Operating manual

BROSA Temperature Transducer Type 0401

English translation of German original operating manual

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1 General notes

Read the operating instructions and the product-specific documents carefully before commissioning the device.

Make sure that the device is unconditionally suitable for the applications in question.

Improper or non-intended use can lead to malfunctions of the device or to undesirable effects in your application. Therefore, installation, electrical connection, commissioning and maintenance of the device may only be performed by trained specialist personnel authorised by the plant operator.

We also expressly point out that any liability is excluded if instructions in this documentation are not observed.

The specified properties apply exclusively in the unchanged delivery condition. Applicable standards and guidelines must be observed, especially when recoating.

Current certificates are available for download on the BROSA GmbH website.

Only the German version of the operating instructions represents the original document.

1.1 Safety instructions – Explanation of symbols:

ATTENTION! This symbol indicates dangers which can lead to personal injury and damage to property!

2 Description of the BROSA temperature transducer

2.1 Structure and mode of operation

BROSA Type 0401 temperature transducers are typically used where temperatures need to be measured at elevated pressure.

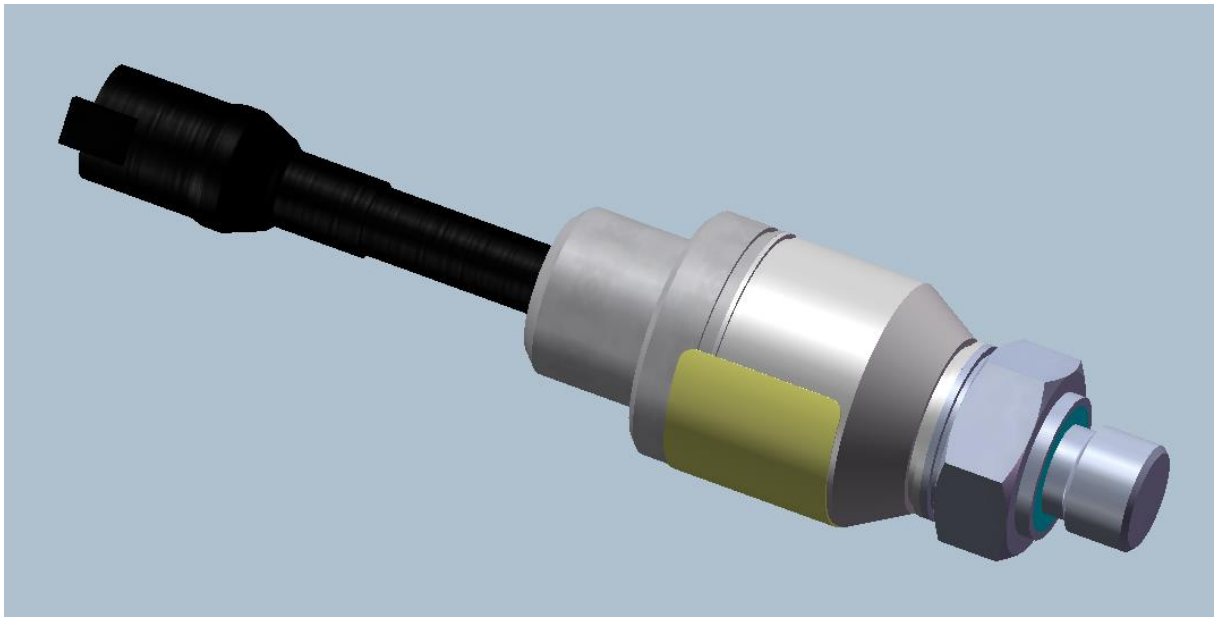

Figure 1: Temperature sensor

Use below a water surface is generally possible after testing and approval by BROSA. Special requirements exist concerning the materials and surface coatings used as well as the watertightness and electrical connections.
Furthermore, there is a possibility that the measurement result would be influenced by the water pressure.

The electrical connection is made according to the pin assignment shown on the technical data sheet. The installation location must be chosen so that the sensor is mounted in a place where it is best protected against mechanical damage, strong vibrations and the influence of heat.

3 Instructions for the safe handling of BROSA temperature transducers

ATTENTION! Failure to observe the following instructions may result in damage to the sensor and/or impaired measurement results. The evaluation of an incorrect measurement can result in personal injury and/or property damage.

ATTENTION! BROSA sensors must not be used for any purpose other than their intended use. Improper use may result in danger to life and limb of the user or third parties and/or impairment of the device in which the sensor is implemented and/or damage to other material assets.

3.1 Handling

ATTENTION! BROSA sensors contain high-quality measurement electronics! Careful handling must be ensured!

- BROSA sensors are supplied in transport-safe packaging. It is recommended to remove the sensors from the packaging only immediately before installation.
- BROSA sensors must be secured against falling, do not throw them!
- Use as a tool (e.g. as an impact or levering tool) is not permitted; it can cause damage to the sensor and thus falsify the measurement result.

3.2 Installation and commissioning

3.2.1 General

Using the dual control principle, it is recommended to perform the following actions in the given order.

a) Checking the assignment of sensor to measuring point: It must be ensured that the sensor to be installed is intended for use at the intended measuring point. For this purpose, the information on the technical data sheet and the nameplate, in particular the article or ID number and the measuring range, must be compared with the data of the measuring point.
b) Checking the sensor for integrity and function: It must be ensured that the sensor to be installed is free from damage of any kind.

ATTENTION! A damaged sensor must not be installed!

c) Establishing the electrical connection: The elements present on the sensor for the electrical connection, including the ground connection where necessary, must be connected to the power supply and the evaluation system of the device. The information on the type plate regarding the connector and cable assignment and, where applicable, the installation instructions for the cable must be observed.

ATTENTION! A faulty or incomplete electrical connection impairs or prevents the measurement.

d) Functional test: After mechanical and electrical installation has been completed, the sensor must be loaded over the entire intended measuring range if possible; the output measuring signals must be subjected to a plausibility check.

ATTENTION! If, due to extraordinary perceptions (e.g. deformation or unusual noise generation), implausibility of the measurement results or for other reasons there is suspicion of a malfunction of the sensor, it must not be put into operation.

3.3 Operation and maintenance

3.3.1 Operation

BROSA sensors are self-acting, no tools are required for operation. Direct manual intervention by the operator is not necessary, therefore there are no requirements for the operator's protective equipment during use. Nonetheless, the relevant specifications for the device in which the sensor is implemented must be observed.

BROSA sensors do not emit airborne sound emissions or electromagnetic radiation.

BROSA sensors may only be operated within the parameters and characteristics given in the technical data sheets and recorded on the nameplate. Among others, these are:

- Temperature range
- Pressure range
- Permissible supply voltage
- Electrical protection class

Inductive or capacitive coupling to the sensor connection cable(s) can falsify the measurement result and must therefore be avoided. Couplings of this type can, for example, arise through unfavourable cable routing (parallel high voltage power lines, frequency converters, transformers, motors, incorrect grounding/shielding, or similar).

When performing electric welding work near the sensor, disconnect and insulate all connections. It must be ensured that no welding current flows via the sensor.

ATTENTION! Operation outside the specified parameters or contrary to the existing properties or use not in accordance with the intended purpose can damage the sensor and lead to its failure or result in incorrect measurement results.

3.3.2 Maintenance

BROSA sensors operate maintenance-free. As a preventive measure, each sensor must be checked regularly for proper condition. The intervals between tests depend on the intensity of use and must be determined by the end user.

A test includes the following items:

- Visual inspection for damage to the sensor and wiring as well as for contamination
- Function test/plausibility check

The causes of existing errors are to be identified and eliminated. If the test reveals indications that the sensor is not in proper condition, it must not be operated any further. If a malfunction or damage to the sensor is detected, it must be sent to the manufacturer's factory for evaluation and, where necessary, repair.

ATTENTION! The sensor may only be repaired at the factory. Interventions carried out by parties other than the manufacturer's factory (e.g. opening, mechanical manipulation, etc.) no longer guarantee the safe operation of the sensor and will void the warranty.

3.4 Disassembly

It is recommended to perform the following actions in the given order.

a) Disconnecting the electrical connection
b) Removal of the sensor

3.5 Disposal

When the sensor has reached the end of its service life, it must be disposed of in an environmentally friendly manner. Since this consists largely of the installed electronic components, it can be recycled as electronic waste in its entirety.

If the sensor is stored before final disposal, a suitable storage location must be selected which prevents harmful substances from entering the environment. If applicable, the sensor must be cleaned.

⚠ ATTENTION! BROSA sensors contain environmentally hazardous substances in trace amounts. This also applies to contamination caused by use. Contamination of the environment by these substances must be prevented.