

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



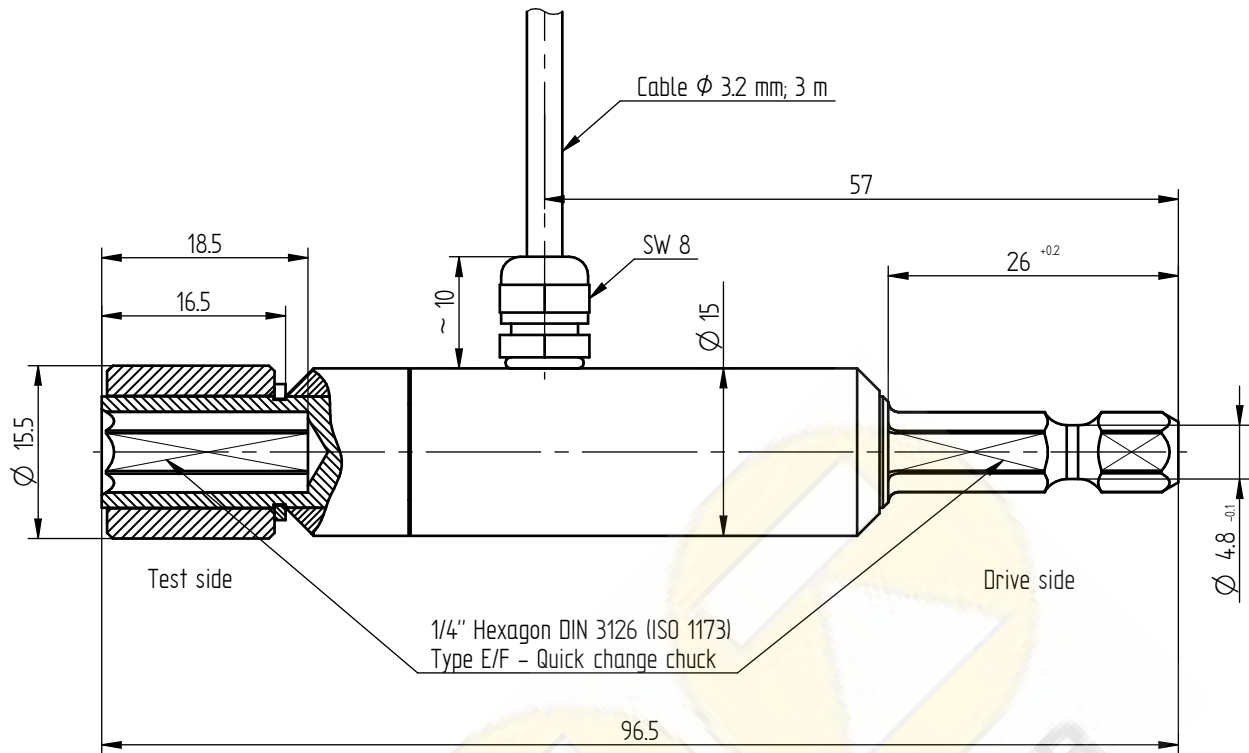
### Performance Features

- 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 [ $\geq 10$ N·m; 2] ±0.2%
Bridge resistance $R_{Br}$	$\Omega$	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 <sup>2</sup> ]		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:

LCV	SI-USB	GM 40	GM 80	GM 80-PA
				