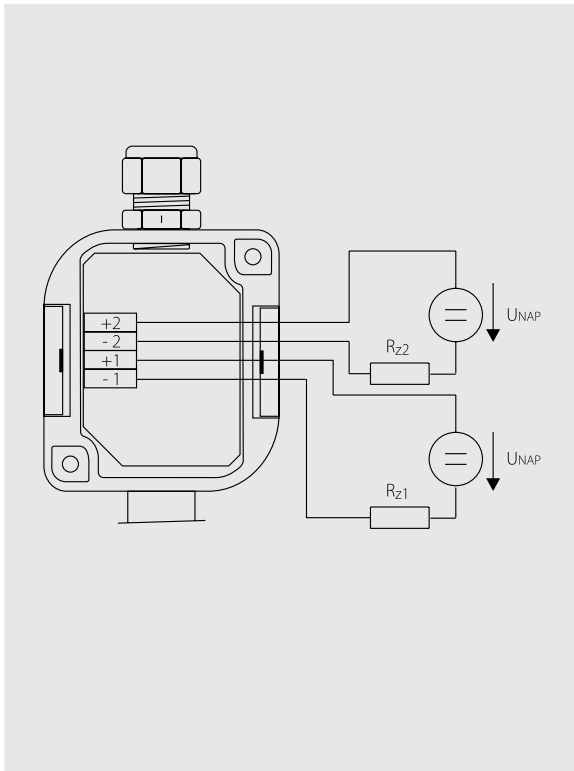
### BASIC DATA

Type of sensor	PTSV 110
Type of sensing element	Pt 1000/3850
Analog outputs	two galvanically separated signals 4 to 20 mA
Current output in the case of error	< 3,8 mA or > 24 mA
Power supply (UNAP)	9 to 30 V DC, maximum ripple 0,5 %
Range of temperature measurement*	-30 to 80 °C
Accuracy	± 0,4 °C in the range 0 to 100 °C, otherwise 0,4 % of the measuring value
Range of relative humidity measurement **	0 to 100 % RV (the reading is temperature compensated in all temperature range)
Accuracy	± 2,5 % RV in the range 5 to 95 % RV at 23 °C
Ingress protection	electronics IP65 according to EN 60 529 sensors are placed behind the cover with ingress protection IP40 according to EN 60 529
Dust filter of the sensors	filtration efficiency 0,025 mm
Operating temperature range of the device	-30 to 80 °C
Operating humidity range of the device	0 to 100 % RV
Working position	the measure stem downwards
Elektomagnetic compatibility	in accordance with EN 61326-1
Storage conditions	temperature -30 to 80 °C, humidity 0 to 100 % RH without condensation
Mass	approximately 150 g
Material of the box	polyamid

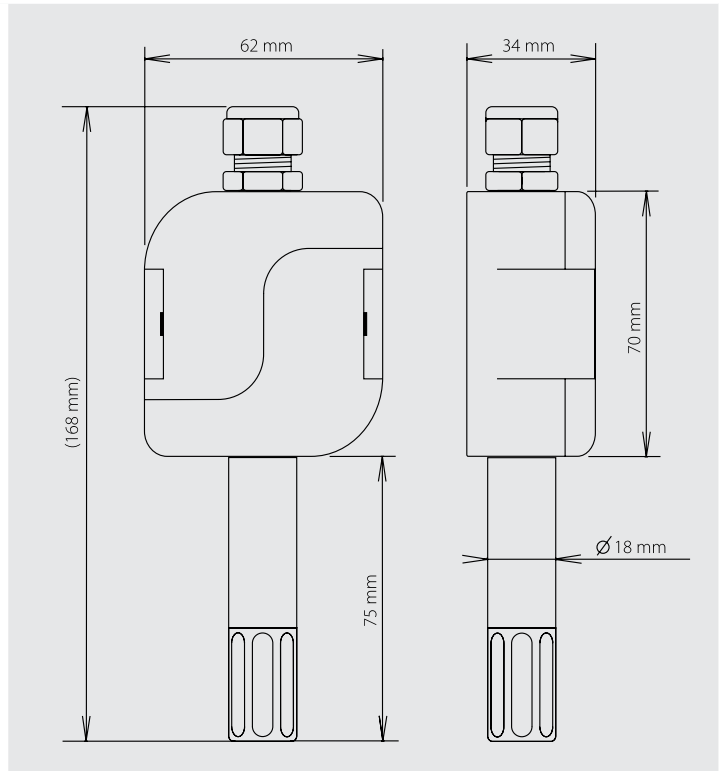
\* Maximum temperature is valid only for the measure ending with the sensing elements. At the temperatures above +85 °C the relative humidity in continuous operation must not go over the allowed limit according to the diagram for the range limitation of temperature and humidity measurements.

\*\* Any kind of value – temperature, relative humidity, temperature of a condensation point, absolute humidity, specific humidity, proportion of mixture or specific enthalpy can be assigned to the each output of the 2-output-sensor. The same value can be assigned to the both of outputs, too. The outputs are set by the producer for the maximum range. The range of the outputs can be set by user by means of PC using the cable SP003 which is delivered as optional accessory at extra cost. Other than standard setting of outputs (RH, T, Trb, ..) and their ranges is possible – it must be specified in the order.

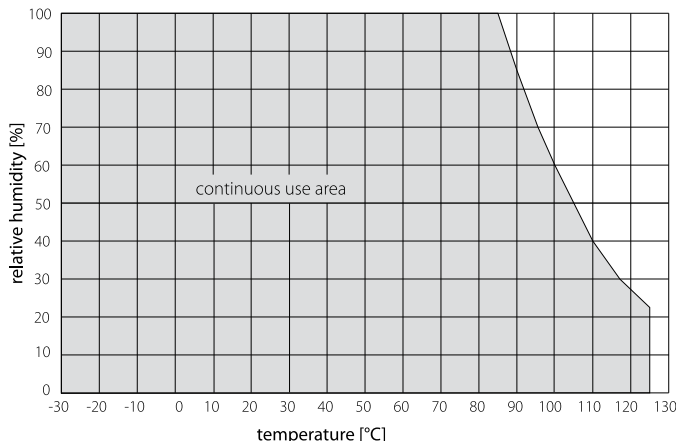
## WIRING DIAGRAM



## DIMENSIONAL DRAFT



## Limitation of the measuring range for temperature and humidity



## SENSOR INSTALLATION AND SERVICING

Before connecting the supply lead-in cable, lift off the lid of the plastic connection head by means of a flat screwdriver. The lead-in cable is connected to the terminals according to the wiring diagram through the loosened grommet. The recommended wire cross section is 0.35 to 1.5 mm<sup>2</sup>, the outer diameter of the circular cross-section cable can range between 4 and 8 mm. To insure the ingress protection value of IP 65, the grommet has to be tightened and the lid has to be put on after connecting the lead-in cable.

In case the lead-in cable is laid in the vicinity of high voltage conductors or those supplying equipment creating disturbing electromagnetic field (e.g. inductive load equipment), a shielded cable should be used. In case of using a holder the accessory should be placed first in the location where the temperature will be measured and then the sensor insert into the holder

After installing and connecting the sensor to the appropriate evaluating electrical equipment the sensor is ready to use. The sensor does not require any special attendance or maintenance. The device can be operated in any working position, but the grommet should not be directed upwards.

Sensors are mounted in any working position directly on flat surface by means of two screws  $\varnothing$  4,0 mm in the openings placed in head corners. The dimension 13 mm (distance to the barrier in the connection head) must be added to the necessary length for fastening to a basis. To insure the tightness it is necessary to tighten the grommet carefully after connecting the cable. During closing of the head by means of the lid the clips should be snapped in origin position.

## HOW TO ORDER

PTSV 110

1	H	1	0	A	2	1	0	B	0	0	0	0
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WHEN ORDERING GOODS, THE FOLLOWING DATA ARE REQUIRED:

Required data	Example
Product type	PTSV 110

## DELIVERY

The sensors are packed by 1 or 2 pieces.

The program for converter configuration is placed on [www.sensit.cz](http://www.sensit.cz) to download.

In addition, the following accessories and documents may be provided together with the product:

- CD with software for converter configuration
- the cable for sensor setting
- a calibration sheet
- the EU certificate of conformity.