

BODAS

Temperature Sensor for Fluid TSF

RE 95180/07.12
Replaces: 03.12

1/4

Data sheet



Operation

The sensor element consists of a PTC nickel-thin-film resistor, vacuummetalized onto a ceramic base. It enables the measurement of fluid temperatures when installed in a metallic radiator housing. Its resistance characteristics are virtually linear.

Application

Monitoring of coolants, hydraulic oil or motor oil in vehicles.

Technical data

Table of values

Type	TSF
Measurement range	-40 °C to 150 °C
Pressure range	to 150 bar
Resistance at 0 °C	1000 Ω
Tolerance at 20 °C	± 0.5 K corresp. to ± 0.3 % of R ₂₀
Tolerance at 100 °C	± 1.1 K corresp. to ± 0.5 % of R ₁₀₀
Max. current allowed	5 mA
Time constant (in standing water)	11 s
Lag time	1 s
Vibration strength	40 g
Type of protection	IP 64 A with plug connector
Plug connection	Jet connector, 2-pin
Threaded socket	M14 x 1.5

Order number:

Sensor (without accessories) _____ 0 538 009 252

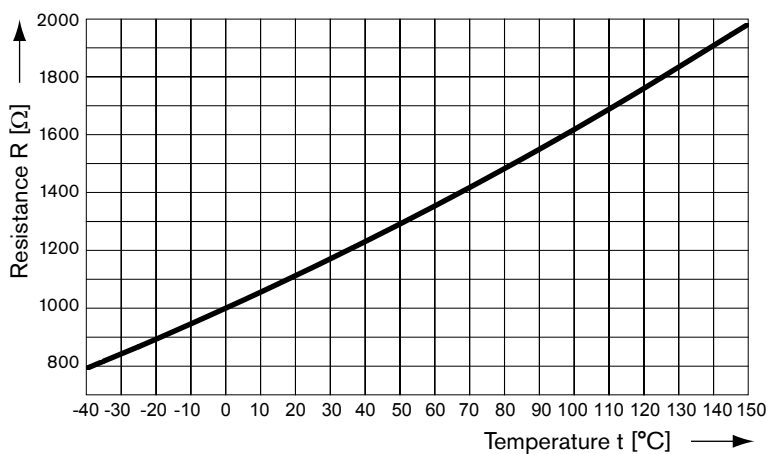
Accessory (connector set) _____ 1 834 484 094

Connector set consisting of:

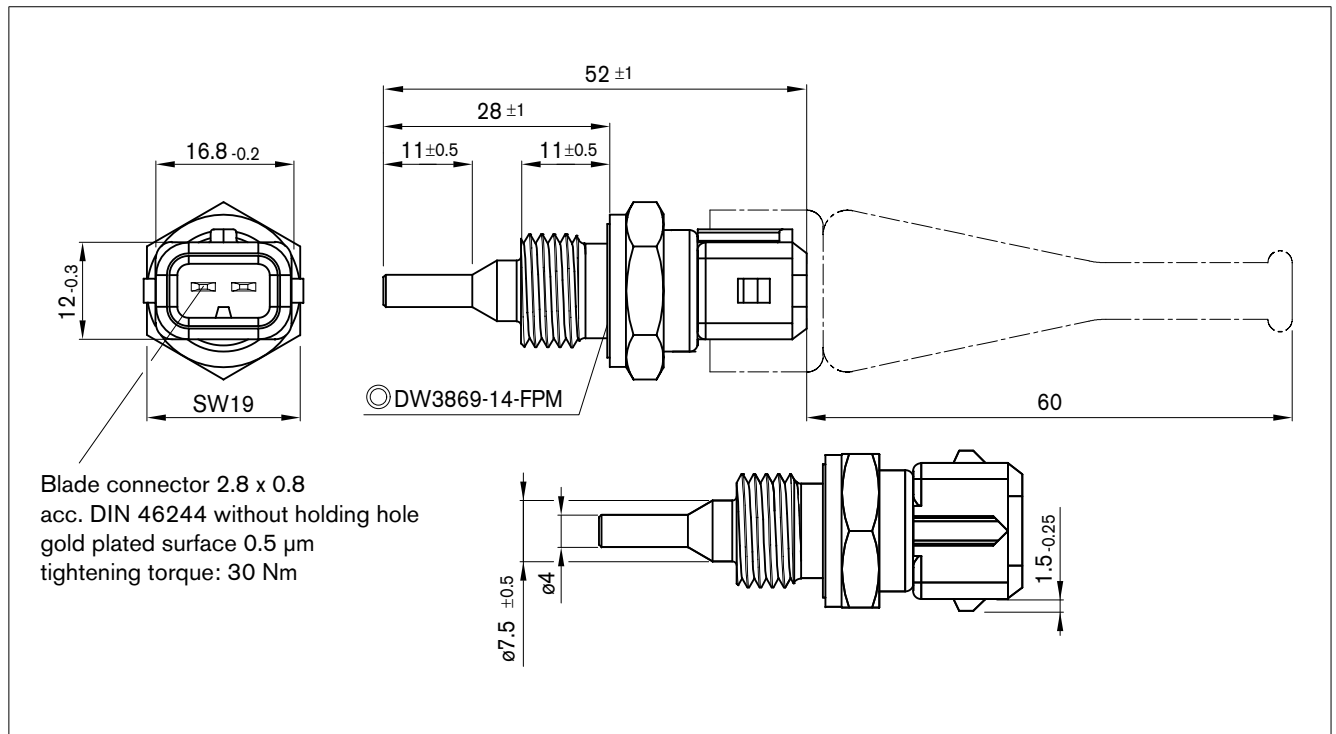
1x connector housing, 2x contacts, 1x protective cap

Connector set is not included in the supply!

Characteristic



Dimensions



Safety instructions

General instructions

- The proposed circuits do not imply any technical liability for the system on the part of Bosch Rexroth.
- It is not permissible to open the BODAS temperature sensor TSF or to modify or repair the BODAS temperature sensor TSF. Modification or repairs to the wiring could result in dangerous malfunctions.
- System developments, installation and commissioning of electronic systems for controlling hydraulic drives must only be carried out by trained and experienced specialists who are sufficiently familiar with both the components used and the complete system.
- While commissioning the BODAS temperature sensor TSF, the machine may pose unforeseen hazards. Before commissioning the system, you must therefore ensure that the vehicle and the hydraulic system are in a safe condition.
- Make sure that nobody is in the machine's danger zone.
- No defective or incorrectly functioning components may be used. If the BODAS temperature sensor TSF should fail or demonstrate faulty operation, it must be replaced.

Notes on the installation point and position

- Do not install the BODAS temperature sensor TSF close to parts that generate considerable heat (e.g. exhaust).
- A sufficiently large distance to radio systems must be maintained.

- The connector of the BODAS temperature sensor TSF is to be unplugged prior to electrical welding and painting operations.
- Cables/wires must be sealed individually to prevent water from entering the device.

Notes on transport and storage

- If it is dropped, the BODAS temperature sensor TSF must not be used any longer as invisible damage could have a negative impact on reliability.

Notes on wiring and circuitry

- Lines to the temperature sensors are so short as possible and be shielded. The shielding must be connected to the electronics on one side or to the machine or vehicle ground via a low-resistance connection.
- The product should only be plugged and unplugged when it is in a de-energized state.
- Lines from the BODAS temperature sensor TSF to the electronics must not be routed close to other power-conducting lines in the machine or vehicle.
- The BODAS temperature sensor TSF and the connection line should be supported mechanically near the installation location.
- If possible, lines should be routed in the vehicle interior. If the lines are routed outside the vehicle, make sure that they are securely fixed.

Safety instructions

- Lines must not be kinked or twisted, must not rub against edges and must not be routed through sharp-edged ducts without protection.
- Lines are to be routed with sufficient spacing to hot or moving vehicle parts.
- The sensor lines are sensitive to radiation interference. For this reason, the following measures should be taken when operating the sensor:
 - Sensor lines should be attached as far away as possible from large electric machines.
 - If the signal requirements are satisfied, it is possible to extend the sensor cable.

Intended use

- The BODAS temperature sensor TSF is designed for use in mobile working machines provided no limitations / restrictions are made to certain application areas in this data sheet.
- Operation of the BODAS temperature sensor TSF must generally occur within the operating ranges specified and released in this data sheet, particularly with regard to voltage, temperature, vibration, shock and other described environmental influences.
- Use outside of the specified and released boundary conditions may result in danger to life and/or cause damage to components which could result in consequential damage to the mobile working machine.

Improper use

- Any use of the BODAS temperature sensor TSF other than described in chapter "Intended use" is considered to be improper.
- Use in explosive areas is not permissible.
- Damage resulting from improper use and/or from unauthorized interference in the component not described in this data sheet render all warranty and liability claims void with respect to the manufacturer.

Use in functions relevant to safety

- The customer is responsible for performing a risk analysis of the mobile working machine and determining the possible safety-related functions.
- In safety-related applications, the customer is responsible for taking suitable measures for ensuring safety (sensor redundancy, plausibility check, emergency switch, etc.).
- Product data that is necessary to assess the safety of the machine can be provided on request or are listed in this data sheet.

Further information

- More detailed information on BODAS temperature sensor TSF may be found at www.boschrexroth.com/mobile-electronics.
- The BODAS temperature sensor TSF must be disposed of in accordance with the national regulations of your country.