

Torque-Sensor Model 8645/8646

1. Field of Application

The torque sensor is intended for use in an industrial environment (e.g. in test stands).

2. Scope of Delivery

The torque sensor package consists of the sensor itself (signal detector head and signal conditioning electronics integrated into a single sensor housing), one connecting cable with a soldered-on plug connector, and one installation and instruction manual.

3. Sensor Installation and Removal

The shafts connected to the torque sensor must be properly aligned. A shaft coupling should be selected to eliminate or minimize backlash, angular misalignment of the shafts, end-float, or other mechanical situations that would affect the performance or operation of the torque sensor. Secure the sensor utilizing the 8 mm guides on the sensor body. A maximum cable length of 5 m must not be exceeded. Using a cable or connector other than supplied by burster, or a cable supplied by burster that is of a different length may affect the overall performance of the sensor.

Prior to removing the sensor from operation, remove all lateral forces or torque stored in the mechanical assembly. Remove the keys from the shafts before loosening the mounting screws.

DO NOT REMOVE THE SHAFT WITH TORQUE APPLIED TO THE SENSOR AND SHAFTS.

4. Offset Adjustment

The sensor is present at the factory setting to have an output signal at 0 Nm of 2.5 V. If required, the output signal can be adjusted via a potentiometer (please see data sheet). Remove the headless screw, set the potentiometer to 2.5 V using a plastic screwdriver. Replace the headless screw until flush with the surface of the housing.

5. Interface Description

Mechanical connection:

The key stone adapters on both ends of the measurement shaft are intended for torque transmission.

Electrical connection:

On the sensor housing there is a 5-pin socket for the power supply and the signal output (see data sheet).

6. Operation (Normal, Optimisation)

For optimal measurement results, do not exceed the rated torque when using the sensor. Do not operate the sensor at the maximum rotational speed for extended periods of time. Observe the prescribed operating conditions to ensure trouble-free and maintenance-free operation of the sensor.

7. Operation Outside Specified Conditions, Corrective Action

External magnetic fields may have an adverse effect on the measurement results. Resistance to magnetic fields: max. 300 kA/m at distance of 70 mm. Excessive mechanical stress on the sensor (e.g. longitudinal forces /load outside the specified limits, strong vibrations) may cause damage to the sensor and thus lead to incorrect outputs. Should these conditions be experienced readjusting the sensor may improve the performance. If the problem persists, do not open the sensor housing. Contact the manufacturer for assistance.

8. Commissioning

After sensor installation, observe the following procedure:

- Switch on the power supply unit and check the supply voltage. Peak voltages to the sensor must be avoided! Be sure to verify the power supply voltage prior to connecting the sensor!
- Using the supplied sensor cable, connect the sensor to the power supply unit.
- Connect the sensor output to a high-resistance device under no mechanical load such as an A/D converter, oscilloscope, PLC analogue board, PC measurement board, etc.
- With the sensor under no mechanical load (no torque condition) determine the output signal voltage. If required: Adjust the signal output to read 2.5 V (0 Nm).

9. Service and Maintenance

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There are no required maintenance operations for the sensor.

10. Disposal

Please return the device to burster präzisionsmesstechnik gmbh & co kg for disposal.

11. Handling and Transportation

During sensor handling, storage and transportation, it is important to ensure that the sensor is not exposed to any magnetic or electromagnetic fields.

Static or dynamic loads on the sensor must be avoided.

12. Safety Precautions

- Do not open the sensor housing under any circumstances.
- Do not remove or loosen the locating rings on the shaft ends.
- Do not loosen or tighten the nut of the flange-mounting socket-connector.
- Carrying out any of the above operations (1.-3.) results in loss of sensor calibration. The sensor is no longer fit regular operation and must be returned to burster for calibration and certification.
- Use only power supplies that are properly isolated from the electrical mains.
- Observe the specifications regarding maximum electrical and mechanical loads on the sensor, as shown on the sensor label and under technical features.

Important note:

The authors have carefully prepared, compiled and reproduced all of the technical specifications and programs contained in this document using stringent quality control measures. Nevertheless errors cannot be ruled out. For that reason burster präzisionsmeßtechnik feels obliged to point out that neither a guaranty nor any kind of liability can be assumed for consequences resulting from faulty specifications, accidental damage or claims thereof. Furthermore, there can be no guaranty for the material, quality or specific applicability. This document does not claim to be error free and is subject to technical alterations.

The authors are always grateful to receive any notification of errors contained herein.

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