

Rotating Slipping Torque Sensor DR-1 with Rated Torque from 1 ... 5000 N·m

TEDS

Data sheet

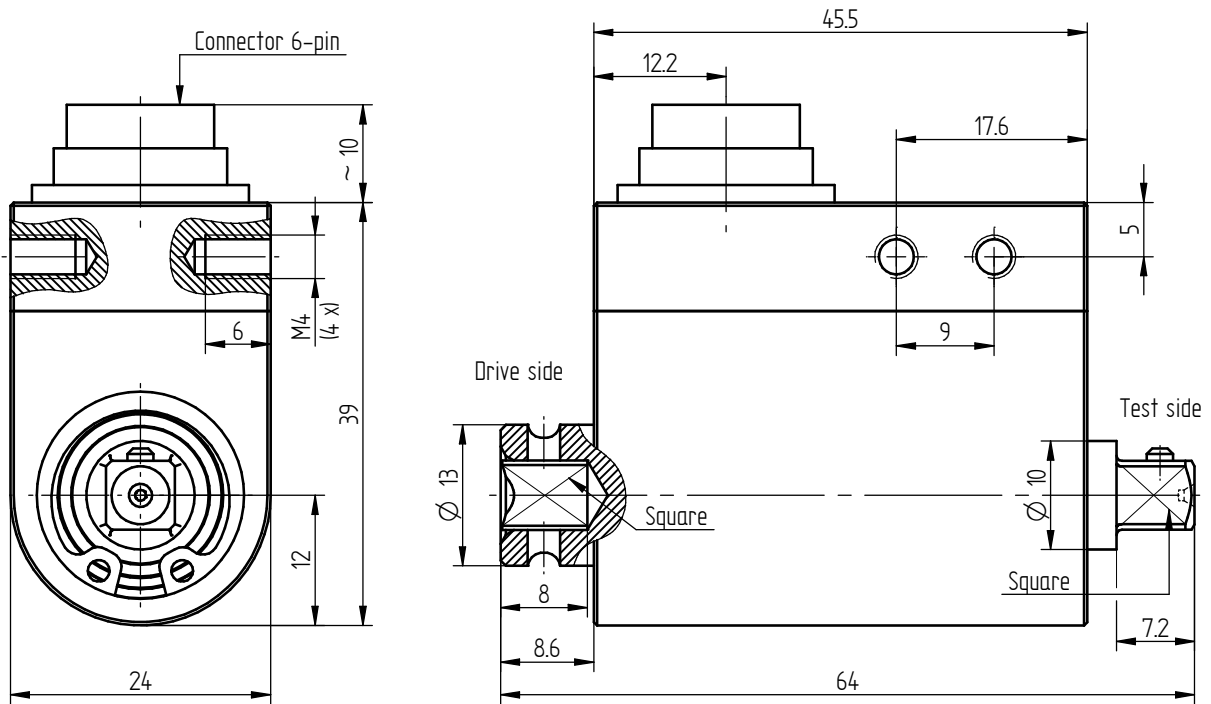
Performance Features

- Slipping torque sensor for screw driving systems
- TEDS (Transducer Electronic Data Sheet) Standard IEEE 1451.4 (optional)
- High accuracy
- Drive-square socket
- Output-square drive
- Very short axial length
- High torsional stiffness
- Simple handling and assembly
- Special versions on request

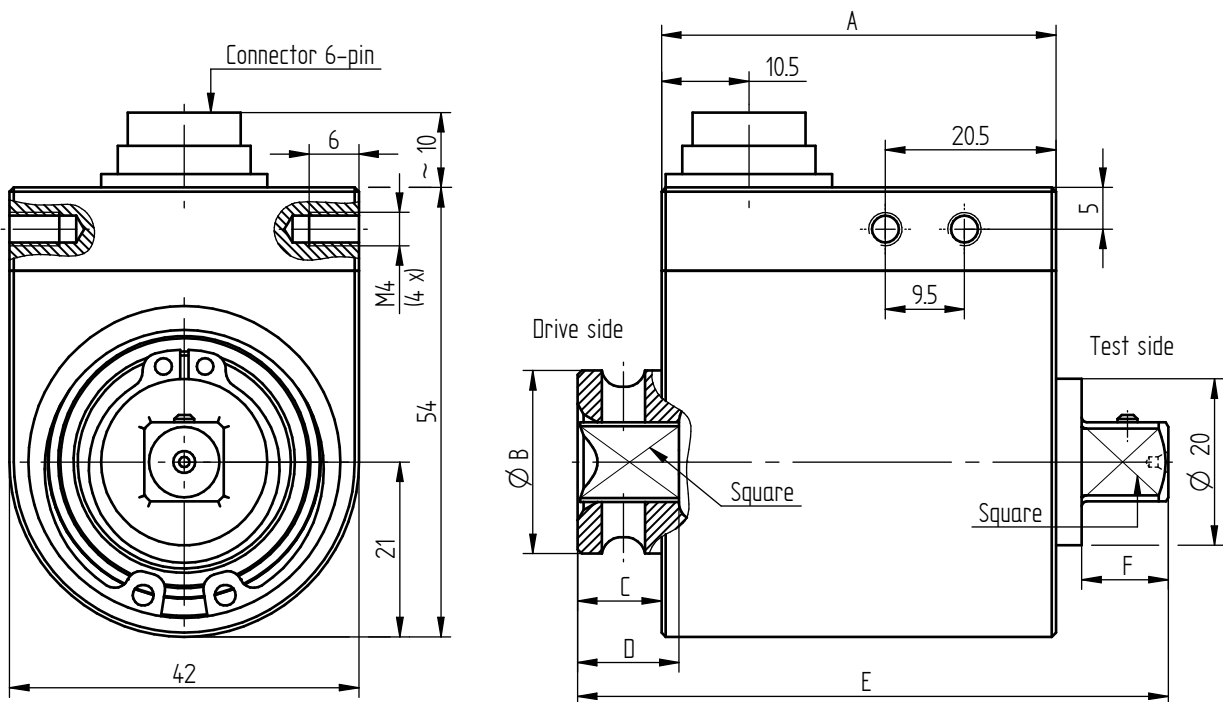
Application

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

Dimensions in mm

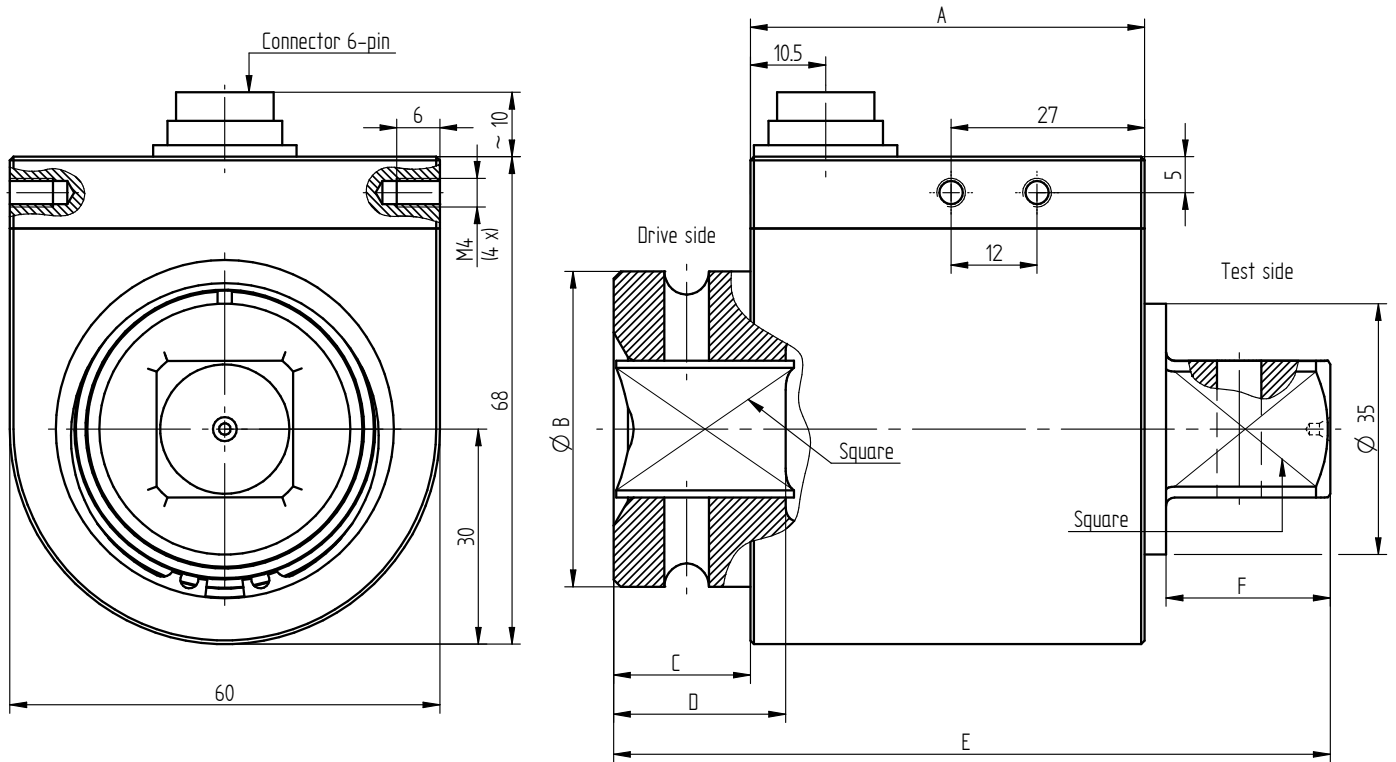


Rated Torque [N·m]	Square	Weight [kg]
1/2/5/12	1/4"	0.1

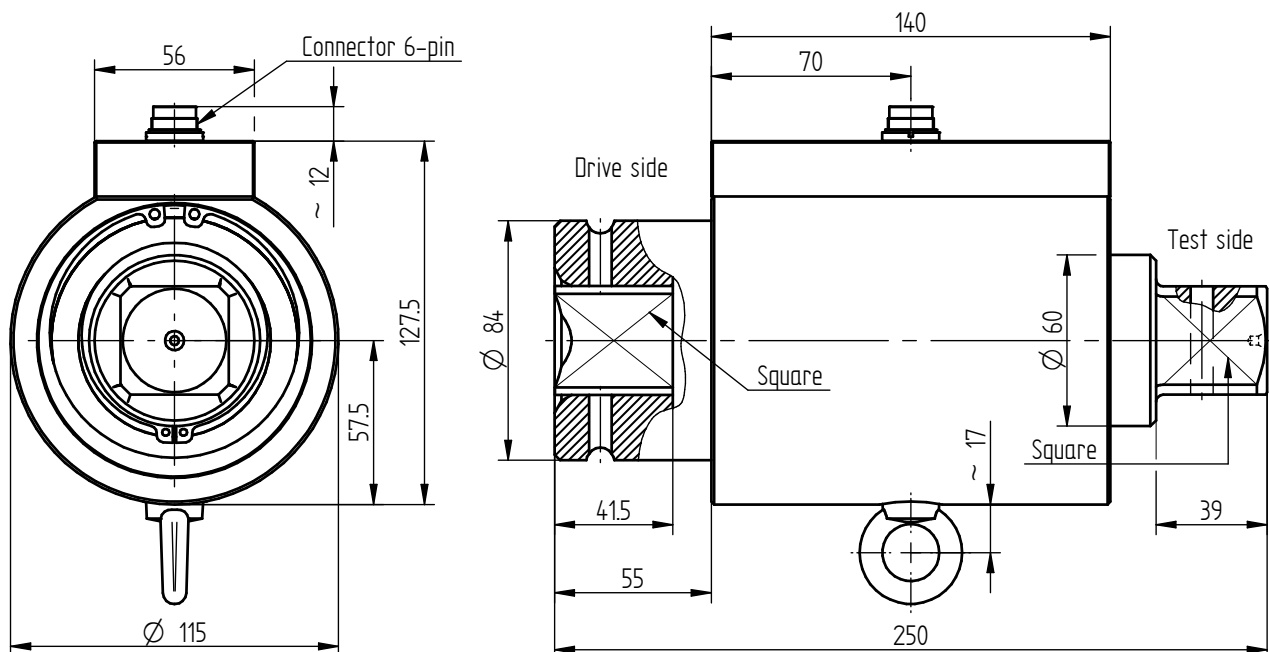


Rated Torque [N·m]	Square	Dimensions [mm]						Weight [kg]
		A	ØB	C	D	E	F	
25/63	3/8"	47.4	22	10.1	12.2	71	10.4	0.3
100/160/200	1/2"	47.4	29.8	10.7	15	76	15.1	0.4

Dimensions in mm

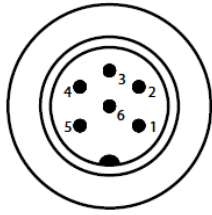


Rated Torque [N·m]	Square	Dimensions [mm]						Weight [kg]
		A	ØB	C	D	E	F	
500	3/4"	55	44	19	24	100	22.9	1.0
1000	1"	55	54	33	27	132	27.4	1.4



Rated Torque [N·m]	Square	Weight [kg]
2000/5000	1 1/2"	8.1

Connection Assignment

6-pin	DR-1	Series 723
Pin 1	Excitation (-)	
Pin 2	Excitation (+)	
Pin 3	Shielding	
Pin 4	Signal (+)	
Pin 5	Signal (-)	
Pin 6	Control signal or TEDS (option)	

Technical Data acc. to VDI/VDE/DKD 2639

Rotating Slipping Torque Sensor DR-1		
Rated torque M_{nom}	N·m	1 ... 5000
Accuracy class	% M_{nom}	0.1
Relative repeatability error in unchanged mounting position b'	% M_{nom}	±0.05
Rated characteristic value C_{nom}	mV/V	1 [1 N·m; 0.5] ±0.1%
Bridge resistance R_{Br}	Ω	350
Rated range of excitation voltage SG	VDC	2 ... 12
Electrical connection		6-pin series 723 ¹
Reference temperature T_{ref}	°C	23
Rated temperature range	°C	5 ... 50
Operating temperature range	°C	-10 ... 60
Storage temperature range	°C	-20 ... 70
Temperature effect on zero signal TK_0	% $M_{nom}/10$ K	±0.4
Temperature effect on characteristic value TK_C	% $M_{nom}/10$ K	±0.2
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
Durability of brushes	rev.	5x10 ⁷
Permissible oscillation stress when subjected to torque M_{df}	% M_{nom}	70 (peak-to-peak)
Level of protection		IP50

Article-No.	Rated Torque [N·m]	Limit Speed [min ⁻¹]	Springrate [N·m/rad]	Mass Moment of Inertia [kg·m ²]		Axial force limit [N] ²	Lateral force limit [N] ²
				Drive Side	Test Side		
100210	1	2000	2.1E+02	4.1E-07	1.4E-06	380	6.7
100220	2	2000	2.1E+02	4.1E-07	1.4E-06	380	6.7
100221	5	2000	5.5E+02	4.2E-07	1.4E-06	690	16.5
100222	12	2000	6.9E+02	4.3E-07	1.4E-06	820	22
100223	25	1500	4.7E+03	1.2E-05	6.3E-06	2100	84
100224	63	1500	1.1E+04	1.2E-05	6.6E-06	3900	210
102425	100	1500	1.8E+04	1.6E-05	7.3E-06	5200	290
100225	160	1500	1.9E+04	1.6E-05	7.4E-06	5500	330
102426	200	1500	1.9E+04	1.6E-05	7.4E-06	5500	330
100226	500	1000	1.1E+05	1.1E-04	4.2E-05	14200	1100
100227	1000	1000	1.2E+05	2.3E-04	6.9E-05	16300	1000
100228	2000	500	3.9E+05	3.2E-03	1.2E-03	37500	1800
100229	5000	500	4.7E+05	3.3E-03	1.3E-03	50000	2800

¹ Female cable connector in scope of delivery at first delivery

² Unsupported shaft

Options

Article-No.	Description	
100218	Control signal	100 % M_{nom}
100739	Control signal	80 % M_{nom}
106154	Control signal	50 % M_{nom}
113134	TEDS-standard IEEE 1451.4	

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
10301	Female cable connector 6-pin series 581
10315	Female angled connector 6-pin series 682
10266	Connection cable, 3 m, with 6-pin female cable connector series 581 and free strands
10387	Connection cable angled, 3 m, with 6-pin female angled connector series 682 and free strands

Amplifiers

Examples of suitable amplifiers for the slipping torque sensor DR-1:

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

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