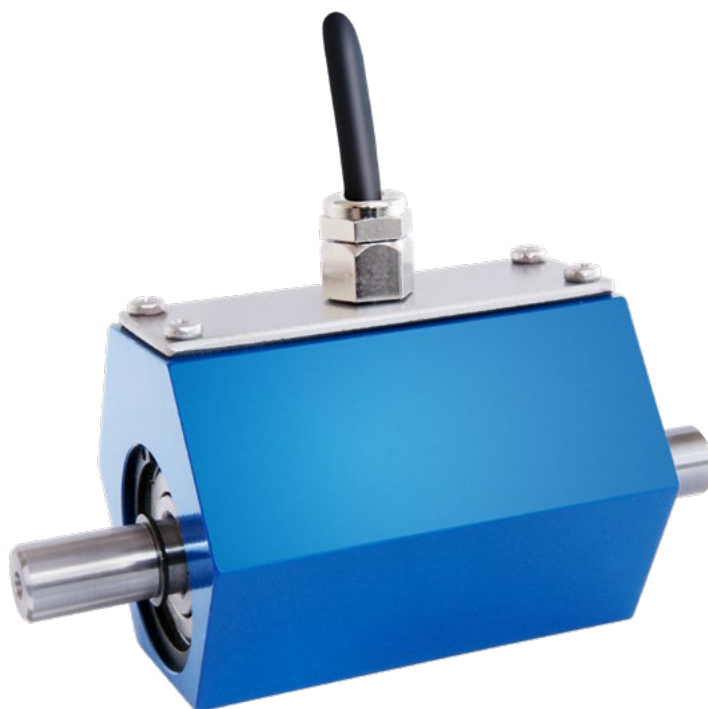


Rotating Torque Sensor DR-2477/DR-2477-P (contactless) with Nominal Torque from 0.2 ... 200 N·m

Data sheet



This sensor has a contactless and digital signal transmission from rotor to stator without signal falsification of the measurement data. It is therefore highly accurate and maintenance-free.

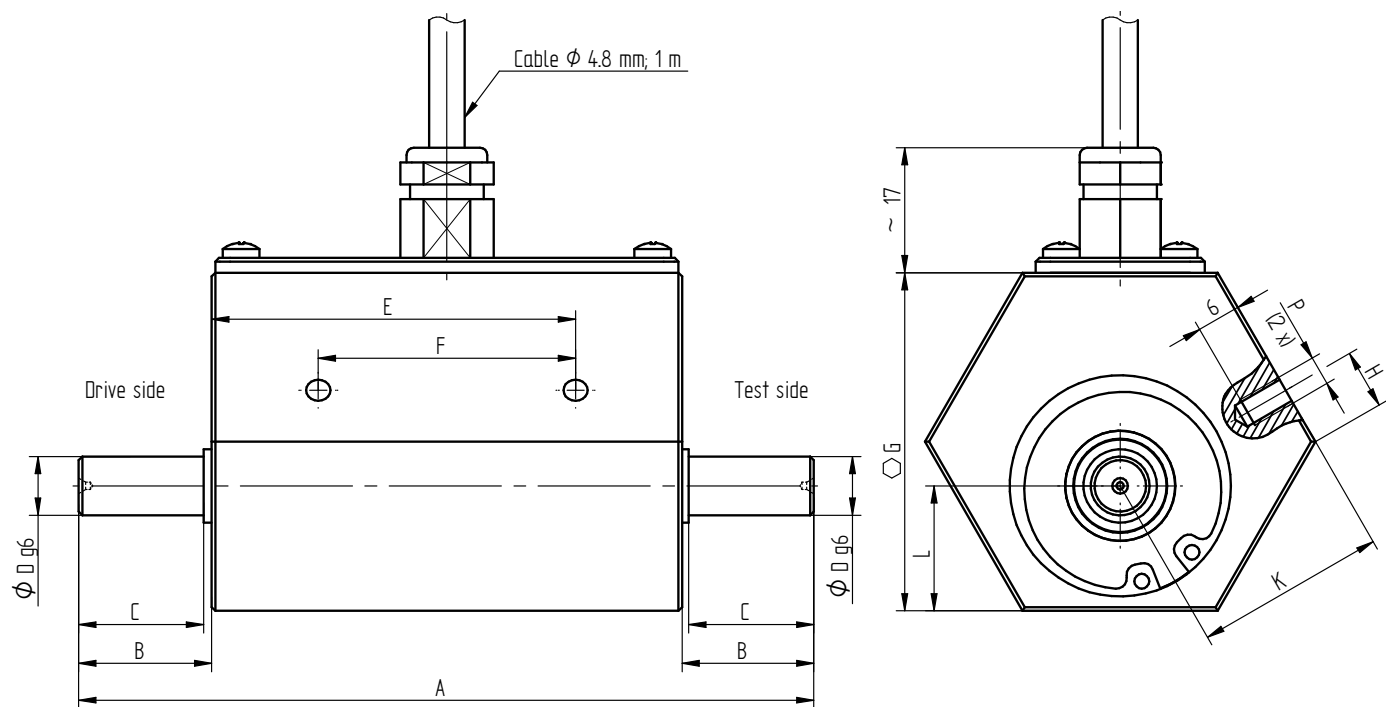
Performance Features

- Torque sensor for e.g. test bench applications
- Active output $\pm 5V$ (optional $\pm 10V$)
- Speed up to 10000 min^{-1}
- For stiff and floating sensor assembly
- Very short axial length
- High torsional stiffness
- Simple handling and assembly
- Special versions on request

Application

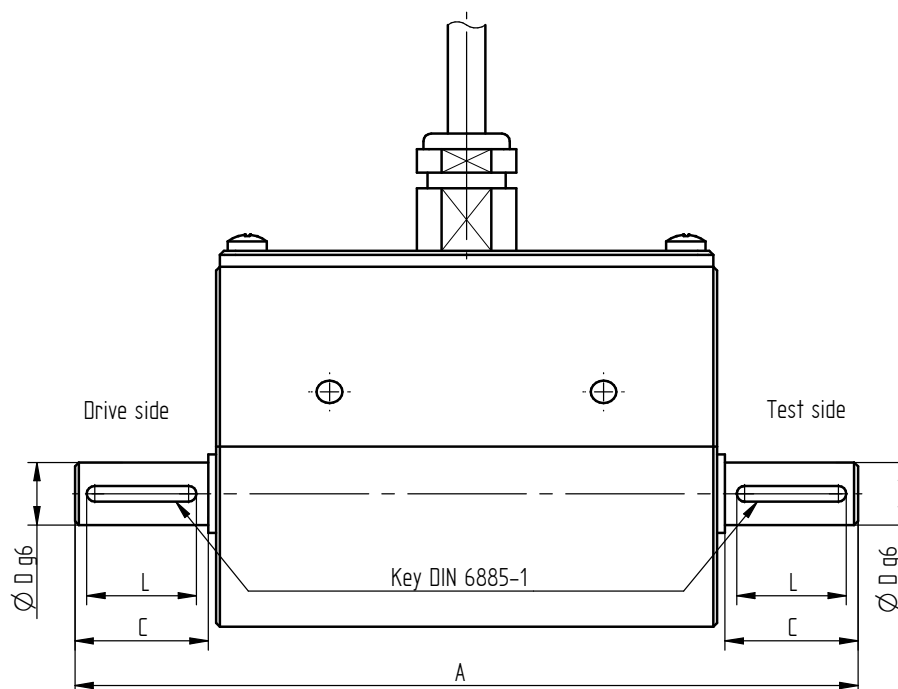
- Research and development
- Process measuring and control technology
- Fully automated machining centres
- Measuring and control devices
- Tool engineering
- Special mechanical engineering

Dimensions of DR-2477/DR-2477-P in mm



Nominal Torque [N·m]	Dimensions [mm]											Weight [kg]
	A	B	C	ØD	E	F	ØG	H	K	L	P	
0.2/0.5/1/2	100	18	17	8	49.5	35	46	8	26	17	M4	0.4
5/10	100	18	17	10	49.5	35	46	8	26	17	M4	0.4
20/50	140	30	29	18	60	40	65	15	34.8	28	M5	1.1
100/200	160	40	39	22	60	40	65	15	34.8	28	M5	1.3

Dimensions of Version with Feather Keys in mm



Nominal Torque [N·m]	Dimensions [mm]					Weight [kg]
	A	ØD	C	L	Feather Key ¹	
0.2/0.5/1/2	100	8	17	14	2 x 2 x 14	0.4
5/10	100	10	17	14	3 x 3 x 14	0.4
20/50	140	18	29	25	6 x 6 x 25	1.1
100/200	160	22	39	36	6 x 6 x 36	1.3

Connection Assignment

Electrical Connection

Supply (+)	brown	●	12 ... 28VDC
Supply (GND)	green	●	0V
Signal (+)	yellow	●	±5V (±10V)
Signal (GND)	white	○	0V
Shield	shield	⊕	

¹ Calculated load type for feather key: single side light shocks

Technical Data acc. to VDI/VDE/DKD 2639

Torque Sensor DR-2477/DR-2477-P

Nominal torque M_{nom}	N·m	0.2 ... 200
Accuracy class	% M _{nom}	0.25
Relative repeatability error in unchanged mounting position b'	% M _{nom}	±0.05
Rated range of supply voltage	VDC	12 ... 28
Current consumption	mA	≤50
Output signal	V	±5
Electrical connection		Cable, 1 m with free strands
Reference temperature T_{ref}	°C	23
Rated temperature range	°C	5 ... 45
Operating temperature range	°C	0 ... 60
Storage temperature range	°C	-10 ... 70
Temperature effect on zero signal TK₀	% 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
Permissible oscillation stress when subjected to torque M_{df}	% M _{nom}	70 (peak-to-peak)
Level of protection		IP50

Article-No. DR-2477	Article-No. DR-2477-P ²	Nominal Torque [N·m]	Limit Speed [min ⁻¹]	Springrate [N·m/rad]	Mass Moment of Inertia [kg·m ²]		Axial Force Limit [N] ³	Lateral Force Limit [N] ³
					Drive Side	Test Side		
108187	115386	0.2	10000	1.8E+01	1.6E-06	1.0E-06	58	1.5
108188	110178	0.5	10000	1.1E+02	1.6E-06	1.0E-06	185	2.1
106433	108911	1	10000	2.2E+02	1.6E-06	1.1E-06	340	5.1
106475	110244	2	10000	2.1E+02	1.6E-06	1.1E-06	340	5.1
106434	109467	5	10000	8.9E+02	1.7E-06	1.1E-06	1050	29
106476	110179	10	10000	8.9E+02	1.7E-06	1.1E-06	1050	29
106541	109127	20	8000	8.4E+03	4.2E-05	2.1E-05	2600	98
106542	109191	50	8000	8.4E+03	4.2E-05	2.1E-05	2600	98
106543	110233	100	8000	2.0E+04	4.7E-05	2.7E-05	6400	250
106544	106854	200	8000	2.0E+04	4.7E-05	2.7E-05	6400	250

Options

Article-No.	Description	
103562	Output signal	±10V
103861	Extension measuring cable per 1 m	

² Version „-P“ feather key

³ Unsupported shaft

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	

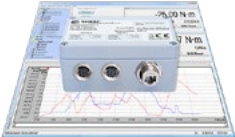
Accessories

Electrical Connection

Article-No.	Description
10320	Cable connector KSSH15 (15-polig) incl. sensor mounting
10337	Cable connector KS12 (12-polig) incl. sensor mounting

Amplifiers

Examples of suitable amplifiers for the torque sensors DR-2477/DR-2477-P:

LCV-USB2	SI-ETH	SI-USB3	GM 80	GM 80-PA
				

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