

# Torque Sensor

For static and dynamic applications,  
non-rotary

## Model 8628

Code:	8628 EN
Delivery:	4 weeks
Warranty:	24 months



- Measurement range from 0 ... 2 Nm to 0 ... 1000 Nm
- Linearity error 0.2 % F.S.
- Reliable and durable
- Simple handling and assembly
- Output signal standardized
- Different mechanical versions
- Special versions and higher measurement ranges on request
- Optional linearity error 0.1 % F.S.

8628 EN

### Application

The 8628 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 measuring reactive torques on test benches.

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.

**Technical Data**

Order Code	Measurement Range	Dimensions [mm]									Bore		P	Weight [kg]
		A	øB	øD	F	L	øT	øW	øQ	number	pitch			
8628-5005-VXXXXX	0 ... ± 5 Nm	15	5.5	70	10	70	50	12	40	4	90°	36	0.5	
8628-5010-VXXXXX	0 ... ± 10 Nm	15	5.5	70	10	70	50	12	40	4	90°	36	0.5	
8628-5020-VXXXXX	0 ... ± 20 Nm	15	5.5	70	10	70	50	12	40	4	90°	36	0.6	
8628-5050-VXXXXX	0 ... ± 50 Nm	28	6.6	80	12	90	60	18	45	4	90°	41	0.8	
8628-5100-VXXXXX	0 ... ± 100 Nm	28	6.6	80	12	90	60	18	45	4	90°	41	0.8	
8628-5200-VXXXXX	0 ... ± 200 Nm	50	9	100	15	120	80	30	58	6	60°	43	1.2	
8628-5500-VXXXXX	0 ... ± 500 Nm	50	9	100	15	120	80	30	58	6	60°	43	1.2	
8628-6001-VXXXXX	0 ... ± 1000 Nm	70	11	120	15	140	100	40	65	6	60°	41	1.8	

**Electrical values**

Resistor bridge (full bridge): foil strain gauge 350 Ω, nominal\*  
 \* Deviations from the indicated values are possible.

Excitation voltage: 2 ... 12 V  
 recommended 10 V  
 Nominal value: standardized, 1 mV/V

**Environmental conditions**

Operating temperature range: - 15 °C ... + 55 °C  
 Nominal temperature 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:  
 6 pole plug  
 excitation - 1  
 excitation + 2  
 shield 3  
 signal + 4  
 signal GND 5  
 NC 6

Mechanical connection: one end with flag, and one end with keyway shaft end acc. DIN 6885, page 1 (keyway included in scope of delivery)  
 Electrical connection: 6 pins plug connection  
 Mating connector (cable coupling): 6 pole model 9953 (one included in scope of delivery)

**Application**

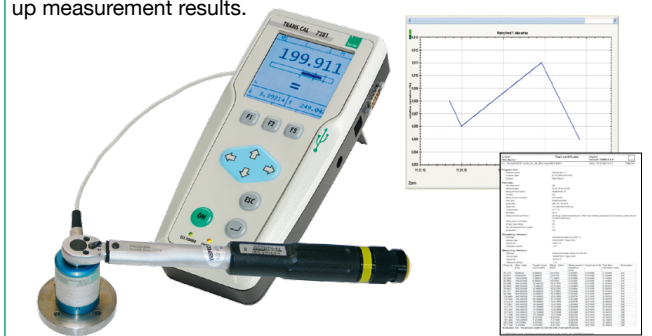
**Quality test and calibration of torque wrenches**

As different as the application field of torque wrenches are, as different are their environmental conditions: heat, cold, humidity, pressure and vibrations have to be resisted while they are expected to function precisely anyway.

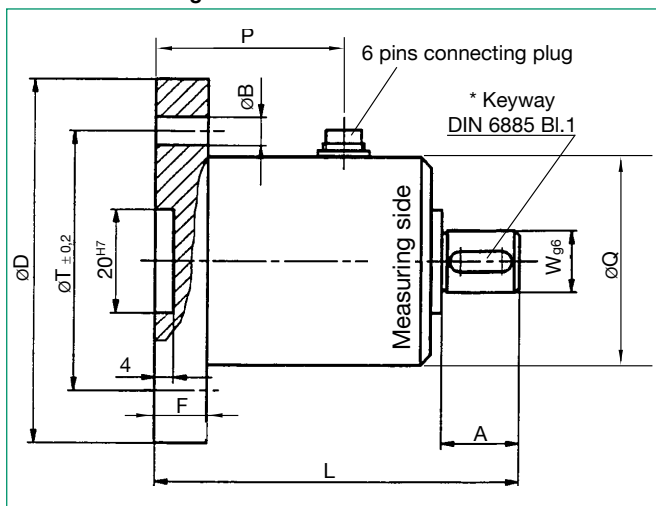
Therefore it is strongly recommended to calibrate a torque wrench once a year.

The 8628 torque sensor is available with an internal/external square drive for this application. The sensor can be used with the TRANS CAL 7281 to form a mobile measurement chain for checking and calibrating torque wrenches.

The DigiCal software provides an easy way to document and back-up measurement results.



**Dimension drawing model 8628**



The CAD drawing (3D/2D) for this sensor can be imported online directly into your CAD system.

Download via [www.burster.com](http://www.burster.com) or directly at [www.traceparts.com](http://www.traceparts.com). For further information about the burster traceparts cooperation refer to data sheet 80-CAD-EN.

**Order Information**

Torque sensor for non-rotary applications one end with flag, one end with shaft, measurement range ± 1000 Nm **Model 8628-6001**

**Option**

Linearity error ± 0.1 % F.S. **-V503**

**Accessories**

- Mating connector, 6 pole cable coupling **Model 9953**
- Mating connector, 6 pole, 90°- phase shift **Model 9900-V589**
- Connection cable with one end free, length 3 m, with connector model 9953 **Model 99553-000A-0110030**
- Connection cable, length 3 m
  - for burster desktop instruments **Model 99141-553A-0150030**
  - for model 9235, model 9311 and model 7281 **Model 99209-553A-0110030**
  - for model 7281 with burster TEDS **Model 99229-553A-0110030**
- 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.

