Lorenz® messtechnik gmbh

Reactive Torque Sensor DV-14 with Rated Torque from 1 ... 5000 N·m

Data sheet

TEDS

Performance Features

- Torque sensor for testing of screwing tools
- TEDS (Transducer Electronic Data Sheet) Standard IEEE 1451.4 (optional)
- Standard male square and female square drive
- 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

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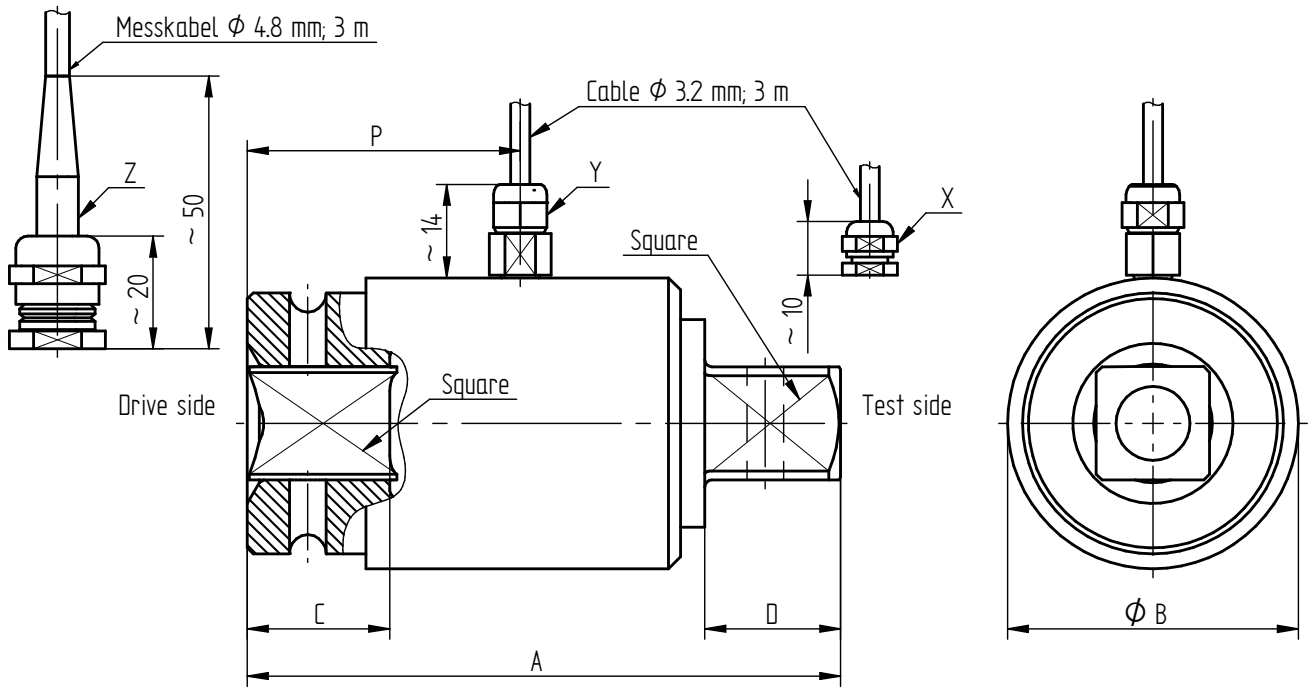
Dimensions in mm



Rated Torque [N·m]	Square	Dimensions [mm]					Cable Connection			Weight [kg]
		A	ØB	C	D	P	X	Y	Z	
1/2/5/12	1/4“	64	15	8	7.2	22.7	X	-	-	0.1
25/63	3/8“	71	30	12.2	10.4	34.5	-	X	-	0.2
100/160/200	1/2“	76	30	15	15.1	35	-	X	-	0.3
500	3/4“	100	49	24	22.9	46	-	X	-	0.8
1000	1“	132	49	27	27.4	60	-	X	-	1.3
2000	1 1/2“	250	100	41.5	39	120	-	-	X	6.8
5000	1 1/2“	250	100	41.5	39	120	-	-	X	7.2

Connection Assignment

Electrical Connection		
Excitation (-)	Green	
Excitation (+)	Brown	
Signal (+)	Yellow	
Signal (-)	White	
Control signal or TEDS (option)	Gray	
Shield	Shielding	

Technical Data acc. to VDI/VDE/DKD 2639

Reactive Torque Sensor DV-14		
Rated torque $\mathbf{M_{nom}}$	N·m	1 ... 5000
Accuracy class	% M_{nom}	0.2 (optional 0.1)
Relative repeatability error in unchanged mounting position **b'**	% M_{nom}	±0.02
Rated characteristic value $\mathbf{C_{nom}}$	mV/V	1 [1 N·m; 0.5] ±0.2%
Bridge resistance $\mathbf{R_{Br}}$	Ω	350
Rated range of excitation voltage	VDC	2 ... 12
Electrical connection		3 m with free strands
Reference temperature $\mathbf{T_{ref}}$	°C	23
Rated temperature range	°C	-5 ... 45
Operating temperature range	°C	-15 ... 55
Storage temperature range	°C	-30 ... 95
Temperature effect on zero signal $\mathbf{TK_0}$	% M_{nom}/10 K	±0.2
Temperature effect on characteristic value $\mathbf{TK_C}$	% M_{nom}/10 K	±0.1
Maximum operating torque $\mathbf{M_G}$ (static)	% M_{nom}	150
Torque limit $\mathbf{M_{max}}$ (static)	% M_{nom}	200
Breaking torque $\mathbf{M_B}$ (static)	% M_{nom}	>300
Permissible oscillation stress when subjected to torque $\mathbf{M_{df}}$	% M_{nom}	70 (peak-to-peak)
Level of protection		IP50

Article-No.	Rated Torque [N·m]	Springrate [N·m/rad]	Mass Moment of Inertia [kg·m²]		Axial Force Limit [N]	Lateral Force Limit [N]
			Drive Side	Test Side		
114365	1	2.1E+02	2.4E-07	3.9E-07	380	7
100323	2	2.1E+02	2.4E-07	3.9E-07	380	7
100322	5	5.5E+02	2.6E-07	4.0E-07	700	17
100321	12	6.9E+02	2.6E-07	4.1E-07	840	21.5
100320	25	4.7E+03	9.6E-06	2.2E-06	2100	83
100319	63	1.1E+04	9.9E-06	2.5E-06	3900	210
100318	100	1.8E+04	1.3E-05	3.3E-06	5300	300
100317	160	1.9E+04	1.4E-05	3.4E-06	5500	320
100960	200	1.9E+04	1.4E-05	3.4E-06	5500	320
100315	500	1.1E+05	1.1E-04	3.3E-05	14000	1100
100217	1000	1.2E+05	2.4E-04	6.0E-05	16500	950
100313	2000	4.6E+05	4.6E-03	9.8E-04	37000	1800
100312	5000	6.2E+05	4.7E-03	1.1E-03	55000	3400

Options

Article-No.	Description	
100933	Accuracy class	0.1 % M_{nom}
100218	Control signal	100 % M_{nom}
100739	Control signal	80 % M_{nom}
106154	Control signal	50 % M_{nom}
113134	TEDS-standard IEEE 1451.4	
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 DV-14:

LCV	GM 78	GM 40	GM 80	SI
				

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