Complaints and repairs:

Guarantee and after-guarantee repairs of sensors are ensured by the manufacturer. The product must be delivered including a copy of the Guarantee Certificate, duly packed and fit to shipment so as not to get damaged during transportation.

Disposal:

The disposal must be performed in compliance with Act No. 185/2001 Coll. on waste as subsequently amended and Implementation Decree No. 352/2005 Coll. on details of electronic equipment and electronic waste management in which the Directive 2002/95/ES – RoHS of the European Parliament and of the Council is implemented. Individual materials used are disposed of in the following manner:

- Product package --- is fully recyclable --- dispose in compliance with local regulations (forwarding to authorized person), catalogue number of waste 150101
- Plastic parts --- are recyclable --- dispose in compliance with local regulations (forwarding to the authorized person), catalogue number of waste 160117
- Cables, insulation tubing --- dispose in compliance with local regulations (forwarding to authorized person), catalogue number of waste 170411
- Defective products (non-disassembled) --- dispose in compliance with local regulations (forwarding to authorized person) - catalogue number of waste 160216 - Other constituents removed from discarded equipment.

DECLARATION OF CONFORMITY, CERTIFICATES

SENSIT s.r.o. provides the product with the manufacturer's Declaration of Conformity issued according to Act ČSN EN ISO/IEC 17050-1 as subsequently amended.

ČSN EN 60 529 Certificate No. FTZÚ 09 E 0024 issued 3.11.2009 by Physical-Technical Testing Institute, Ostrava-Radvanice

GUARANTEE CERTIFICATE

The product is covered by guarantee for 30 months from the date of purchase.

In this period, SENSIT s.r.o. will remove all manufacturing defects free of charge. When filing a claim, the product along with its Guarantee Certificate and the Claim Report with a concise description of the fault must be submitted. The guarantee does not cover the product damaged during shipment, undue storage and mishandling, the product used for purposes other than intended or failure to follow the operating instructions, the product being tampered with and the product without Guarantee Certificate or its name plate.

Elsist

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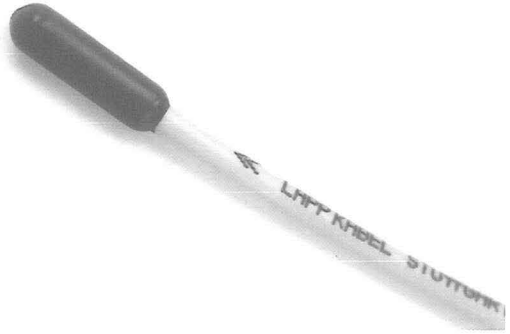
SENSIT extend your senses

INSTRUCTION MANUAL

TEMPERATURE SENSOR TR161A DS 18B20

The temperature sensor with a cable for measuring temperatures of gaseous and liquid substances ranging from -30 to 80 °C intended for universal application.



SENSIT s.r.o.
Školní 2610, 756 61 Rožnov pod Radhoštěm, ID No. 64087484, VAT No. CZ64087484, Phone: +420 571 625 571, Fax: +420 571 625 572
Company is incorporated in the Companies Register at the Regional Court in Ostrava, Section C, File 13728, sensit@sensit.cz, www.sensit.cz

9038.1	02.14
Supersede	

Legal regulations and standards:

- Laws, regulations and technical standards referring to occupational safety must be followed during installation.
- Electrical connection of the detector may only be carried out by a competent person with electrician qualification who is familiarized with the "Instruction Manual" in detail.
- The Instruction Manual is part of the product and it is necessary to keep it for the entire service life of the product.
- The Instruction Manual must be transferred to any other owner or user of the product.

Application:

The temperature sensors TR161A are designed for measuring temperatures of gaseous and liquid substances. The temperature range for application of the sensor is – 30°C to 80 °C and it must not be exceeded even for a short term. The sensors may be used for all control systems compatible with the DS 18B20 temperature sensor. The temperature sensors are designed for universal application, the sensor housing and supply cable are resistant to salt solutions, oils and greases.

Sensor description:

The sensor consists of a hermetically closed plastic housing with the sensing element inside and a supply cable. The sensor housing is made of plastic based on polyamide. The length of housing is 25 mm and diameter of housing is 10 mm. The sensor is connected as two-wire. The supply cable has external PVC insulation and is shielded. The shielding is not connected with the temperature element.

Technical parameters:

Type of element	DS 18B20
Accuracy class of element *	± 0,5 °C in the range –10 to 85 °C ± 2 °C in the range -50 to 125 °C
Temperature element wiring	two - wire
Measuring range	-30 °C to 80 °C
Power supply voltage	3 to 5,5 V
Sensor IP code	IP 67 according to ČSN EN 60 529
Response time	$\tau_{0,5}$ < 15 sec (in flowing water > 0,2 m.s^{-1})
Housing material	plastic based on polyamide
Housing diameter	8,0 ± 0,1 mm
Housing length	25 mm
Dielectric strength	4 kVef according to ČSN EN 61010-1 Art. 6.8.4.
Insulation resistance	> 200 MΩ at 500VDC, 25 ± 3 °C
Supply cable type	shielded PVC 2 x 0,14 mm^2
Supply cable length	2m
Supply leads resistance	0,254 Ω / 1 m at a temperature of 25 °C
External pressure endurance	without thermowell 2,5 MPa
Class of electrical equipment	Protection class III
Weight	0,05 kg / 1 m

Operating conditions:

The sensors are designed for continuous operation in the environment defined by the parameters according to ČSN EN 60721-3-3 with the degree of strictness IE 37 and on the following conditions:

- temperature round the supply cable: -30 °C to 80 °C
- relative humidity of the surroundings: 10 to 100 %
- atmospheric pressure: 70 to 106 kPa

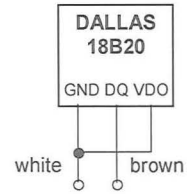
Sensor installation:

1. Install the sensor in the measured location

3. Connect the wires of the supply cable to the evaluation unit according the wiring diagram. **The supply cable shielding is not conductively connected with the temperature element.**

4. After installation and connection to the consequential electrical measuring device, the sensor is ready for operation. The sensor does not require any special attendance or maintenance. **Operating position is arbitrary.**

Wiring diagram:



Warnings and restrictions:

The sensors must not be used for measuring in locations:

- Where the specified operating conditions are not adhered to
- Where the sensor is exposed to mechanical action
- With explosion hazard (the supply cable is not resistant to flame propagation)
- With the operating pressure higher than indicated in technical parameters
- Where the sensor could be exposed to permanent submersion in a liquid
- Where the sensor could be exposed to acids, alkalis and solvents

It is not suitable to use the sensors for measuring temperature in locations:

- Where sufficient contact with the measured fluid is not secured (low submersion of the sensor, effects of the surroundings).
- Where the supply cable might run parallel to mains cables (risk of interference signal induction and the measurement results may be influenced), the safe distance from mains power cables when cables run parallel can be as much as 0,5 m according to the nature of interfering fields.

Failure to follow the said recommendations will negatively affect measurement accuracy, reliability and service life of the temperature sensor.

Calibration:

SENSIT s.r.o. performs the initial calibration of meters in compliance with § 10 Act 505/1990 Coll. as subsequently amended within the scope of their manufacturing processes. The calibration is performed by submersion of the measuring stem into a liquid bath. The continuity of operating meters is ensured in compliance with § 9, Sect. 4 in this Act.

Delivery:

Each delivery contains the following unless otherwise agreed by the customer:

- Sensor according to purchase order
- Instruction Manual, including Guarantee Certificate
- Delivery Note

Packaging:

The sensors are delivered in packages that meet the conditions of Act 477/2001 Coll. on packaging as subsequently which is in compliance with the European Parliament and Council Directive 94/62/ES on packaging and packaging waste

Storage:

The sensors located in their original delivered packages can be stored under conditions corresponding to IE 11 Class according to ČSN EN 60721-3-1:

- Ambient temperature 5 to 40 °C
- Humidity 5 to 95%