Lorenz® messtechnik gmbh

Rotating Torque Sensor DR-2600 (contactless) with Nominal Torque from 0.005 ... 150 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

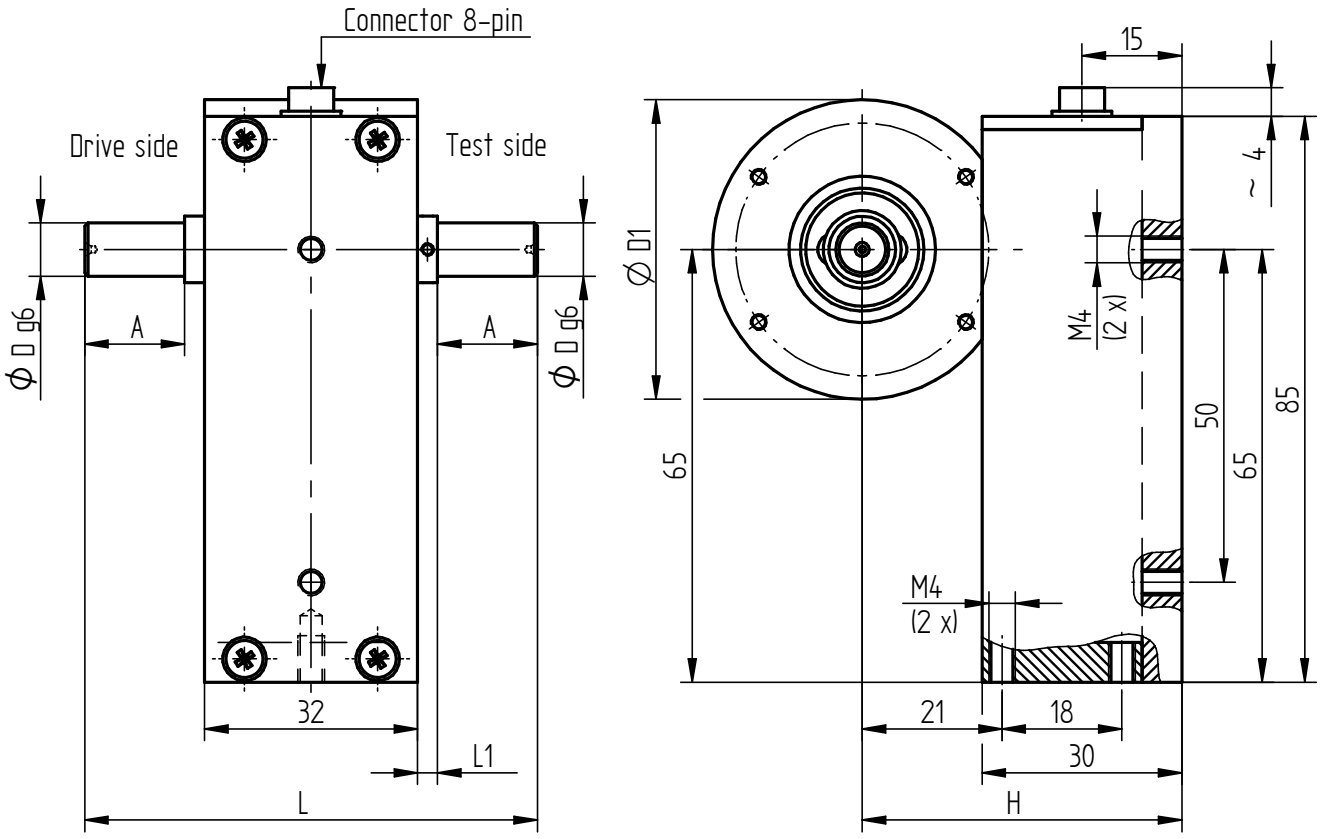
- Bearingless miniature sensor for e.g. test bench applications
- High accuracy
- Digital output RS485
- Integrated speed measurement, optional
- Speed up to 30000 min^{-1}
- Very short axial length
- High torsional stiffness
- Simple handling and assembly
- Auto identification of measuring range, serial number, calibration date
- 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

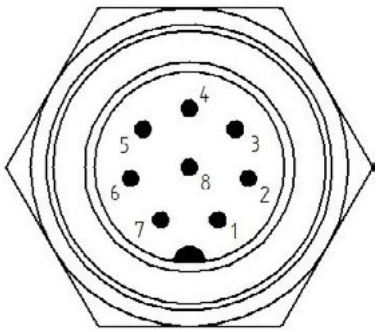
Lorenz Messtechnik GmbH Obere Schlossstrasse 127/129/131
73553 Alfdorf Tel. +49 7172 93730-0, Fax +49 7172 93730-22
info@lorenz-messtechnik.de, www.lorenz-messtechnik.de

Dimensions of DR-2600 in mm



Nominal Torque [N·m]	Dimensions [mm]						Weight [kg]
	ØD	ØD1	A	L	L1	H	
0.005/0.01	4	45	5	48	3	48	0.3
0.02/0.05/0.1/0.2/0.5/1	6	45	7	52	3	48	0.3
2/5	8	45	15	68	3	48	0.3
10	10	45	15	68	3	48	0.3
20/50/100/150	18	59.5	36	122	9	53	0.6

Connection Assignment

8-pin	DR-2600		Series 711
Pin 1	Supply (+)	12 ... 28VDC	
Pin 2	Supply (GND)	0V	
Pin 3	RS485	RS485 (A)	
Pin 4	RS485	RS485 (B)	
Pin 5	NC	-	
Pin 6	Signal speed, optional	5V TTL	
Pin 7	NC	-	
Pin 8	NC	-	
	Housing	Shield	

Technical Data acc. to VDI/VDE/DKD 2639

Torque Sensor DR-2600		
Nominal torque $\mathbf{M_{nom}}$	N·m	0.005 ... 150
Accuracy class	% M_{nom}	0.1
Relative repeatability error in unchanged mounting position **b'**	% M_{nom}	±0.02
Rated range of supply voltage	VDC	12 ... 28
Current consumption	mA	≤60
Output signal	digits	±25000
Control signal excitation		per software
Sample rate	kSample/s	5
Electrical connection		8-pin series 711
Reference temperature $\mathbf{T_{ref}}$	°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 $\mathbf{TK_0}$	% 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.	Nominal Torque [N·m]	Limit Speed [min^{-1}]	Springrate [N·m/rad]	Mass Moment of Inertia [$kg·m^2$][1]		Axial Force Limit [N]	Lateral Force Limit [N]
				Drive Side	Test Side		
107951	0.005	20000	4.6E-01	7.5E-07	1.1E-08	35	1
108095	0.01	20000	4.6E-0.1	7.5E-07	1.1E-08	35	1
108096	0.02	30000	3.7E+00	7.6E-07	1.3E-08	35	1
108097	0.05	30000	3.7E+00	7.6E-07	1.3E-08	40	1.1
108098	0.1	30000	1.8E+01	8.6E-07	3.8E-08	43	1.5
108124	0.2	30000	1.8E+01	8.6E-07	3.8E-08	59	2.3
108278	0.5	30000	1.2E+02	8.6E-07	3.8E-08	185	4.2
108530	1	30000	1.2E+02	8.6E-07	3.8E-08	255	7.2
108093	2	30000	6.2E+02	9.1E-07	8.3E-08	520	14
108358	5	30000	6.2E+02	9.1E-07	8.3E-08	520	14
108359	10	30000	1.5E+03	9.8E-07	1.6E-07	900	33
108279	20	20000	7.4E+03	1.2E-05	3.6E-06	2150	62
108280	50	20000	1.1E+04	1.2E-05	3.9E-06	4000	160
108094	100	20000	1.1E+04	1.2E-05	3.9E-06	4000	160
109253	150	20000	1.2E+04	1.2E-05	4.2E-06	5000	220

[1] Without option speed measurement

Options

Article-No.	Description	
107437	Speed measurement, 1x6 impulses	5V TTL

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
10307	Female cable connector 8-pin series 712
10366	Female angled connector 8-pin series 712
102669	Connection cable, 3 m, with 8-pin female cable connector series 712 and free strands
106082	Connection cable angled, 3 m, with 8-pin female angled connector series 712 and free strands