High Precision Flange Torque Sensor

rotating, contactless

MODEL **8670** NEW

Preliminary data sheet

Highlights

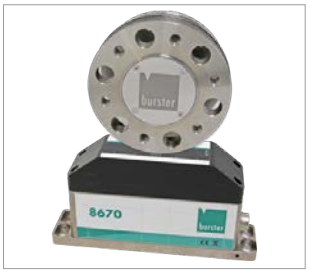
- Measuring ranges from 0 ... 100 N·m up to 0 ... 5000 N·m
- Linearity error ≤ 0.05 % F.S.
- Flange connection with DIN hole pattern
- Output signal 0 ... ±10 V

Options

- Frequency output or CAN

Applications

- Test station construction
- Quality monitoring of electric motors and gearboxes
- Research & development
- Machinery and plant engineering



Rotor incl. Stator

Evaluation electronics

Stator

Product description

The rotating flange torque sensor model 8670 consists of the sensor (rotor), the receiver (stator) and the evaluation electronics.

The torque is detected by the torsion of the rotor with the strain gage principle and transmitted completely contactless by radio technology. By omitting a bearing, the sensor is maintenance-free, the signals are digitized directly on the shaft and made available by the evaluation electronics as a voltage signal, as a frequency or as CAN signals. The direction of rotation can be seen by the potential of the output voltage, clockwise corresponds to positive output voltage, anticlockwise the voltage level is negative.

The hole pattern corresponds to the DIN standard and is compatible with already existing systems.

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Technical Data

8670	–	5100	5200	5500	6001	6002	6003	6004	6005
Measuring range calibrated in N·m from 0 ...		100	200	500	1000	2000	3000	4000	5000
Accuracy									
Relative non-linearity, incl. hysteresis		0.05 % F.S.							
Tolerance of sensitivity		0.1 % F.S.							
Temperature effect on zero output		±0.03 % F.S./10 K							
Temperature effect on nominal sensitivity		±0.03 % F.S./10 K							
Electrical values									
Rated supply voltage range		24 V DC ±1 V							
DC power consumption		< 24 W							
Output voltage at pos. rated torque		5 V/10 V (adjustable)							
Frequency at pos. nominal torque		15/80/90/360 kHz (adjustable)							
Environmental conditions									
Range of nominal temperature rotor/stator		+10 °C ... +80 °C							
Range of operating temperature rotor/stator		-20 °C ... +80 °C							
Mechanical values									
Max. operation torque		300 % of nominal torque							
Breakaway torque		600 % of nominal torque							
Maximum limit axial load	[kN]	13		17	26	46	57	83	89
Maximum limit radial load	[kN]	3		4	7	11	15	20	23
Max. rotary speed	[min_{-1}]	21000			20000	16000		15000	
Spring constant	[kN.m/rad]	152		266	647	1461	1988	3317	3894
Mass moment of inertia rotor	[kg*m^2]	0.0017			0.0034	0.0085		0.0188	0.0189
Installation									
Radial distance rotor/stator	[mm]	3 (+1/-2)							
Axial distance rotor/stator	[mm]	7 (±1)							
Other									
Weight rotor	[kg]	1.2		1.3	1.7	2.9		4.4	4.5
Weight stator	[kg]	0.6							

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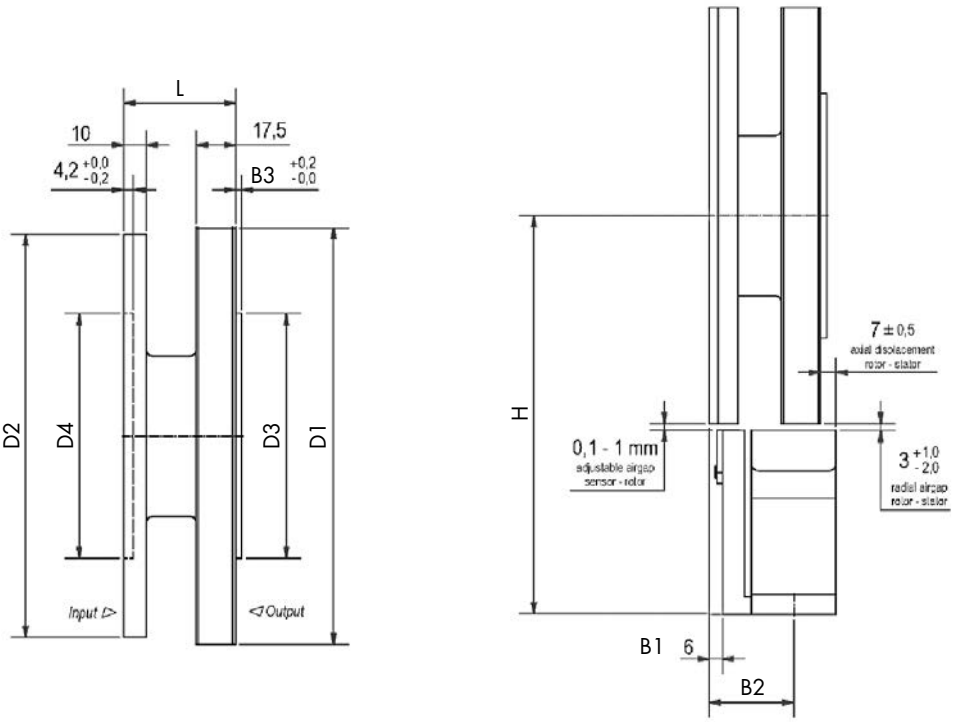
Dimensional drawing



8670	–	5100	5200	5500	6001	6002	6003	6004	6005
Measuring range from 0 ...		100	200	500	1000	2000	3000	4000	5000
Geometry									
D1	[mm]	107			128	158		181	
D2	[mm]	101			122	152		187	
D3	[mm]	57 g5			75 g5	90 g5		110 g5	
D4	[mm]	57 H6			75 H6	90 h6		110 H6	
H	[mm]	139			149.5	164.5		179	
B1	[mm]	14			17	18		19	
B2	[mm]	33			55	56		38	
B3	[mm]	2				2.5		2.8	
Bolt circle Ø	[mm]	84		101.5		130		155.5	
L	[mm]	45			49			50	
Balancing grade DIN ISO 1949		2.5							

For detailed dimensional data, please find the CAD data of the sensor on our website www.burster.com

Calibration

Test and calibration certificate	
Supplied with the sensor	Amongst other data, includes figures for zero point, full-scale output and calibration offset
Standard factory calibration certificate for torque sensors or measurement chains (WKS)	
Optionally available	Special calibration for clockwise or/and counter clockwise direction torque, in 20 % steps of range up and down.
Special factory calibration certificate for torque sensors or measurement chains (WKS)	
On request	We are happy to calibrate sensors and measurement chains to the customer's specification.
Calibration certificate with accreditation symbol for torque sensor 8670	
Optionally available	Calibration is performed on the basis of the accreditation of the calibration laboratory D-K-15141-01-00, for the scope of accreditation listed in the annex to the certificate. The traceability to national standards as well as a wide international recognition (DAkkS as signatory of the Multilateral Agreements of EA, ILAC and IAF) are thus guaranteed. Calibration services that cannot be covered by the calibration laboratory D-K-15141 are performed by an external calibration laboratory that has DAkkS accreditation for the required scope of services.

Order Code

Measuring range	Code			
0 ... 100 N·m	5	1	0	0
0 ... 200 N·m	5	2	0	0
0 ... 500 N·m	5	5	0	0
0 ... 1000 N·m	6	0	0	1
0 ... 2000 N·m	6	0	0	2
0 ... 3000 N·m	6	0	0	3
0 ... 4000 N·m	6	0	0	4
0 ... 5000 N·m	6	0	0	5

											Standard				
											0	0	0	3	0
8	**6**	**7**	**0**	**–**	**X**	**X**	**X**	**X**	**-**	**V**	**0**	**0**	**0**	**3**	**0**

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