

DESCRIPTION AND APPLICATION

Temperature sensor SD 112 is intelligent microprocessor-controlled temperature sensor. This temperature sensor is intended for temperature measurement in industrial areas or outdoors. The standard temperature range in which the sensor is allowed to be utilised is -30 to 70 °C. The sensors communicate by means of RS 485 bus and only the bus can control the sensor. Communication inputs are protected to overvoltage. In case the module is placed as terminal on the line, a terminating resistor can be attached to the wiring by shorting the contacts (the switch SW placed next to terminals for communication lines connection). All settings are stored in EEPROM memory. The electronic module is equipped with the WATCH-DOG circuit, which safeguards proper program functioning in the microprocessor. Easy mounting of the temperature sensor is ensured by the unique “S head” design invented by SENSIT s.r.o.

The sensor is designed to be operated in a chemically non-aggressive environment. The sensor is made in variant:

SD 112 – the command structure corresponds with the ModBus RTU communication protocol.

DECLARATION, CERTIFICATES, CALIBRATION

EU Declaration of Conformity – in accordance with Act No. 22/1997 Coll. as amended for sensors with an digital output.

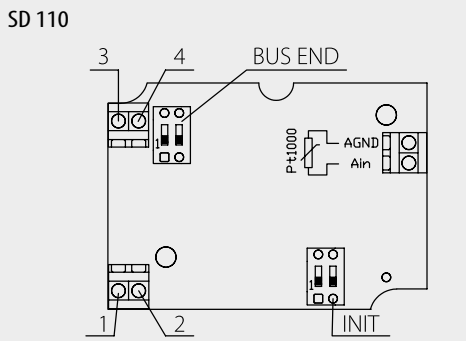
Calibration – The final metrological inspection – comparison with standards or working instruments – is carried out for all the products. Continuity of the standards and working measuring instruments is ensured within the meaning of the Section 5 of Act no.505/1990 on metrology. The manufacturer offers 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

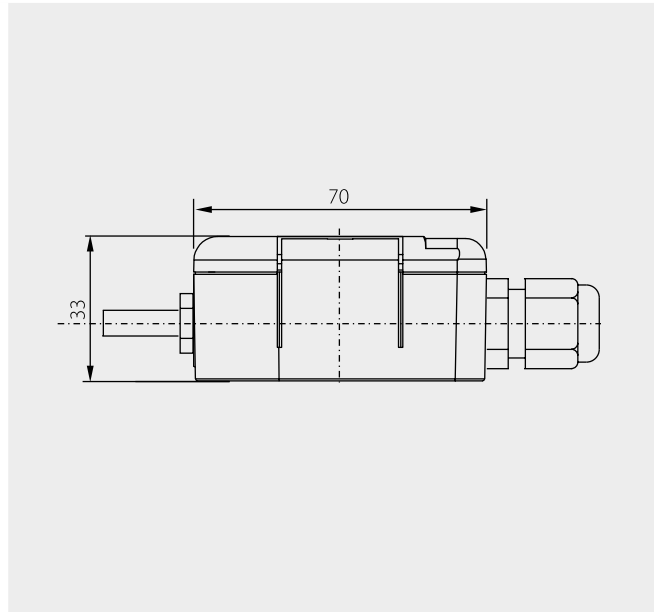
Sensor type	SD 112
Power supply	10 to 35 V DC (unstabilized) 14 to 24 V AC
Power consumption	max. 1000 mW
Measuring range	-30 to 70 °C
Standard stem length	25 mm
Communication properties	communication via RS 485, maximum segment length is 1200 m, asynchronous transfer
	preset transfer speed 9600 Bd optional transfer speeds 1200, 2400, 4800, 19200, 57600, 115200 Bd - DIP switch
	247 modules / 1 serial port protocol ModBus RTU 1 stop bit, without parity
Accuracy of electronics	0.05 %
Accuracy of sensing element	± 0.5 °C
Resolution	0.01 °C
Ingress protection	IP 65 in accordance with EN 60 529
Material of the sensor stem	stainless steel DIN 1.4301
Material of the connection head	POLYAMIDE
Working conditions	ambient temperature: -30 to 70 °C
	relative humidity: max. 85 % (at the ambient temperature 25 °C)
	atmospheric pressure: 70 to 107 kPa
Weight	0.2 kg

WIRING DIAGRAM



Marking	Description
1	power supply
2	power supply
3	+ data bus RS 485
4	- data bus RS 485
INIT	INIT mode initialization
BUS END	connection for bus ending

DIMENSIONAL DRAFT



SENSOR INSTALLATION AND MAINTENANCE

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 mm², 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. After installing and connecting the sensor to the sequential evaluating electrical equipment the sensor is ready to use. The sensor does not require any special servicing or maintenance. The device can be operated in any working position, but the grommet must not be directed upwards.