Torque Sensor
For static and dynamic applications, non-rotary
Model 8632

Application
The 8632 torque sensor is suitable for both static and dynamic measurements in non-rotating torque-transmission systems. Typical uses include testing and calibrating power screwdrivers and torque wrenches and checking tightening torques in joining technology.

For individual measuring tasks the design of our torque sensors can be adapted to the customer’s installation conditions.

More application examples:
► Test structures in the field of precision mechanics
► Determination of friction torques
► Acquisition of breakage moments on screw caps
► Quality assurance in power screwdrivers

Description
The design has been optimized regarding overall length, weight and volume, so that axial forces up to relatively high limit values and bending moments of up to 20 % of the measuring range have only a small effect to the influence of the measuring element. Four metal film strain gauges are mounted on the measuring element and connected to form a full bridge. When applying AC or DC voltage on the bridge, the mechanical value torque is converted into electrical voltage. The necessary amplifier either delivers a norm signal (0 … 10 V, 0/4 … 20 mA) or – with indicator module – a torque signal truly corresponding to the measured variable.

The sensor output signal is standardized, so that an exchange of the sensor (spare part) does not require any new adjustment of the measuring chain.

Measurement range from 0 ... 2 Nm to 0 ... 500 Nm
Linearity error 0.2 % F.S.
Reliable and durable
Simple handling and assembly
Output signal standardized
Different mechanical versions
Optional linearity error 0.1 % F.S.
**Technical Data**

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Measuring Range</th>
<th>Dimensions [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>8632-5002</td>
<td>0 ... ± 2 Nm</td>
<td>A 8 B 7.2 øD 15 L 64</td>
<td>1/4&quot;</td>
</tr>
<tr>
<td>8632-5005</td>
<td>0 ... ± 5 Nm</td>
<td>8 7.2 15 64 1/4&quot;</td>
<td>22.7</td>
</tr>
<tr>
<td>8632-5012</td>
<td>0 ... ± 12 Nm</td>
<td>8 7.2 15 64 1/4&quot;</td>
<td>22.7</td>
</tr>
<tr>
<td>8632-5025</td>
<td>0 ... ± 25 Nm</td>
<td>12.2 10.4 30 71</td>
<td>7/8&quot;</td>
</tr>
<tr>
<td>8632-5063</td>
<td>0 ... ± 63 Nm</td>
<td>12.2 10.4 30 71</td>
<td>7/8&quot;</td>
</tr>
<tr>
<td>8632-5100</td>
<td>0 ... ± 100 Nm</td>
<td>15 15.1 30 76</td>
<td>7/8&quot;</td>
</tr>
<tr>
<td>8632-5160</td>
<td>0 ... ± 160 Nm</td>
<td>15 15.1 30 76</td>
<td>7/8&quot;</td>
</tr>
<tr>
<td>8632-5200</td>
<td>0 ... ± 200 Nm</td>
<td>15 15.1 30 76</td>
<td>7/8&quot;</td>
</tr>
<tr>
<td>8632-5500</td>
<td>0 ... ± 500 Nm</td>
<td>24 22.9 49 100</td>
<td>7/8&quot;</td>
</tr>
</tbody>
</table>

Higher measuring ranges upon request.

**Electrical values**
- **Resistor bridge (full bridge):** foil strain gauge 350 Ω, nominal
- **Excitation voltage:** 2 ... 12 V recommended 10 V
- **Nominal value:** standard, 1 mV/V

**Environmental conditions**
- **Operating temperature range:** - 15 °C ... + 55 °C
- **Nominal temperature of operating range:** - 5 °C ... + 45 °C
- **Temperature effect on zero signal:** ± 0.02 % F.S./K
- **Temperature effect on characteristic value:** ± 0.01 % F.S./K

**Mechanical values**
- **Relative linearity error:** ± 0.2 % F.S.
- **Relative reversibility error:** ± 0.2 % F.S.
- **Relative repeatability error:** ± 0.1 % F.S.
- **Max. operating torque (static):** 150 % of nominal value
- **Torque limit (static):** 200 % of nominal value
- **Breaking moment (static):** > 300 % of nominal value
- **Dynamic load:** recommended ≤ 70 % of nominal value
- **Rated tension angle:** < 0.1°
- **Material:** steel, 1.2826 res. 1.2738
- **Degree of protection:** acc. EN 60529 IP50

**Pins assignment:**
- **function**
- **wire color**
  - excitation voltage (-) brown
  - excitation voltage (+) white
  - signal (+) yellow
  - signal (-) green
  - shield shield

**Mechanical connection:**
- external square and square drive acc. to DIN 3121 e.g. for the linkage to screwdriver tools

**Electrical connection:**
- shielded PVC cable, 3 m

PVC cable is not suitable for too many bending cycles trailing capable upon request

**Order Information**
- **Torque sensor for static application (non-rotary), with internal and external square ends, measurement range ± 12 Nm** Model 8632-5012

**Accessories**
- **Mating connector**
  - 12 pins to all burster table housings Model 9941
  - 9 pins for e.g. model 9163-V3, model 9235, model 9311, model 7281 Model 9900-V209 Model 9900-V229
  - 9 pins with burster TEDS Model 9900-V229

Mounting of a connector to the sensor cable
- for model 9163 in table housing Order Code: 99004
- for model 7281 with burster TEDS Order Code: 99002
- for model 9235 Order Code: 99011

**Amplifier, process indicators, digital displays**
- see section 9 of the catalog.

**Manufacturer Calibration Certificate (WKS)**
- Special calibration for clockwise or/and counter clockwise direction torque, in 20 % steps of range up and down.

The CAD drawing (3D/2D) for this sensor can be imported online directly into your CAD system.
For further information about the burster traceparts cooperation refer to data sheet 80-CAD-EN.