SENSIT

TEMPERATURE SENSOR WITH STEM AND DISPLAY

D02.04en

DESCRIPTION AND APPLICATION

These resistance temperature sensors with display and stem are designed for contact temperature measurements of liquid or gaseous substances. The temperature sensor-central holder combination is suitable for temperature measurements in air condition ducts. The temperature sensor-thermowell combination is suitable for temperature measurements in tubing. The temperature sensing element is located in a stainless steel stem of length of 70 to 420 mm. The plastic head of the temperature sensor with display is equipped with a cable grommet or a connector. The measured temperature is indicated on the 4-digit display located under the transparent cap of the head. The temperature sensors with display can be used for any control systems compatible with output signals listed in the table of technical parameters.

The maximum temperature range for current loop setting of the temperature sensors with display is -50 to 150 °C. Within this range, the required operating temperature ranges may be programmed, while the minimum difference between the lower and upper limit of the temperature range is 10 °C. The maximum temperature around the head is -30 to 70 °C and must not be exceeded even for a brief period. The temperature sensors with display meet ingress protection IP 65 according to EN 60529, as amended. The temperature sensors with display are easy to be installed thanks to the unique design of "S-head" made by SENSIT s.r.o.

The sensors are designed to be operated in a chemically non-aggressive environment, the use must be chosen with regard to temperature resistance of the head and the metal cases.

ACCESSORIES

- central plastic holder (part of the packaging)
- stainless steel thermowell JS 130
- metal central holder K120
- for the version with connector: lead-in connector CONEC 43-00092
- connection cable with the straight-type RKT connector or with the rectangular-type RKWT connector
- screw with collet or cutting rings – if different lenghts of stem immersion of temperature sensor are set

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 (K – with a connector)	NSD 520 NSD 520K	NSD 720 NSD 720K
Output signal	4 to 20 mA	0 to 10 V
Type of sensing element	Pt 1000/3850, accuracy class B ($\pm$ 0,3 + 0,005 x $\mid$ t $\mid$) in °C	
Measuring range	adjustable	
Maximum temperature range	-50 to 150 °C	
Measuring error	0.8 % from the range, at least 0.5 °C	
Display screen	4-digit LED, character dimension 7.62 x 4.22 mm	
Power Supply U	15 to 30 V DC	
Nominal voltage Un	24 V	
Load resistance		max 250 Ω min 10kΩ

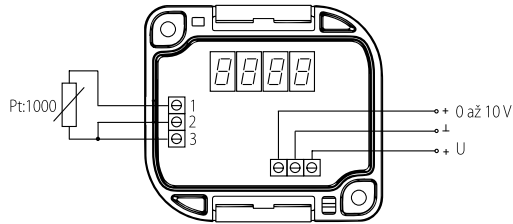| Sensor type (K – with a connector)	NSD 520 NSD 520K	NSD 720 NSD 720K
Current / voltage when the sensor is interrupted	> 24 mA	> 12 V
Current / voltage when the sensor is short-circuited	< 3 mA	~ 0 V
Material of the head	POLYAMIDE	
Dimension of the head	70 x 63 x 34 mm	
Wire cross-section	0.35 to 1.5 mm^2	
Ingress protection	IP 65 in accordance with EN 60529, as amended	
Cable connection	through the grommet M 16 x 1.5 / through the connector LUMBERG M12	
Ambient temperature around the head	-30 to 70 ℃	
Electric strenght	500 V / 50 Hz in accordance with EN 60730-1, as amended	

OTHER PARAMETERS

Length of the stem	70, 120, 180, 240, 300, 360 and 420 mm
Diameter of the stem	$6^{+0,2}$ mm
Material of the stem	stainless steel DIN 1.4301
Insulation resistance	> 200 MΩ at 500 V DC, 25° ± 3℃, relative humidity < 85 %
Max measurement range	-50 to 150 ℃
	by using a sensor with a longer stem of 60 mm, the upper limit of allowable temperature can be extended up to 250 °C

WIRING DIAGRAM

Output 4 to 20mA
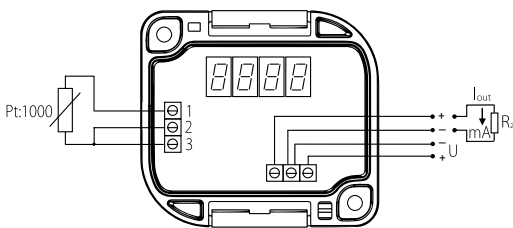
Output 0 to 10V

DIMENSIONAL DRAFT

With the grommet

With the connector

Accessories

Connector RSFM4, M12

Plastic holder (a part of packaging)

Metal central holder K120

Thermowell JS 130

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