

Reactive Torque Sensor D-2431 with Nominal Torque from 0.1 ... 20 N·m



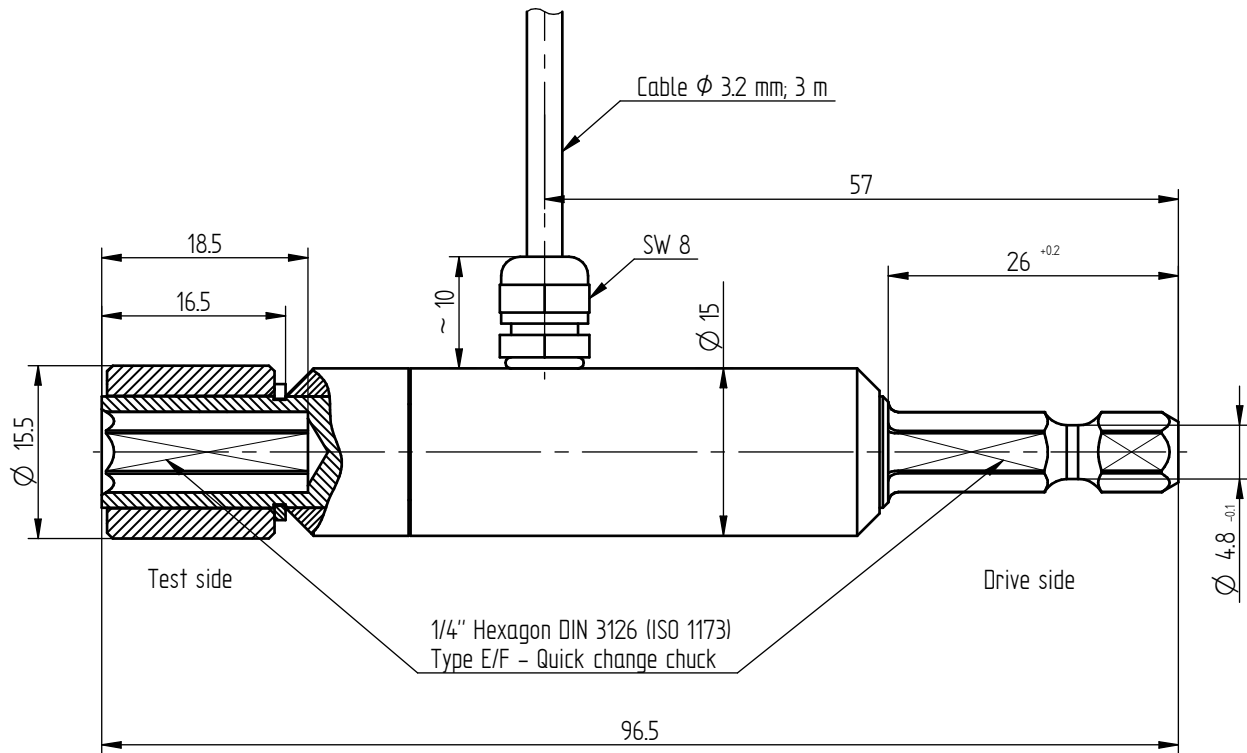
Performance Features

- Torque sensor for testing of screwing tools
- 1/4" hexagon socket with quick change chuck
- 1/4" external hexagon
- Very short axial length
- High torsional stiffness
- Simple handling and assembly
- Special versions on request

Application

- Assembly technology
- Process measuring and control technology
- Automotive industry
- Measuring and control devices
- Tool engineering
- Special mechanical engineering

Dimensions of D-2431 in mm



Nominal Torque [N·m]	Weight [kg]
0.1/0.2/0.5/1/2/5	0.1
10/20	0.2

Connection Assignment

Electrical Connection		
Excitation (-)	green	●
Excitation (+)	brown	●
Signal (+)	yellow	●
Signal (-)	white	○
Control signal (option)	grey	●
Shield	shield	⊕

Technical Data acc. to VDI/VDE/DKD 2639

Reactive Torque Sensor D-2431

Nominal torque M_{nom}	N·m	0.1 ... 20
Accuracy class	% M_{nom}	0.2
Relative repeatability error in unchanged mounting position b'	% M_{nom}	±0.02
Rated characteristic value C_{nom}	mV/V	1 [≥ 10 N·m; 2] ±0.2%
Bridge resistance R_{Br}	Ω	1000
Operating range of excitation voltage	VDC	2 ... 12
Electrical connection		3 m with free strands
Reference temperature T_{ref}	°C	23
Rated temperature range	°C	-5 ... 45
Operating temperature range	°C	-15 ... 55
Temperature effect on zero signal TK_0	% $M_{nom}/10$ K	±0.2
Temperature effect on characteristic value TK_C	% $M_{nom}/10$ K	±0.1
Maximum operating torque M_G (static)	% M_{nom}	150
Torque limit M_{max} (static)	% M_{nom}	200
Breaking torque M_B (static)	% M_{nom}	>300
Permissible oscillation stress when subjected to torque M_{df}	% M_{nom}	70 (peak-to-peak)
Level of protection		IP50

Article-No.	Nominal Torque [N·m]	Springrate [N·m/rad]	Mass Moment of Inertia [kg·m ²]		Axial Force Limit [N]	Lateral Force Limit [N]
			Drive Side	Test Side		
114378	0.1	1.8E+01	6.7E-07	5.7E-07	43	0.6
108230	0.2	1.8E+01	6.7E-07	5.7E-07	43	0.6
108229	0.5	1.1E+02	6.7E-07	5.7E-07	95	1.2
108228	1	1.1E+02	6.7E-07	5.7E-07	380	3.7
106388	2	1.9E+02	6.8E-07	5.7E-07	380	3.7
106389	5	3.7E+02	6.9E-07	5.8E-07	700	9.5
106390	10	3.7E+02	6.9E-07	5.8E-07	1150	19
106391	20	4.8E+02	7.1E-07	6.0E-07	1150	19

Options

Article-No.	Description	
100218	Control signal	100 % M_{nom}
42828	Extended temperature range	-30 °C...100 °C
42829	Extended temperature range	-30 °C...120 °C

Calibrations

Article-No.	Description	
400676	Linearity diagram in accordance to factory standard	25 % steps
400664	Linearity diagram in accordance to factory standard	10% steps
400961	Proprietary calibration acc. to VDI/VDE 2646	3 steps
400700	Proprietary calibration acc. to VDI/VDE 2646	5 steps
400688	Proprietary calibration acc. to VDI/VDE 2646	8 steps
	DAkKS-Calibration/Standard on request	

Accessories

Electrical Connection

Article-No.	Description
10323	Cable connector KS6 (6-pin series 581) incl. sensor mounting
10320	Cable connector KSSH15 (15-pin) incl. sensor mounting
43418	Input connector ZA9612FS (ALMEMO) incl. sensor mounting and connector calibration
49205	Input connector ZKD712FS (ALMEMO 202) incl. sensor mounting and connector calibration

Amplifiers

Examples of suitable amplifiers for the torque sensor D-2431:



Further suitable amplifiers you can find on our homepage under <https://www.lorenz-messtechnik.de/english/products/>.