

# Precision Torque Sensor for non-rotating applications

**Model 8625**

Code:	8625 E
Manufacturer:	burster
Delivery:	4 weeks
Warranty:	24 months

CAD data in 3D/2D available on  
**POWERPARTS** by web2CAD  
Info: data sheet 80-CD-ROM-E



- Measurement ranges from  
0 ... 0.005 Nm to 0 ... 5000 Nm
- High accuracy measurement  $\leq 0.1\%$  F.S.
- Standardized output signal
- Extremely compact design
- Factory calibration certificate for right- and/or  
left-handed torque (optional)

## Application

This torque sensor is designed for both static and dynamic measurements on non-rotating parts. It is particularly suitable for torque measurements on, for instance, extremely small electrical actuating drives and micromechanical actuator elements, but also for large reaction torques such as those occurring with extruders. The high accuracy of measurement also makes this sensor ideal for use as a reference in many fields of industrial manufacture, or in laboratory research and development projects. Not containing any rotating parts, it requires no maintenance if properly used.

Other possible applications:

- Test setups for precision mechanics
- Measuring the frictional torque of bearings
- Measuring the torques applied to vehicle control elements
- Measuring the opening torque on screw caps

## Description

The length, weight and volume of the unit have been optimized in such a way that axial forces and bending moments in the measuring range have a minimal effect on the sensor element. Shear strains in the torsion shaft are measured accurately by means of metal foil strain gages connected as a Wheatstone Bridge on the sensor element. Applying a supply voltage generates an electrical output signal that is directly proportional to the applied mechanical torque. The standardization of the sensor output signals means that it is easy to exchange the sensor without having to recalibrate the measuring chain. By means of an amplifier the sensor output signal can be converted, for instance, to a standard signal (0..10V, 0/4..20 mA), or can be sent directly to a PC through a USB interface. Accurate display and evaluation units complement the range of possible applications. The sensors, particularly those with small measuring ranges, must be mounted carefully. It is important that the drive and measuring ends are not reversed during assembly. The measuring shaft should always be cleaned prior to assembly, to ensure that no foreign objects are sticking to it. It is recommended that the sensor is electrically connected and that the output signal is observed at the time of fitting. Vibrations originating in the equipment should be kept away from the sensor. The sensor should only be mounted on the coupling after the parts have been accurately aligned. This should be done without free play or lateral forces.

**8625-E**

## Technical Data

Order code	Measuring range	Dimensions [mm]							Sensitivity [mV/V]	Utility moment % F.S.	Max. utility moment % F.S.	Overload moment % F.S.	Weight [g]
		A	B	C	D	E	F	G					
8625 - 4005	0 ... ± 0.5 Ncm	37	48	5	4g6	5.5	26	14	0.5	200	300	500	120
8625 - 4010	0 ... ± 1 Ncm	37	48	5	4g6	5.5	26	14	0.5	200	300	500	120
8625 - 4020	0 ... ± 2 Ncm	37	48	5	4g6	5.5	26	14	0.5	200	300	500	120
8625 - 4050	0 ... ± 5 Ncm	48	65	7	6g6	8	32	25	0.5	200	300	500	180
8625 - 4100	0 ... ± 10 Ncm	48	85	17	8g6	18	32	25	0.5	200	300	500	240
8625 - 4200	0 ... ± 20 Ncm	48	85	17	8g6	18	32	25	0.8	150	200	300	240
8625 - 4500	0 ... ± 50 Ncm	48	85	17	8g6	18	32	25	0.8	150	200	300	240
8625 - 5001	0 ... ± 1 Nm	48	85	17	8g6	18	32	25	0.8	150	200	300	240
8625 - 5002	0 ... ± 2 Nm	48	85	17	8g6	18	32	25	0.8	150	200	300	240
8625 - 5005	0 ... ± 5 Nm	48	85	17	8g6	18	32	25	0.8	150	200	300	240
8625 - 5010	0 ... ± 10 Nm	48	85	17	10g6	18	32	25	0.8	150	200	300	240
8625 - 5020	0 ... ± 20 Nm	73	111.5	18	18g6	19	51	40	0.8	150	200	300	320
8625 - 5050	0 ... ± 50 Nm	73	147.5	36	18g6	37	51	40	0.8	150	200	300	410
8625 - 5100	0 ... ± 100 Nm	73	147.5	36	18g6	37	51	40	0.8	150	200	300	410
8625 - 5200	0 ... ± 200 Nm	79.5	159.5	38	32g6	40	66	40	0.8	150	200	300	460
8625 - 5500	0 ... ± 500 Nm	79.5	159.5	38	32g6	40	66	40	0.8	150	200	300	460
8625 - 6001	0 ... ± 1000 Nm	107	262	58	50g6	66	97	53.5	0.8	150	200	300	1200
8625 - 6002	0 ... ± 2000 Nm	135	377	110	70g6	126	112	53.5	0.8	150	200	300	2800
8625 - 6005	0 ... ± 5000 Nm	135	377	110	70g6	126	112	53.5	0.8	150	200	300	2800

### Electrical

Bridge resistance (strain gage full bridge): 1000 Ω  
 Power supply: 2 ... 12 V recommended 10 V

### Environmental conditions

Operating temperature range: - 15 °C ... + 55 °C  
 Nominal temperature of operation range: - 5 °C ... + 45 °C  
 Sensitivity of temperature effects:  
 at zero: ± 0.01 % F.S./K  
 on span: ± 0.003 % F.S./K

### Mechanical

Non-linearity: ≤ ± 0.1 % F.S.  
 Repeatability: ≤ ± 0.02 % F.S.  
 Dynamic overload safe: up to 70 % from nominal value  
 Twist angle by nominal load: approx. 0.2 °  
 Material: steel, 1.2826 res.1.2738  
 Degree of protection (acc. EN 60529): IP 50

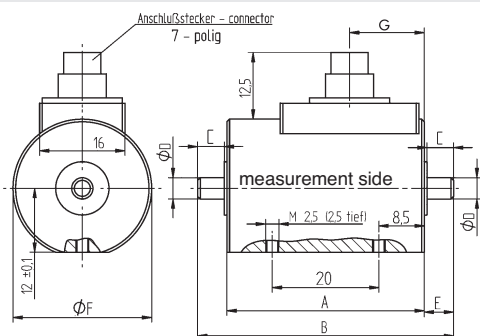
### Electrical connection

Measurement range ≤ 10 Nm: 7-pins plug connection (model 9900-V594 mating connector, included on sensor delivery)  
 Measurement range ≥ 20 Nm: 6-pins plug connection (mating connector model 9953, included on sensor delivery)

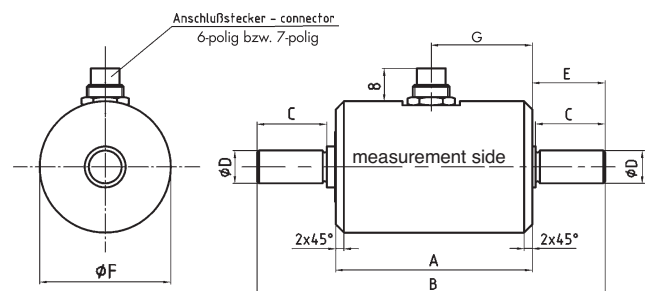
### Pins assignment

	6-pole plug	7-pole plug
Supply -	1	1
Supply +	2	2
Schild	3 (open)	3 (open)
Signal output +	4	4
Signal GND	5	5
NC	-	7

#### Model 8625 measurement ranges up to 0 ... 0.02 Nm



#### Model 8625 measurement ranges from 0 ... 0.05 Nm and above



Sensor CAD drawing can be imported in 3D or 2D version from CD-ROM or downloaded from the Internet. For more information on **powerPARTS** by web2CAD please refer to the introduction of product section 8 in the catalog.

### Order Information

Torque sensor, range ± 100 Nm **Model 8625-5100**

### Accessories

**For sensor with 6-pins plug**  
 Mating connector, 6-pole **Model 9953**

Mating connector, 6-pole, 90°-angle, connecting cable, length 3 m, **Model 9900-V589**

On one end mating connector 9953 connection cable, length 3 m **Model 99553-000A-0110030**

For burster desktop instruments **Model 99141-553A-0150030**

For model 9235 und model 9310 **Model 99209-553A-0110030**

For model 9162 panel version **Model 99553-564B-0100030**

### For sensors with 7 pins plug

Mating connector, 7-pole **Model 9900-V594**

Mating connector, 7-pole, 90°-angle **Model 9900-V596**

Connection cable, length 3 m, on one end mating connector 9900-V594, other end free **Model 99594-000A-0150030**

Connecting cable, length 3 m, for burster desktop instruments **Model 99141-594A-0150030**

### Special Calibration (WKS)

Special calibration for clockwise or/and counter clockwise direction torque, 20 % steps of range up and down.