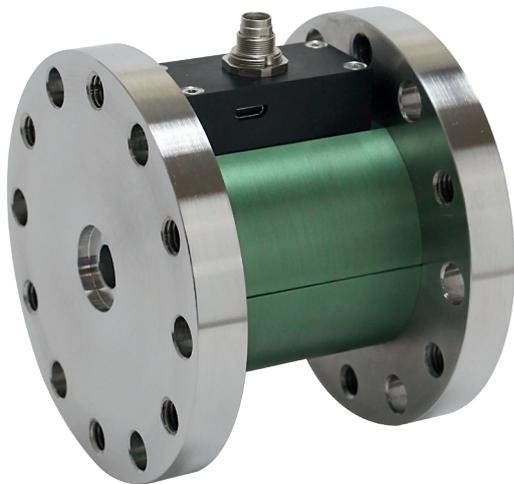


High Precision Torque Sensor for non-rotating applications

MODEL 8631

NEW



burster
TEDS



Highlights

- Measuring ranges from 0 ... 5 N·m up to 0 ... 200 N·m
- Linearity error from $\leq 0,1$ % F.S.
- Standardized output signal
- Tare function, filter and average values configurable
- Extremely high, reliable axial load

Options

- Output signal ± 10 V / USB
- With burster TEDS
- Dual-range model

Applications

- Test setups for precision mechanics
- Measuring reaction torques for motors
- Measuring car-seat adjustment torques
- Measuring operating torques for door release mechanisms

Description

This high-precision torque sensor is designed for both static and dynamic measurements on non-rotating parts. The 10mm diameter through-hole can be used to feed parts such as cables or Bowden cables through the sensor.

The mounting flanges contain threaded holes and through-holes so that the sensor can be fitted at either end. With no rotating parts, this sensor needs no maintenance when used correctly.

The modular design of this strain-gage sensor allows precise configuration for the desired application.

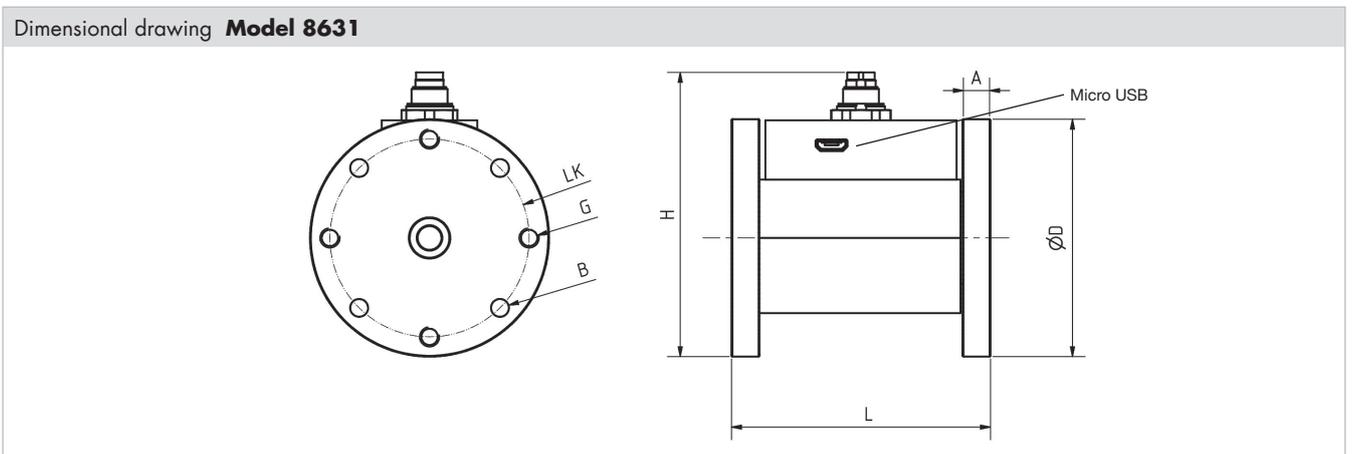
With the integrated amplifier option, the sensor directly supplies a voltage signal of 0 ... ± 10 V that is proportional to the torque. The sensor can be configured via the micro-USB interface, providing access to, for example, a filter frequency setting, averaging, and a tare function. With the USB option, in addition to the voltage output, the measurement function is available via USB as well. The sensor comes with the DigiVision software for performing measurements and data archiving, with drivers additionally available e.g. for LabVIEW. Integration into custom software is possible via DLL. Examples can be found on our website www.burster.com

The burster TEDS option (electronic data sheet, memory chip with sensor-specific data) allows rapid configuration of compatible evaluation units (instrumentation amplifier, indicator, ...).

Technical Data

8631	-	5005- VXXXXX	5010- VXXXXX	5020- VXXXXX	5050- VXXXXX	5100- VXXXXX	5200- VXXXXX
Measuring range calibrated in N·m from 0 ...		±5	±10	±20	±50	±100	±200
Higher measuring ranges on request.							
Accuracy							
Relative non-linearity		0.1 % F.S.					
Relative hysteresis		0.1 % F.S.					
Maximum axial load	[N]	1000	1200	1400	2500	4500	7000
Maximum radial load	[N]	70	100	120	250	500	750
Spring constant	[N·m/rad]	677	1587	5735	16142	31133	13696
Mass moment of inertia measuring side	[10 ⁻⁶ kg·m ²]	37	38	164	168	465	476
Electrical values without amplifier / USB							
Sensitivity		1 mV/V					
Tolerance of sensitivity		0.1 % F.S.					
Bridge resistance (full bridge)		1000 Ω					
Excitation voltage		5 V					
Max. excitation voltage		10 V					
Environmental conditions without amplifier / USB							
Range of operating and nominal temperature		-20 °C ... +80 °C					
Sensitivity of temperature effects		at zero 0.015 % F.S./K 0.010 % F.S./K					
Electrical values with amplifier / USB							
Rated supply voltage range		5 ... 30 V DC (or 5 V via USB)					
DC power consumption		ca. 1 W					
Output voltage at ± rated torque		±10 V					
Output resistance		<500 Ω					
Insulation resistance		zero (binding capability)					
-3 dB cut-off frequency		5000 Hz					
Ripple		<50 mV					
Calibration signal		10.00 V DC					
Environmental conditions with amplifier / USB							
Range of operating and nominal temperature		-20 °C ... +60 °C					
Sensitivity of temperature effects:		at zero 0.015 % F.S./K on final value 0.010 % F.S./K					
Mechanical values							
Dynamic overload safe		up to 70 % from nominal value					
Max. operation torque		150 % of nominal torque					
Breakaway torque		300 % of nominal torque					
Alternating load		70 % of nominal torque					
Other		5005	5010	5020	5050	5100	5200
Material:		Housing: made of anodized aluminium Shaft: steel shell 1.4542					
Protection class		acc. EN 60529, IP40					
Weight	[g]	400	930	950	1700	1750	

Geometrie							
8631	-	5005- VXXXXX	5010- VXXXXX	5020- VXXXXX	5050- VXXXXX	5100- VXXXXX	5200- VXXXXX
L	[mm]	65		70		85	
D	[mm]	60		80		100	
A	[mm]	7		10		12	
H	[mm]	72		86		105	
LK	[mm]	50		70		85	
∅ B	[mm]	4.5 (4 x 90°)		5.5 (6 x 60°)		9.0 (6 x 60°)	
G	[mm]	4 x M5		6 x M5		6 x M8	
Mounting							
Mounting instructions		Do not exceed the permitted axial and radial forces during fitting and operation (see technical data). Please refer to our operating instructions for detailed information www.burster.com .					



For detailed dimensions, you can find CAD data for the sensor on our website www.burster.com.

Electrical values

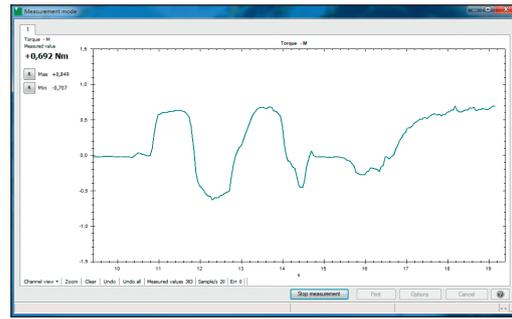
7-pin miniature connector, additionally micro-USB interface for configuration/measurement (Option, USB connection cable included)

Wiring Code depends on the options selected	
Pin	Assignment
1	Supply -
2	Supply +
3	Shield
4	Signal +
5	Signal -
6	TEDS GND (option) / calibration signal
7	TEDS I/O (option) / NC

DigiVision configuration and analysis software

Features

- Can be used to actuate tare function, with value stored in sensor
- Configuration options for averaging and filters; value stored in sensor
- Intuitive user interface
- Automatic sensor identification
- Sensor calibration data readout



DigiVision Light PC software

DigiVision configuration and analysis software max. 200 measured value/s for one sensor (freely available on our website)

DigiVision Standard PC software

DigiVision configuration and analysis software up to 16 channels Model 8630-P100

PC-Software DigiVision Professional

DigiVision configuration and analysis software including maths functions; up to 32 Model 8630-P200

USB measurement option

- Numerical & graphical display and measurement of the physical torque value
- Practical start and stop trigger functions
- 4 limits can be configured for each measurement channel
- MIN/MAX value acquisition
- Automatic scaling
- Measurement reports can be saved as Excel or PDF file
- Archive viewer for displaying sets of curves
- X Multichannel measurements, even with different sensors (e.g. 9206, 8631, 8661) available with standard version

Accessories

Order code	
9900-V594	Mating connection 7 pin
9900-V596	Mating connection 90°-angle
99594-000A-0150030	Connecting cable, length 3 m, other end free
99596-000A-0150030	Connecting cable, length 3 m, plug with 90°-angle, other end free
99141-594A-0150030	Connecting cable for burster desktop instruments with 12 pin socket, 3 m
99209-586C-0510030	For model 9235, model 7281 and model 9311
9900-K358	Micro USB cable, length 1.8 m
8631-P100	DigiVision Standard configuration and analysis software; up to 16 channels
8631-P200	DigiVision Professional with additional configurable maths channel; up to 32 channels
	DigiVision Light configuration and analysis software, max. 200 measured value/s for one sensor (freely available on our website)

Calibration

Manufacturer Calibration Certificate (WKS)

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

DAkKS Calibration Certificate

The DAkKS calibration certificate (in accordance with German Calibration Service DKD-R 6-1 guidelines, clockwise and/or anticlockwise torque) includes at least three measurement cycles in steps of 10% of the measurement range, rising and falling.

Order Code

Measuring Range		Code			
0 ... ±5 Nm		5	0	0	5
0 ... ±10 Nm		5	0	1	0
0 ... ±20 Nm		5	0	2	0
0 ... ±50 Nm		5	0	5	0
0 ... ±100 Nm		5	1	0	0
0 ... ±200 Nm		5	2	0	0

											Standard				
											0	0	0	3	0
8	6	3	1	-	X	X	X	X	-	V		0		3	0

Standard sensor		
■ Standard sensor, one measuring range		0
■ 2 range sensor 1:100		1
■ 2 range sensor 1:5		2
■ 2 range sensor 1:4		3

Output signals		
■ Output voltage 10 V incl. configuration USB		0
■ Output voltage 10 V incl. USB configuring and measuring USB		1
■ Output signal standardized, mV/V		3
■ Output signal standardized, mV/V with TEDS		4