

# TEMPERATURE SENSORS WITH A DIGITAL OUTPUT FOR INTERIORS

095.01en

## DESCRIPTION AND APPLICATION

These sensors are designed for temperature measurement of gaseous substances in water-protected areas – e.g. for temperature measurement in rooms (schools, theatres, lecture halls, etc.), offices, interiors of residential houses or even production halls. Suitable design and high-quality material ensure that the sensor does not feel disturbing even in the interiors with high aesthetic requirements.

The sensors consist of a plastic ribbing head, where a printed circuit board with the individual sensors or a converter is placed to establish a particular digital output according to the type of a sensor. The basic versions of digital outputs are:

**SD 102** – MODBUS/RTU communication protocol, communication via the RS485 bus

**SD 104** – CANopen/CiA DS 301 communication protocol, communication via the CAN bus

**SD 105** – DS 18B20 digital temperature sensor, communication via the 1-Wire bus

**SD 106** – TSic 206, 506 and 716 digital temperature sensors, ZACWire communication protocol

The temperature range of sensor use is defined in the table of technical parameters for the individual versions of sensors. The sensors meet the ingress protection of IP 30 according to EN 60529, as amended. Installation is recommended on an inner wall at the height of 1.5 m, in areas of movement of persons, at places not exposed to direct sunlight and not influenced by heat from walls, heating radiators or lighting.

The sensors are 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.



TEMPERATURE SENSORS WITH A CONNECTION HEAD

## DECLARATION, CERTIFICATES, CALIBRATION

Manufacturer provides **EU Declaration of Conformity**.

**Calibration** – The entire production passes through a final metrological inspection, which is carried out by comparing with standards or working measuring instruments. Continuity of the standards and working measuring instruments is ensured within the meaning of Section 5 of Act No. 505/1990 on Metrology. The manufacturer offers to supply the sensors calibrated in the SENSIT s.r.o. laboratory (according to requirements of the EN ISO/IEC 17025 standard, as amended) or in an accredited laboratory.

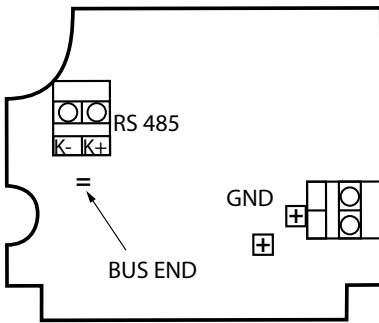
## SPECIFICATIONS

Sensor type	SD 102	SD 104	SD 105	SD 106
Output signal	RS 485 / MODBUS RTU	CAN / CANOpen-CiA DS 301	1-Wire / DS18B20	ZacWire / TSic x06
Measuring range	-30 to 70 °C		-30 to 100 °C	TSic 206 and 306 -30 to 100 °C TSic 506 and 716 -10 to 60 °C
Measurement accuracy	± 0.5 °C		± 0.5 °C in the range of -10 to 80 °C ± 2 °C in the range of -30 to 100 °C	TSic 206 ± 0.5 °C in the range of 10 to 90 °C TSic 306 ± 0.3 °C in the range of 10 to 90 °C TSic 506 ± 0.1 °C in the range of 5 to 45 °C TSic 716 ± 0.07 °C in the range of 25 to 45 °C
Supply voltage (U)	15 to 30 V DC		3 to 5.5 V DC	
Rated supply voltage (Un)	24 V DC		5 V DC	3.3 V DC
Consumption / Supply current	maximum: 500 mW typical: 300 mW		1 mA	30 µA
Ingress protection	IP 30 in accordance with EN 60529, as amended			
Working conditions	ambient temperature: -30 to 70 °C		ambient temperature: -30 to 100 °C	
	relative air humidity: max. 85% atmospheric pressure: 87 to 107 kPa			
Dimensions of the head	71.9 × 59 × 27 mm			

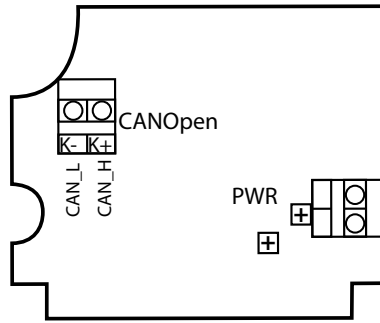
## OTHER PARAMETERS

Material of the head	LEXAN	
Recommended wire cross-section	0.14 to 1 mm <sup>2</sup>	0.35 to 1.5 mm <sup>2</sup>
Weight	min. 50 g	min. 35 g

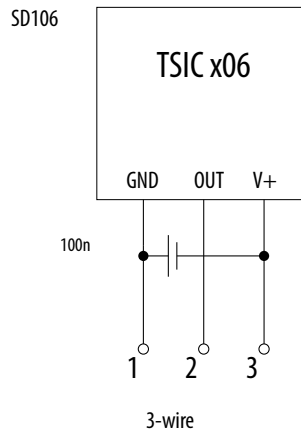
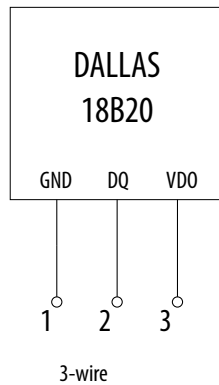
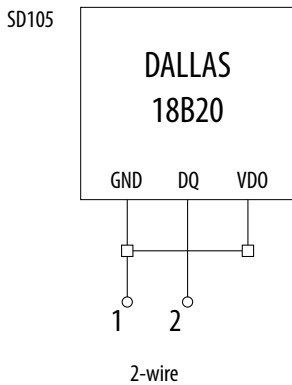
## WIRING DIAGRAM



SD 102  
 GND, TPWR – supply voltage (U)  
 K+, K- – communication line  
 BUS END v- RS 485 terminatio



SD104  
 GND, PWR – supply voltage (U)  
 CAN\_L, CAN\_H – communication line



## DIMENSIONAL DRAFT

