

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



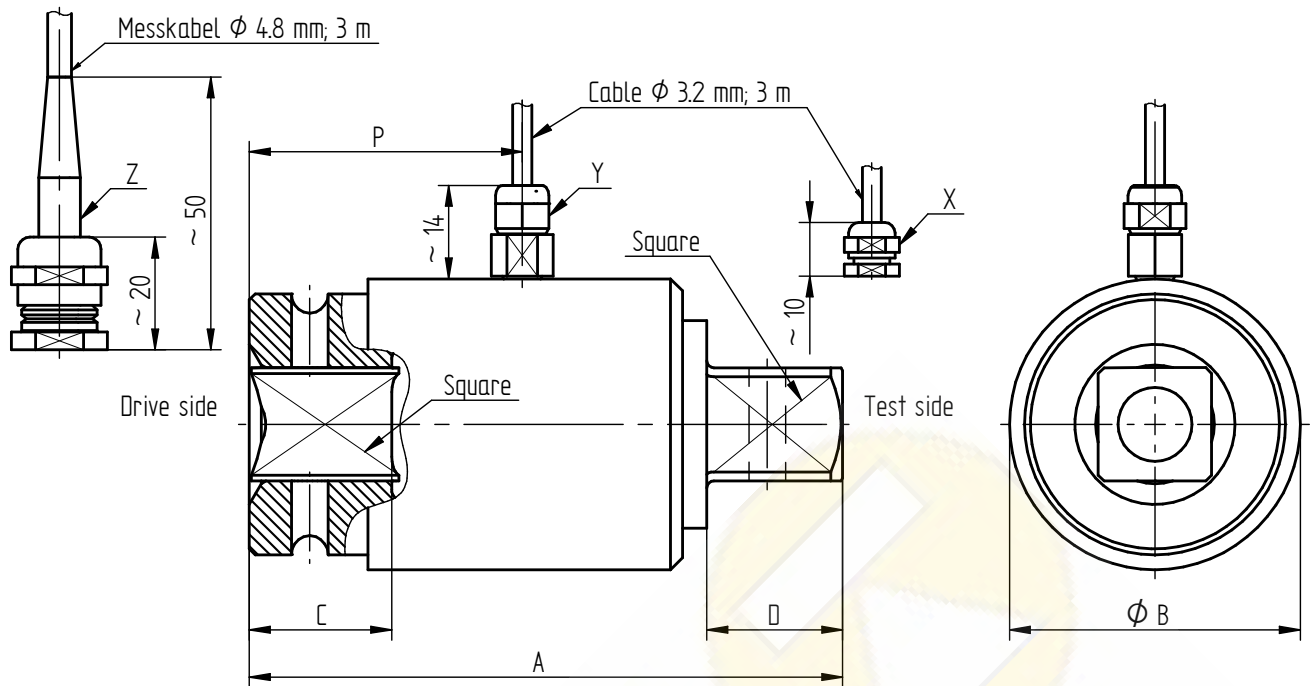
### Performance Features

- Torque sensor for testing of screwing tools
- 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

## Dimensions of DV-14 in mm



Nominal 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 (option)	grey	●
Shield	Shield	⊕

## Technical Data acc. to VDI/VDE/DKD 2639

Reactive Torque Sensor DV-14		
Nominal torque $M_{nom}$	N·m	1 ... 5000
Accuracy class	% $M_{nom}$	0.2 (optional 0.1)
Relative repeatability error in unchanged mounting position $b'$	% $M_{nom}$	$\pm 0.02$
Rated characteristic value $C_{nom}$	mV/V	1 [1 N·m; 0.5] $\pm 0.2\%$
Bridge resistance $R_{Br}$	$\Omega$	350
Operating range of excitation voltage	VDC	2 ... 12
Electrical connection		3 m with free strands
Reference temperature $T_{ref}$	$^{\circ}\text{C}$	23
Rated temperature range	$^{\circ}\text{C}$	-5 ... 45
Operating temperature range	$^{\circ}\text{C}$	-15 ... 55
Temperature effect on zero signal $TK_0$	% $M_{nom}/10\text{ K}$	$\pm 0.2$
Temperature effect on characteristic value $TK_C$	% $M_{nom}/10\text{ K}$	$\pm 0.1$
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		
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 % $M_{nom}$
42828	Extended temperature range	-30 $^{\circ}\text{C}$ ...100 $^{\circ}\text{C}$
42829	Extended temperature range	-30 $^{\circ}\text{C}$ ...120 $^{\circ}\text{C}$

## 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	SI-USB	GM 40	GM 80	GM 80-PA
				