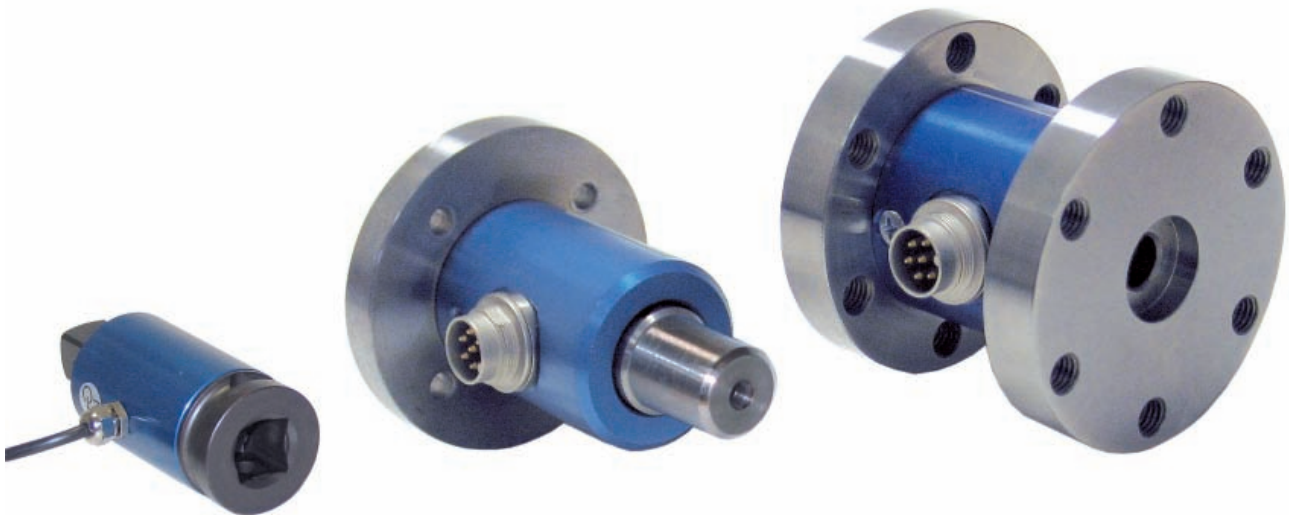


# Torque Sensor for non-rotary applications

Models 8627, 8628 and 8632

Code:	8627 E
Manufacturer:	burster
Delivery:	4 weeks
Warranty:	24 months



- Measurement range from 0 ...2 Nm to 0 ... 5000 Nm
- Good accuracy  $\leq 0,2\%$  f.S.
- Reliable and durable
- Simple handling and assembly
- Output signal standardized
- Special equipment on request

## Application

The present torque sensors are qualified for static and dynamic measurements on non-rotary applications.

Further the measurement of reaction torques on rotating machine parts is possible. Especially the torque sensors with flanges are preferred. They are mounted between motor and stator, as i.e. in agitator drives. This enables a maintenance-free torque measurement. Another range of application is the testing of screwdriving units and torque wrenches.

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 breakage moments on screw caps

## Beschreibung

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 influence the measuring element only little.

Four metal film strain gauges are mounted on the measuring element and connected to form a full bridge; shear stresses on the torque shaft are accurately seized.

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

### Electrical

Resistor bridge (Full bridge): foil strain gauge 350  $\Omega$ , nominal\*

\* Deviations from the indicated values are possible.

Power supply: 2 ... 12 V  
recommended 10 V

Nominal value: standard, 1 mV/V  
model 8627-5010: 0.05mV/V

### Environmental conditions

Operating temperature range: - 15 °C ... + 55 °C

Nominal temperature of operating range: - 5 °C ... + 45 °C

Sensitivity of temperature effect: at zero:  $\pm 0.01$  % f.S./K  
on span:  $\pm 0.003$  % f.S./K

### Mechanical

Linearity: model 8627  $\pm 0.1$  % f.S.  
model 8628/8632  $\pm 0.2$  % f.S.

Hysteresis: model 8627  $\pm 0.1$  % f.S.  
model 8628/8632  $\pm 0.2$  % f.S.

Repeatability:  $\pm 0.1$  % f.S.

Utility moment: 130 % of nominal value

Max utility moment (static): 150 % of nominal value

Overload moment (static): > 300 % of nominal value

Dynamic load: recommended  $\leq 70$  % of nominal value

Twist angle by nominal load: approx 0.2 °

Material: steel, 1.2826 res. 1.2738

Degree of protection (acc. to EN 60529): IP 50

### Pins Assignment

	6-pole plug	7-pole plug
Supply -	1	1
Supply +	2	2
Shield	3 (offen)	3 (offen)
Signal output +	4	4
Signal GND	5	5
100 % control (option)	6	6
NC	-	7

## Torque sensor for static and dynamic applications, non-rotary, Model 8627

### Technical Data:

Order Code	Measurement range	Dimensions [mm]									Number of boreholes T	P
		$\phi A$	$\phi B$	$\phi D$	F	G	L	$\phi T$	$\phi Q$			
8627-5010	0 ... $\pm$ 10 Nm	20 <sup>H7</sup>	10	70	12	M8	65	58	45	6x60°	33	
8627-5025	0 ... $\pm$ 25 Nm	20 <sup>H7</sup>	10	70	12	M8	65	58	45	6x60°	33	
8627-5050	0 ... $\pm$ 50 Nm	20 <sup>H7</sup>	10	70	12	M8	65	58	45	6x60°	33	
8627-5100	0 ... $\pm$ 100 Nm	20 <sup>H7</sup>	10	70	12	M8	65	58	45	6x60°	33	
8627-5200	0 ... $\pm$ 200 Nm	20 <sup>H7</sup>	10	70	12	M8	65	58	45	6x60°	33	
8627-5500	0 ... $\pm$ 500 Nm	20 <sup>H7</sup>	18	100	15	M10	80	82	60	8x45°	39.5	
8627-6001	0 ... $\pm$ 1000 Nm	20 <sup>H7</sup>	18	100	15	M10	80	82	60	8x45°	39.5	
8627-6002	0 ... $\pm$ 2000 Nm	75 <sup>H7</sup>	20	130	20	M12	100	100	80	12x30°	45	
8627-6005	0 ... $\pm$ 5000 Nm	75 <sup>H7</sup>	-	130	20	M12	100	100	80	12x30°	45	

Higher measuring ranges upon request

Mechanical connection: both ends with flange

Electrical connections: 6-pins plug connection

Mating connector (cable coupling), 6-pole: model 9953  
(included in scope of delivery)

Nominal value: measurement range from 0 ... 10 Nm 0.5 mV/V  
measurement range from 0 ... 20 Nm 1.0 mV/V

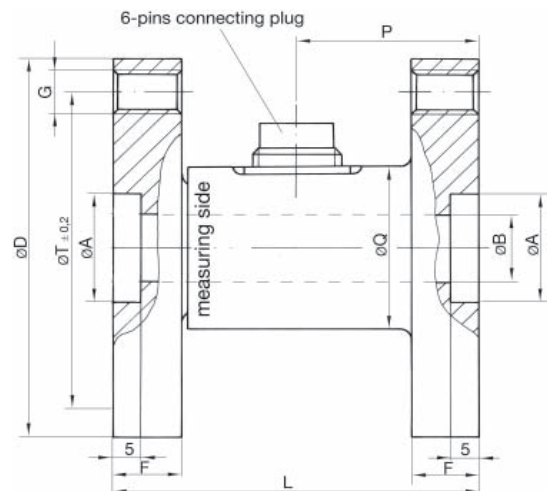
### Order Information

Torque Sensor, non-rotary  
measurement  $\pm 100$  Nm

**Model 8627-5100**

### Options

Linearity: 0.05 % F.S. **-V501**



## Torque sensor for static and dynamic applications, non-rotary, Model 8628

### Technical Data:

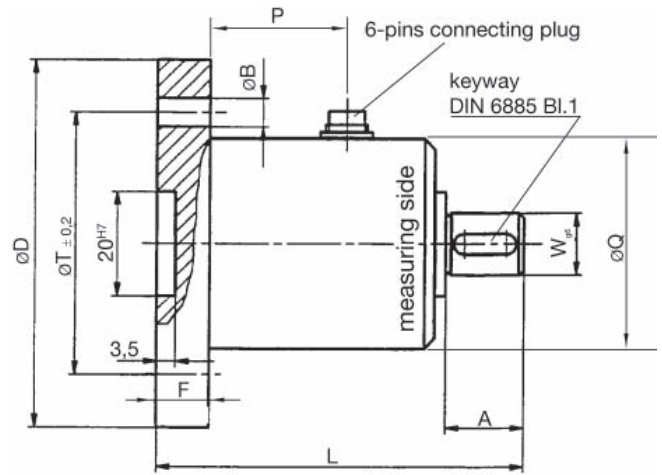
Order Code	Measurement range	Dimensions [ mm ]									Number of boreholes T	P	Weight [Kg]
		A	$\phi B$	$\phi D$	$\phi F$	L	$\phi T$	$\phi W$	$\phi Q$				
8628-5005	0 ... $\pm$ 5 Nm	15	5.5	70	10	70	50	12	40	4x90°	36	0.5	
8628-5010	0 ... $\pm$ 10 Nm	15	5.5	70	10	70	50	12	40	4x90°	36	0.5	
8628-5025	0 ... $\pm$ 25 Nm	15	5.5	70	10	70	50	12	40	4x90°	36	0.6	
8628-5050	0 ... $\pm$ 50 Nm	28	6.6	80	12	90	60	18	45	4x90°	41	0.8	
8628-5100	0 ... $\pm$ 100 Nm	28	6.6	80	12	90	60	18	45	4x90°	41	0.8	
8628-5200	0 ... $\pm$ 200 Nm	50	9	100	15	120	80	30	58	6x60°	43	1.2	
8628-5500	0 ... $\pm$ 500 Nm	50	9	100	15	120	80	30	58	6x60°	43	1.2	
8628-6001	0 ... $\pm$ 1000 Nm	70	11	120	15	140	100	40	65	6x60°	41	1.8	

Mechanical connection: one end with flange, and one end with keyway shaft end acc. to DIN 6885, page 1 (keyway included in scope of delivery)

Electrical connections: 6-pins plug connection

Mating connector (cable coupling), 6-pole model 9953 (included in scope of delivery)

Nominal value: measurement range from 0 ... 10 Nm 0.5 mV/V  
measurement range from 0 ... 20 Nm 1.0 mV/V



**Order Information**

Torque sensor for non-rotary applications one end with flange, one end with shaft measurement range ± 2000 Nm

**Model 8628-6002**

**Options**

- External square instead of shaft **-V301**
- Internal square instead of shaft **-V302**
- Internal hexagon instead of shaft **-V302**
- Linearity error ± 0.1 % f.S. **-V503**

**Torque sensor for static and dynamic applications, non-rotary, Model 8632**

**Technical Data:**

Order Code	Measuring range	Dimensions [mm]			Square END	P	Q	R	Weight [Kg]
		A	øD	L					
8632-5002	0 ... ± 2 Nm	7.2	15	64	1/4"	32	10	10	0.1
8632-5005	0 ... ± 5 Nm	7.2	15	64	1/4"	32	10	10	0.1
8632-5012	0 ... ± 12 Nm	7.2	15	64	1/4"	32	10	10	0.1
8632-5025	0 ... ± 25 Nm	10.4	30	71	3/8"	34.5	15	10	0.2
8632-5063	0 ... ± 63 Nm	10.4	30	71	3/8"	34.5	15	10	0.2
8632-5100	0 ... ± 100 Nm	15.1	30	76	1/2"	35	15	10	0.25
8632-5160	0 ... ± 160 Nm	15.1	30	76	1/2"	35	15	10	0.25
8632-5250	0 ... ± 250 Nm	22.6	49	100	3/4"	46	15	10	0.8
8632-5500	0 ... ± 500 Nm	22.6	49	100	3/4"	46	15	10	0.8
8632-6001	0 ... ± 1000 Nm	27.4	49	132	1"	60	15	10	1.6

Higher measuring ranges upon request

Mechanical connections: external square and square drive acc. to DIN 3121 i.e. for the linkage to screwdriver tools

Electrical connections: shielded PVC cable, 3 m  
PVC cable is not suitable for too many bendings trailing capable cable upon request

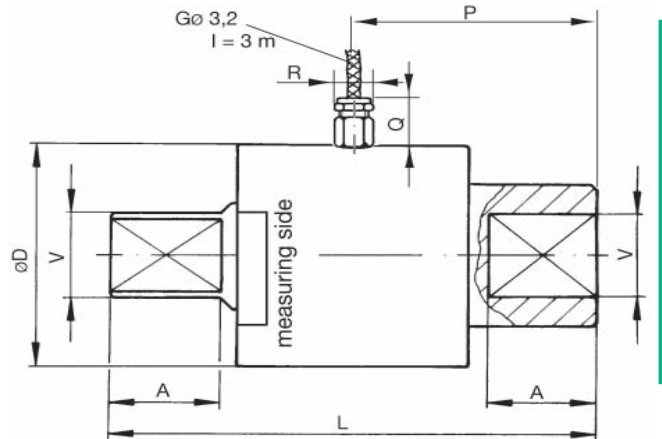
**Order Information**

Torque sensor for non-rotary applications, both sides with square ends measurement range ± 12 Nm

**Model 8632-5012**

**Options**

- Miniature plug instead of integrated cable, starting from measurement range 0 ... 25 Nm **-V201**
- Mating connector, 7-pole, model 9900-V594, (included in scope of delivery) **-V503**
- Linearity ± 0.1 % F.S. **-V503**



**Accessories for all models**

**for sensors with 6-pins plug**

- Mating connector (cable coupling), 6-pole **Model 9953**
- Mating connector, 6-pole 90°- phase shift **Model 9900-V589**
- Connecting cable with one end free, length 3 m **Model 99553-000A-0110030**
- Connection cable, length 3 m
  - for burster desktop instruments **Model 99141-553A-0150030**
  - for model 9235 and model 9310 **Model 99209-553A-0110030**
  - for model 9162 desk housing version **Model 99553-564B-0100030**

**for sensors with 7-pins plug**

- Mating connector (cable coupling), 7-pole **Model 9900-V594**
- Mating connector, 7-pole 90°- phase shift **Model 9900-V596**
- Connection cable with one end free, length 3 m, with 9900-V594 **Model 99594-000A-0150030**
- Connection cable, length 3 m,
  - for burster desktop instruments **Model 99141-594A-0150030**

**for model 8632 with integrated cable (standard)**

- Mating connector
  - 12-pole for burster desktop instruments **Model 9941**
  - 9-pole for model 9235 and 9310 **Model 9900-V209**
- Assembly **Model 99004**
- Amplifiers, process indicators, digital displays **see section 8 of this catalog.**

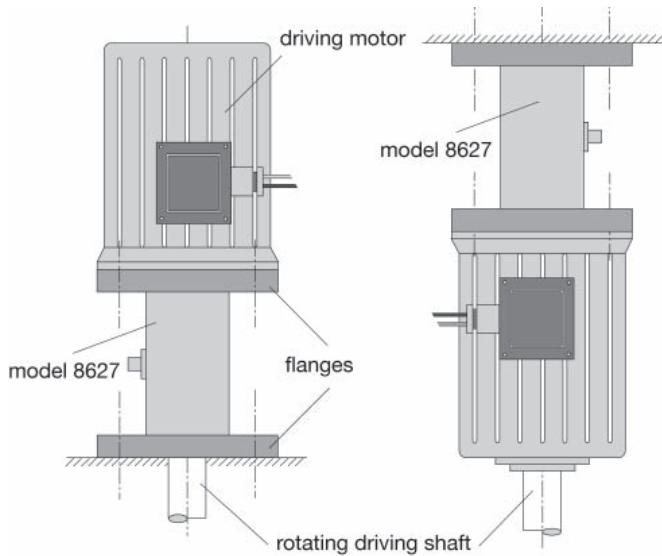
**Special Calibration Certificate (WKS)**

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

**8627-E**

## Applications

### Control of Engine Torque



**Model 8627**, with its two flanges on both ends, enables the user to seize reaction torques without any problems and maintenance-free.

The arrangement shows on the left is especially suitable for the measurement of torques on agitators.

### 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.

Burster here presents its **torque sensor model 8628** on request with an external and internal square. This sensor offers a very high linearity of 0.2 % f.S., optionally also 0.1 % f.S. are available. Upon request the user further obtains a mating sensor carrier, in order to avoid pull-out torques in advance.

If you use model 8628 along with our Smart Sensor Interface, you can carry out the calibration with a PC and our PC software DIGICAL or with a calibrator like i.e. model 4423 that further helps you to document and archive all your collected data accordingly.

