OPERATION MANUAL

Pressure resistant temperature probe DS18S20-series with thread M10

Description

Characteristic features

- Probe with threads M10, Ø 7 x 28 mm
- Pressure resistant. 20 bar, with sealing
- High quality TPE cable shielded
- Continuous operating temperature –40...+80 °C
- Sensor in stainless steel protective sleeve (1.4571)
- Process connection achieved with the supplied seal IP67
- RJ12 plug connector with breakage protection
- Resolution 0,06 °C
- Accuracy ±0,5 °K nominal (from 0...+85 °C), as per data sheet of manufacturer
- Scratchpad memory for probe identification

Areas of application

- Pneumatics and hydraulics
- Cold storage devices
- Science and research laboratories
- Industrial temperature logging

Technical data

Pressure resistant temperature probe DS18S20 with thread M10	
Temperature measuring range	-55...+125 °C
Operating range	-40...+80 °C
Accuracy	±0,5 °C (-10...+85 °C)
Sensor	DS18S20
Probe	Stainless steel 1.4571 Length 28 mm; Ø 7 mm, Thread M10
Cable	TPE/Cu/TPE; 3x0,14 mm² Length 2000 mm
Connection	RJ12 connector
CE-conformance	2014/30/EU
EMV-noise emission	EN 61000-6-3:2011
EMV-noise withstanding	EN 61000-6-1:2007

Artikel	Art.-Nr.
Einschraubfühler mit Kabel 2 m	0555 0251
Einschraubfühler mit Kabel 5 m	0555 0251-01
Einschraubfühler mit Kabel 10 m	0555 0251-02

Features

The pressure resistant measuring probe can be screwed with a M10-screw in thread.
This models with seal ring are suitable up to 20 bar.
The models with TPE-cable and stainless steel probe are chemically stable and the tube portion of probe can be submerged in liquid, the stainless steel (1.4571) does not get affected. owever, in the cable termination area, the probe should not come into constant contact with liquid. They are also suitable for measurement in gas medium.

Temperature range

The Dallas temperature sensors are semiconductor sensors. The un-housed sensors are suitable for temperature measurement in the range of -55...+125 °C. These temperature values are the final limits and operating above these values is not at all recommended, otherwise the component can get damaged. Above 60 °C continuous operating temperature, the PVC becomes soft and can get deformed. At approx. 80 °C, the material becomes plastic and the insulation gets damaged under pressure.

B+B Thermo-Technik GmbH | Heinrich-Hertz-Straße 4 | D-78166 Donaueschingen
Fon +49 771 83160 | Fax +49 771 831650 | info@bb-sensors.com | bb-sensors.com

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Installing and configuration

The Dallas temperature sensor of type 1820 has an internal identification (serial number) and can be operated in parallel together with several other components on a three-wire bus. After wiring all the sensors, the PC adapter must be individually configured for the connected sensors. Operation is not possible without prior configuration of the system. Since the configuration is stored in the internal EEPROM of adapter, this process is to be done only once. Only if an additional sensor is to be used on the existing network, the configuration needs to be repeated.
The sorting of probes, found on the network, is done on the basis of binary serial number.

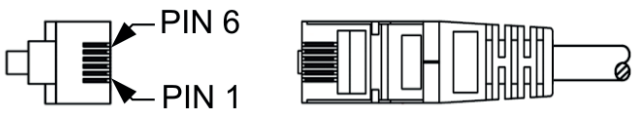
Pin configuration of RJ12-plug connector

The Western-plug connector is configured as follows (View on the cable, i.e. contact surfaces of the plug!):
After wiring all the sensors, the PC adapter must be individually configured for the connected sensors. Operation is not possible without prior configuration of the system. Since the configuration is stored in the internal EEPROM of adapter, this process is to be done only once. Only if an additional sensor is to be used on the existing network, the configuration needs to be repeated.
The sorting of probes, found on the network, is done on the basis of binary serial number.

Pin configuration of RJ12-plug connector

The Western-plug connector is configured as follows (View on the cable, i.e. contact surfaces of the plug 1):

1 Shielding or unoccupied
2 Ground
3 Dallas Data or unoccupied
4 Dallas Data
5 +5 V
6 +5 V or unoccupied



Measuring accuracy

The sensors are calibrated during manufacture and have a typical measuring accuracy of ±0.5 °K at 23 °C application temperature. At the upper and lower limit of measuring range, the accuracy is somewhat on the lower side. Further information is available in the data sheet of component at the website of manufacturer.
During all temperature measurements, the physical conditions are also to be taken care of in order to avoid measuring error, which mainly decides the precision of measuring arrangement.

Thermal transition resistance of measuring objectsensor

This is the main measuring error which occurs during surface measurements. This can be eliminated by providing good thermal contact through mounting in a tube, applying thermal conducting paste or thermal conducting adhesive.

Thermal heat transfer of sensor-ambient temperature

During surface measurements, the measuring arrangement should be thermally insulated from the surroundings, for example, with some foam material or mineral wood.

Thermal heat transfer of sensor-connecting wires

This measuring error can be minimised by itself, for example, if the connecting lead used is as thin as possible and the connecting material is a bad thermal conductor or if the connecting wire is tempered with the measuring object.

In principle, of course, the highest measuring accuracy is achieved through immersion in liquids or in a mounting tube. However, an additional measuring error should be included while taking measurements on surfaces.

Accessories

Accessories	Articleno.
Distribution box 10-hub with hosuing	VERT-GEH
Temperature measuring system TLOG with RS232-interface	0567 0002
Temperature measuring system TLOG with USB-interface	0567 0004
Humidity/ temperature measuring system with UBS-interface Hytelog multisensor USB	0567 0001

Attention

Please avoid extreme mechanical and inappropriate exposure.

The device/product is not suitable for potential explosive areas and medical-technical applications.

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