Torque Sensor, rotating

Series 86-2500

These sensors have a contactless and digital signal transmission from rotor to stator, which means no signal falsification and maintenance-free.

86-2500

86-2500-xxxx

Nominal torque from 0,005Nm…150Nm
High accuracy 0,1% f. scale
Active output ±5 V (optional ±10V)
Speed up to 30000min^{-1}
Maintenance-free, since no bearings
Integrated speed/angle measurement optional
Very short axial lenght
High torsional stiffness
Reliable and durable
Simple handling and assembly
Special versions on request

86-2600-xxxx

Nominal torque from 0,005Nm…150Nm
High accuracy 0,1% f. scale
Digital output RS485
Speed up to 30000min^{-1}
Maintenance-free, since no bearings
Integrated speed/angle measurement optional
Very short axial lenght
High torsional stiffness
Reliable and durable
Simple handling and assembly
Special versions on request
Auto identification of: measuring range, serial number, date of calibration

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Technical Data
Model 86-2500

Order code	Article No. 86-2500	Nominal Torque [Nm]	Limit Speed [min $^{-1}$]	Springrate [N·m/rad]	Mass moment of inertia [kg·m²]1		Limit Thrust Load [N]	Limit shear force [N]
					Drive side	Test side		
86-2500-4005	107606	0,005	20000	4,6E-01	7,5E-07	1,1E-08	35	1
86-2500-4010	107607	0,01	20000	4,6E-0,1	7,5E-07	1,1E-08	35	1
86-2500-4020	107428	0,02	30000	3,7E+00	7,6E-07	1,3E-08	35	1
86-2500-4050	107429	0,05	30000	3,7E+00	7,6E-07	1,3E-08	40	1,1
86-2500-4100	107430	0,1	30000	1,8E+01	8,6E-07	3,8E-08	43	1,5
86-2500-4200	107431	0,2	30000	1,8E+01	8,6E-07	3,8E-08	59	2,3
86-2500-4500	107432	0,5	30000	1,2E+02	8,6E-07	3,8E-08	185	4,2
86-2500-5001	107433	1	30000	1,2E+02	8,6E-07	3,8E-08	255	7,2
86-2500-5002	107434	2	30000	6,2E+02	9,1E-07	8,3E-08	520	14
86-2500-5005	107435	5	30000	6,2E+02	9,1E-07	8,3E-08	520	14
86-2500-5010	107436	10	30000	1,5E+03	9,8E-07	1,6E-07	900	33
86-2500-5020	107598	20	20000	7,4E+03	1,2E-05	3,6E-06	2150	62
86-2500-5050	107599	50	20000	1,1E+04	1,2E-05	3,9E-06	4000	160
86-2500-5100	107600	100	20000	1,1E+04	1,2E-05	3,9E-06	4000	160
86-2500-5150	109190	150	20000	1,2E+04	1,2E-05	4,2E-06	5000	220

Please specify the required meas. range at order!

Technical Data

	86-2500		86-2600	
Accuracy class	0,1	% f. s.	0,1	% f. s.
Repeatability (DIN 1319)	±0,02	%	±0,02	%
Supply voltage	12 ... 28	VDC	12…28	VDC
Current consumption	≤ 60	mA	< 60	mA
Output signal	±5	V	±25000 digits per Software	
Control signal excitation	L <2,0; H >3,5	V		
Sample rate	10	kSample	5	kSample
Reference temperature	23	°C	23	°C
Nominal temperature range	5 ... 45	°C	5 ... 45	°C
Service temperature range	0 ... 60	°C	0 ... 60	°C
Storage temperature range	-10 ... 70	°C	-10 ... 70	°C
Temp. coeff. of sensitivity	±0,01	% f. s.	±0,01	% f. s.
Temp. coeff. of zero signal	±0,02	% f. s.	±0,02	% f. s.
Service torque (static)	150	% f. s.	150	% f. s.
Limit torque (static)	200	% f.s.	200	% f. s.
Ultimate torque (static)	>300	% f. s.	>300	% f. s.
Bandwidth (DIN 50100)	70 *(peak - peak)*	%	70 *(peak - peak)*	%
Level of protection (DIN EN 60529)	IP50		IP50	
Electrical connection	8-pin series 711		8-pin series 711	

Pin Connection
Model 86-2500

8pin

Pin 1	Supply (+)	12…28VDC
Pin 2	Supply (GND)	0V
Pin 3	Signal (+)	±5 V (±10V)
Pin 4	Signal (GND)	0 V
Pin 5	Control Signal	L <2,0V; H >3,5V
Pin 6	Opt. Signal speed	5V TTL
Pin 7	NC	-
Pin 8	NC	-
	Housing	Shield

Pin Connection
Model 86-2600

8pin

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	Opt. Signal Speed	5V TTL
Pin 7	NC	-
Pin 8	NC	-
	Housing	Shield

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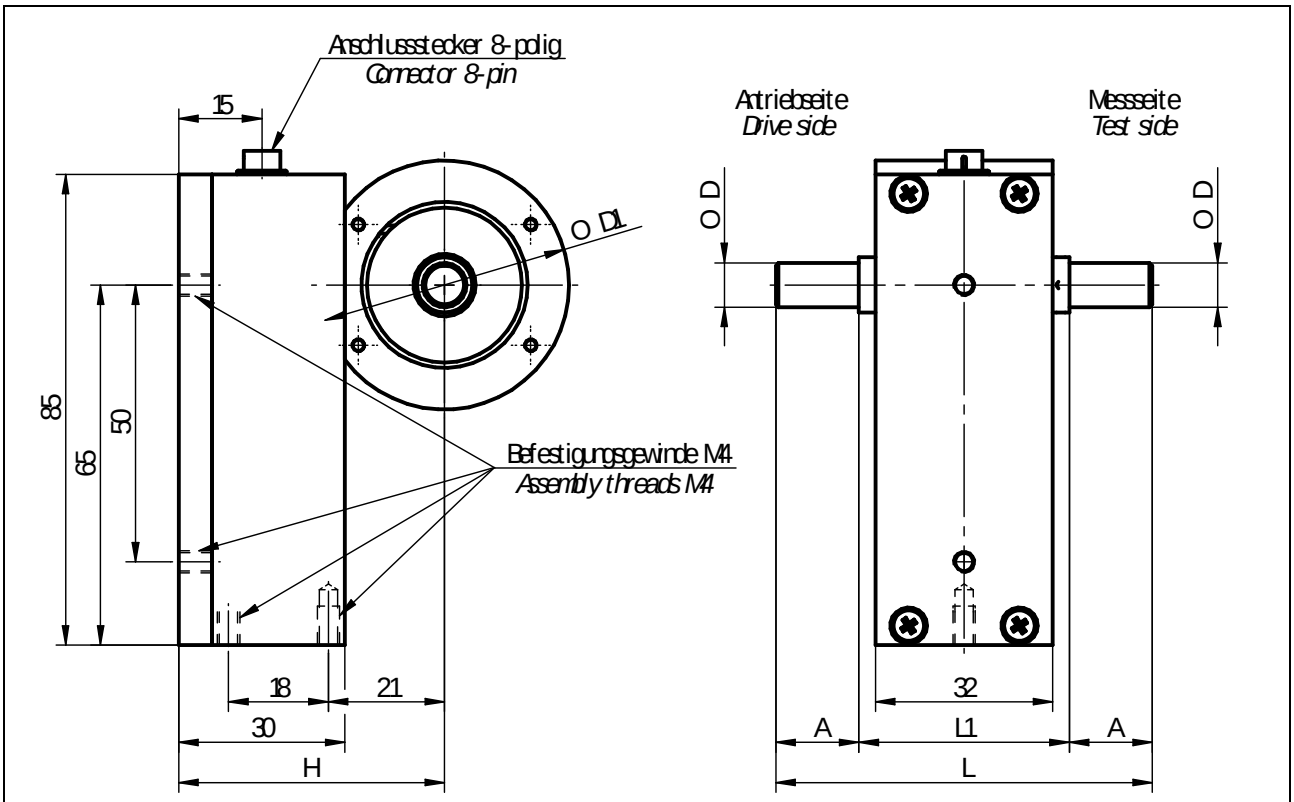
Option/Accessories

Article No.	Description
103562	Output signal ±10 V
107437	Speed measurement, 1x6 impulses, 5V TTL
10307	Female cable connector 8-pin series 712
10366	Female angled connector 8-pin series 712
102669	Connection cable, 3m, 8-pin series 712, free soldered ends
106082	Connection cable angled, 3m, 8-pin series 712, free soldered ends

Option Calibrations

Article No.	Description	Steps	Norm
400676	Linearity diagram	25%	Factory standard
400664	Linearity diagram	10%	
400961	Proprietary calibration	3	
400700	Proprietary calibration	5	VDI/VDE 2646
400688	Proprietary calibration	8	
	DAkkS-Calibration		on request

Mechanical Dimensions



Measuring range	Dimensions [mm]					
[N·m]	Ø D	Ø D1	A	L	L1	H
0,005	4 g6	45	5	48	38	48
0,01	4 g6	45	5	48	38	48
0,02	6 g6	45	7	52	38	48
0,05	6 g6	45	7	52	38	48
0,1	6 g6	45	7	52	38	48
0,2	6 g6	45	7	52	38	48
0,5	6 g6	45	7	52	38	48
1	6 g6	45	7	52	38	48
2	8 g6	45	15	68	38	48
5	8 g6	45	15	68	38	48
10	10 g6	45	15	68	38	48
20	18 g6	59,5	36	122	50	53
50	18 g6	59,5	36	122	50	53
100	18 g6	59,5	36	122	50	53
150	18 g6	59,5	36	122	50	53

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