

# BODAS

## Temperature Sensor for Air TSA

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1/4

### Data sheet



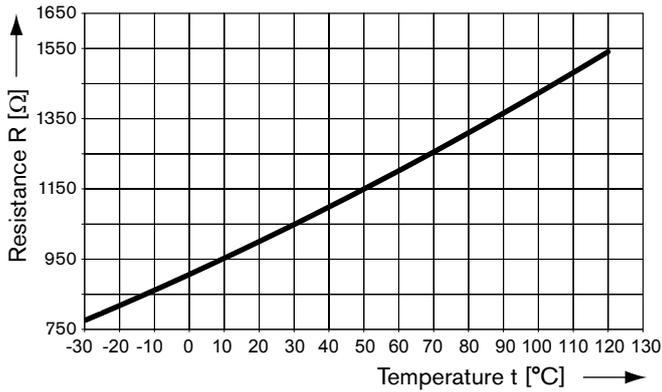
### Operation

The sensor element consists of a PTC nickel-thin-film resistor, vacuummetalized onto a ceramic base. This component is built into a plastic housing to protect it from damage. The time constant and the lag time of the sensor are maintained at minimum levels by the lattice structure and by designing the input and output for good flow characteristics.

### Application

Monitoring temperature of ambient air and of charge air in motor vehicles.

## Characteristics

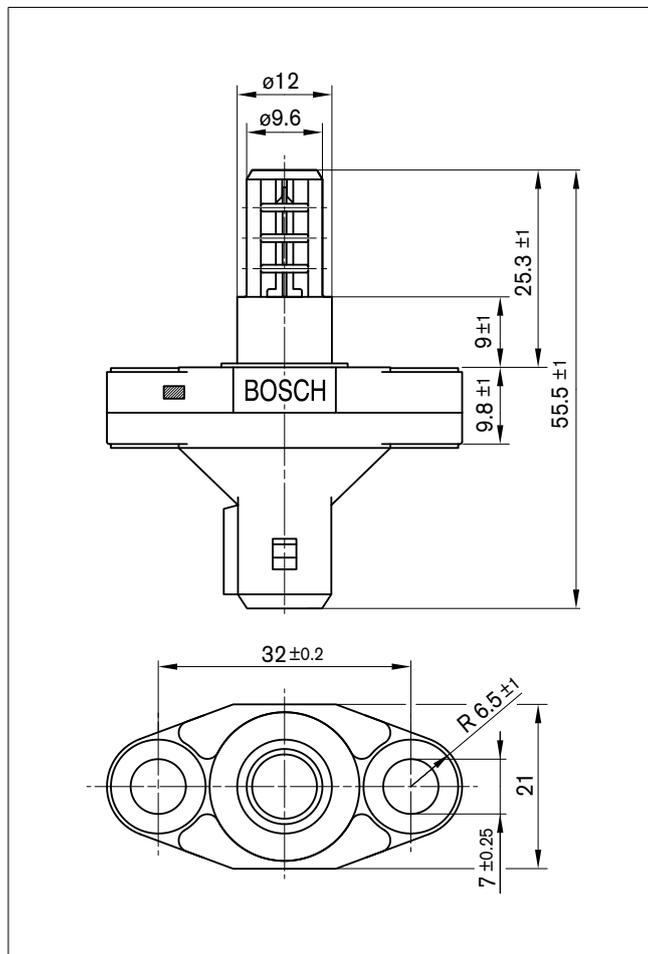


## Technical data

### Table of values

Type	TSA
Measurement range	-40 °C to 130 °C
Resistance at 20 °C	1000 Ω
Tolerance at 20 °C	± 0.5 K corresp. to ± 0.3 % of R <sub>20</sub>
Tolerance at 100 °C	± 1.1 K corresp. to ± 0.5 % of R <sub>100</sub>
Max. current allowed	5 mA
Time constant (in standing water)	→ 0
Degree of protection	IP 64 A with plug connected
Plug connection	Jet plug 2-pin
Mounting	2 x M6

## Dimensions



### Order number:

Sensor (without accessories) \_\_\_\_\_ 0 538 009 203  
 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!

# 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 TSA, or to modify or repair the BODAS temperature sensor TSA. 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 with the complete system.
- When commissioning the BODAS temperature sensor TSA, 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 TSAF should fail or demonstrate faulty operation, it must be replaced.

## Notes on the installation point and position

- Do not install the BODAS temperature sensor TSA close to parts that generate considerable heat (e. g. exhaust).
- A sufficiently large distance to radio systems must be maintained.
- Current is to be conducted away from the BODAS temperature sensor TSA before 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 TSA must not be used any longer as invisible damage could have a negative impact on reliability.

## Notes on wiring and circuitry

- Wires to the temperature sensors are to be kept as short as possible and 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.
- Wires from the sensor to the electronics must not be routed close to other power-conducting wires in the machine or vehicle.
- The sensor and the connection wire should be mechanically supported in the area in which the sensor is installed (to prevent vibration).
- If possible, wires should be routed in the vehicle interior. If the wires are routed outside the vehicle, make sure that they are securely fixed.
- Wires must not be kinked or twisted, must not rub against edges and must not be routed through sharp-edged ducts without protection.
- Wires are to be routed with sufficient spacing to hot or moving vehicle parts.
- The sensor wires are sensitive to radiation interference. For this reason, the following measures should be taken when operating the sensor:
  - Sensor wires 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.

# Safety instructions

## Intended use

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

## Use in safety-related functions

- 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 to ensure safety (sensor redundancy, plausibility check, emergency switch, etc.).
- Product data needed to assess the safety of the machine are either given in this data sheet or can be provided on request.

## Further information

- Further information about the BODAS temperature sensor TSA can be found at [www.boschrexroth.com/mobile-electronics](http://www.boschrexroth.com/mobile-electronics).
- The BODAS temperature sensor TSA must be disposed according the national regulations of your country.