Contactless Torque Sensor, rotating

Series 86-2493

This sensor has a contactless and digital signal transmission from rotor to stator, which means no signal falsification and maintenance-free

86-2493-xxxx

Nominal torque from 0,1Nm ... 5000Nm
Active output ±5 V (optional ±10 V)
Speed up to 4.000min^{-1}
Drive-square drive
Output-square drive
Very short axial length
High torsional stiffness
Reliable and durable
Simple handling and assembly
Special versions on request
Integrated speed/angle measurement optional

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Technical Data
Model 86-2493

Order code	Article No. 86-2493	Nominal Torque [Nm]	Limit Speed [min -1]	Springrate [N·m/rad]	Mass moment of inertia [kg·m²][1] Drive side	Mass moment of inertia [kg·m²][1] Test side	Limit Thrust Load [N][2]	Limit Shear Force [N][3]
86-2493-4100	106753	0,1	3000	1,80E+01	2,10E-06	2,30E-07	42	1,2
86-2493-4200	106754	0,2	3000	1,80E+01	2,10E-06	2,30E-07	42	1,2
86-2493-4500	106755	0,5	3000	1,20E+02	2,10E-06	2,30E-07	185	2,9
86-2493-5001	106756	1	3000	1,20E+02	2,10E-06	2,30E-07	260	4,7
86-2493-5002	106757	2	4000	3,00E+02	2,10E-06	2,40E-07	480	12,2
86-2493-5005	106758	5	4000	5,90E+02	2,10E-06	2,50E-07	870	30
86-2493-5010	106759	10	4000	7,30E+02	2,10E-06	2,70E-07	1150	45
86-2493-5015	106760	15	4000	7,30E+02	2,10E-06	2,70E-07	1150	45
86-2493-5020	106761	20	4000	7,30E+02	2,10E-06	2,70E-07	1150	45
86-2493-5035	106762	35	3000	8,60E+03	9,80E-06	1,10E-05	3300	110
86-2493-5050	106763	50	3000	1,00E+04	9,90E-05	1,10E-05	4200	155
86-2493-5063	106764	63	3000	1,10E+04	1,00E-05	1,10E-05	4900	190
86-2493-5100	106765	100	2500	1,20E+04	1,60E-05	1,10E-05	4000	135
86-2493-5160	106766	160	2500	1,50E+04	1,60E-05	1,20E-05	5500	215
86-2493-5200	106767	200	2500	1,50E+04	1,60E-05	1,20E-05	5500	215
86-2493-5500	106769	500	2500	8,80E+04	9,80E-05	7,70E-05	13500	840
86-2493-6001	106770	1000	1500	1,30E+05	2,10E-04	1,10E-04	16500	1000
86-2493-6002	106771	2000	1000	2,10E+05	3,50E-03	1,80E-03	27000	1650
86-2493-6005	106772	5000	1000	2,70E+05	3,50E-03	1,80E-03	51000	4000

Technical data

	86-2493	
Accuracy class	0,25	% f. s.
Repeatability (DIN 1319)	±0,05	%
Supply voltage	12 ... 28	VDC
Current consumption	≤60	mA
Output signal	±5	V
Control signal excitation	L <2,0; H >3,5	V
Sample rate	10	kSample /s
Reference temperature	23	°C
Nominal temperature range	5 ... 45	°C
Service temperature range	0 ... 60	°C
Storage temperature range	-10 ... 70	°C
Temp. coeff. of sensitivity	±0,02	% f. s.
Temp. coeff. of zero signal	±0,05	% f. s.
Service torque (static)	150	% f. s.
Limit torque (static)	200	% f.s.
Ultimate torque (static)	>300	% f. s.
Bandwidth (DIN 50100)	70 *(peak -peak)*	%
Level of protection (DIN EN 60529)	IP50	
Electrical connection	12-pin series 581[4]	

Pin Connection

12pin		
Pin A	NC	-
Pin B	Opt. Signal angle B	5 V TTL
Pin C	Signal (+)	±5 V (±10V)
Pin D	Signal (GND)	0 V
Pin E	Supply (GND)	0 V
Pin F	Supply (+)	12 ... 28 VDC
Pin G	Opt. Signal angle A	5 V TTL
Pin H	NC	-
Pin J	NC	-
Pin K	Control signal	L <2,0 V; H >3,5 V
Pin L	NC	-
Pin M	Shield	

Option/Accessories

Article No.	Description
103562	Output signal ±10 V
101560	Speed/angle measurement,2 x 360 impulses, 90° displaced, 5 V TTL
41382	Female cable connector 12-pin series 581
45598	Female angled connector 12-pin series 682
10270	Connection cable, 3 m, 12-pin series 581, free soldered ends
10345	Connection cable angled, 3 m,12-pin series 682, free soldered ends

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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

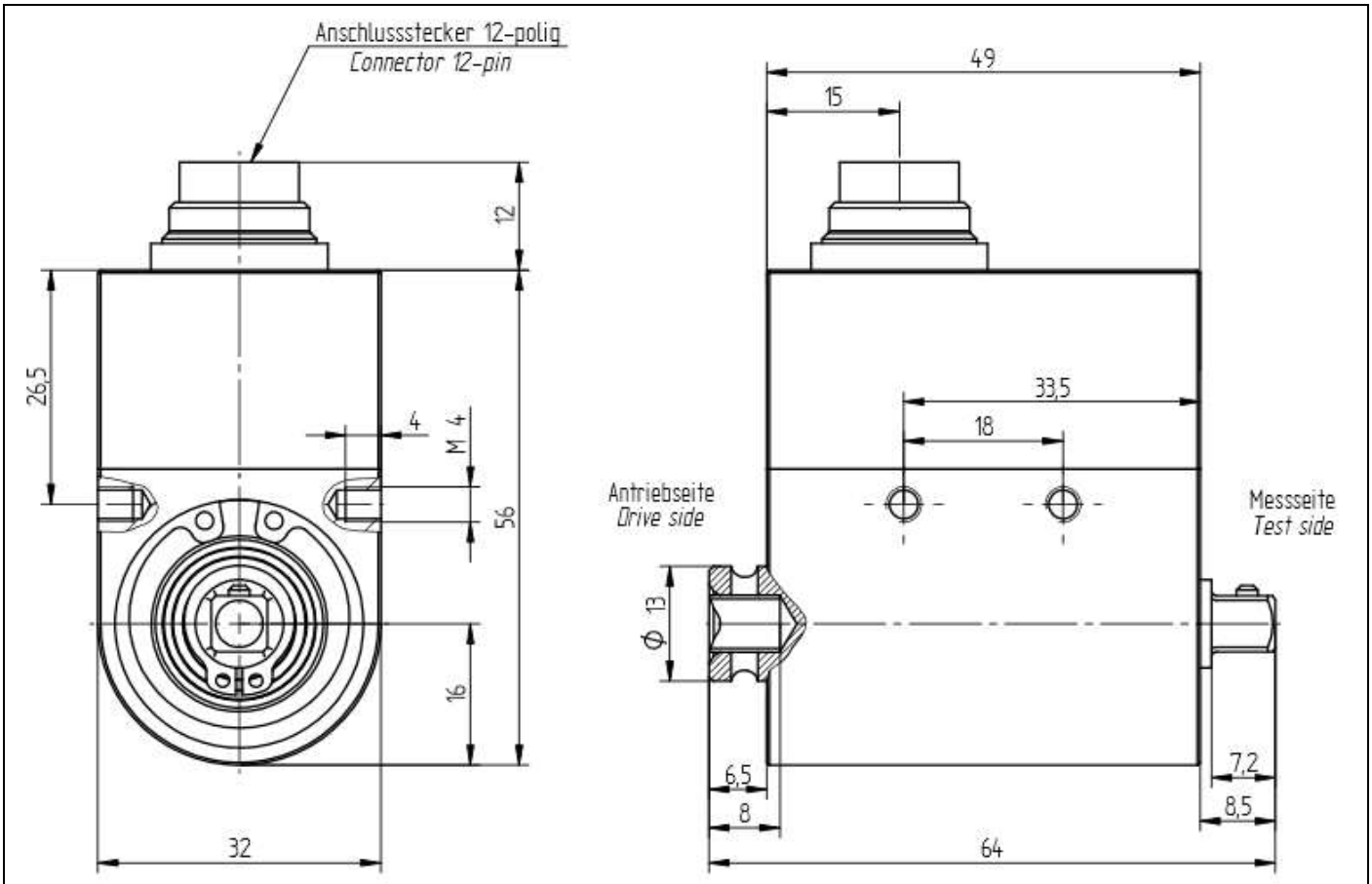
[1] Without option speed/angle measurement

[2] Unsupported shaft

[3] Unsupported shaft

[4] Female cable connector in scope of delivery at first delivery

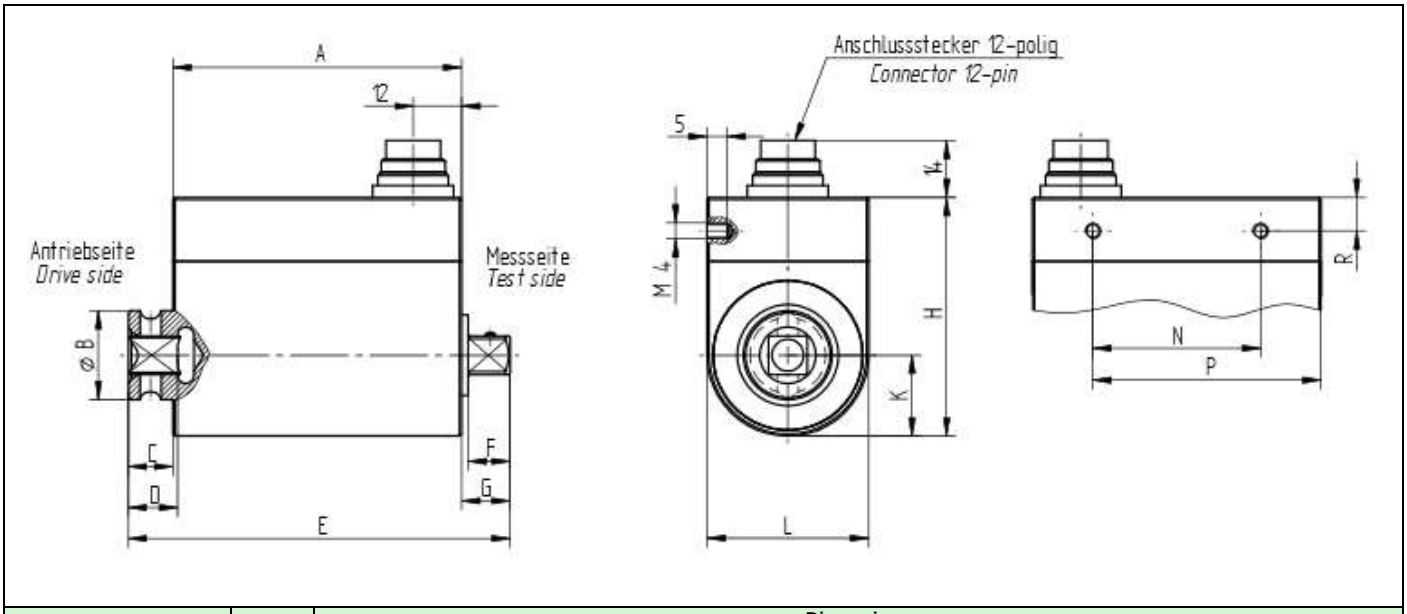
Mechanical Dimensions



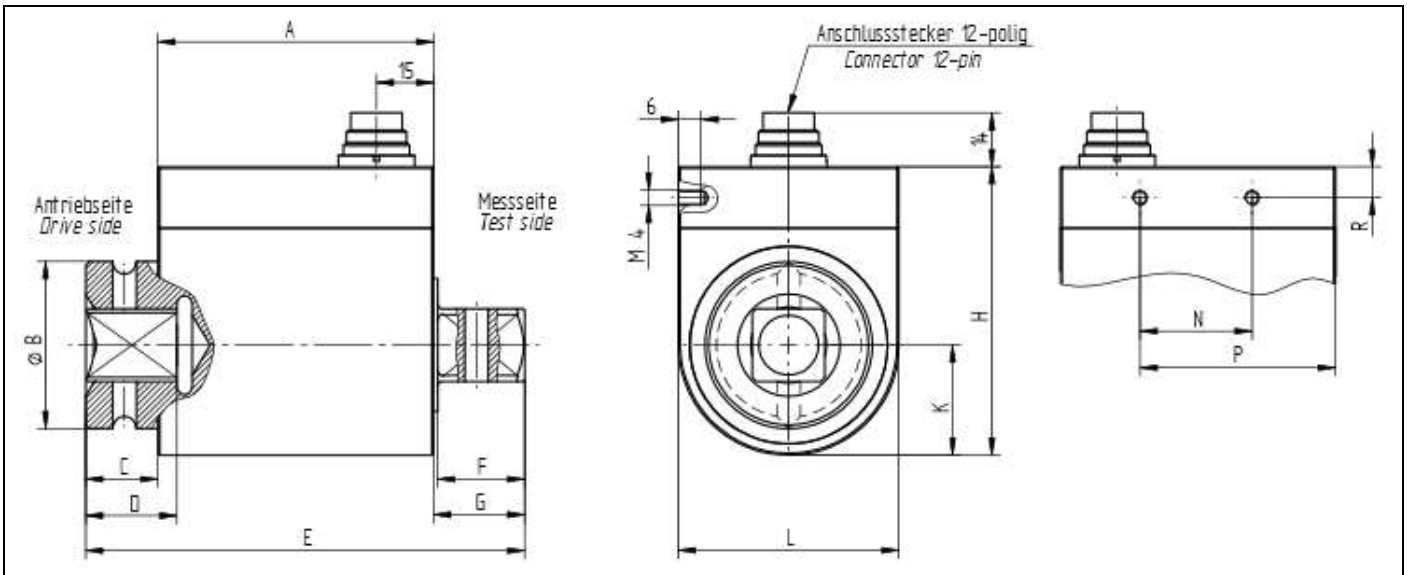
All dimension in mm

Nominal Torque [Nm]	Square
0,1 / 0,2 / 0,5 / 1 / 2 5 / 10 / 15 / 20	1/4”

Mechanical Dimensions

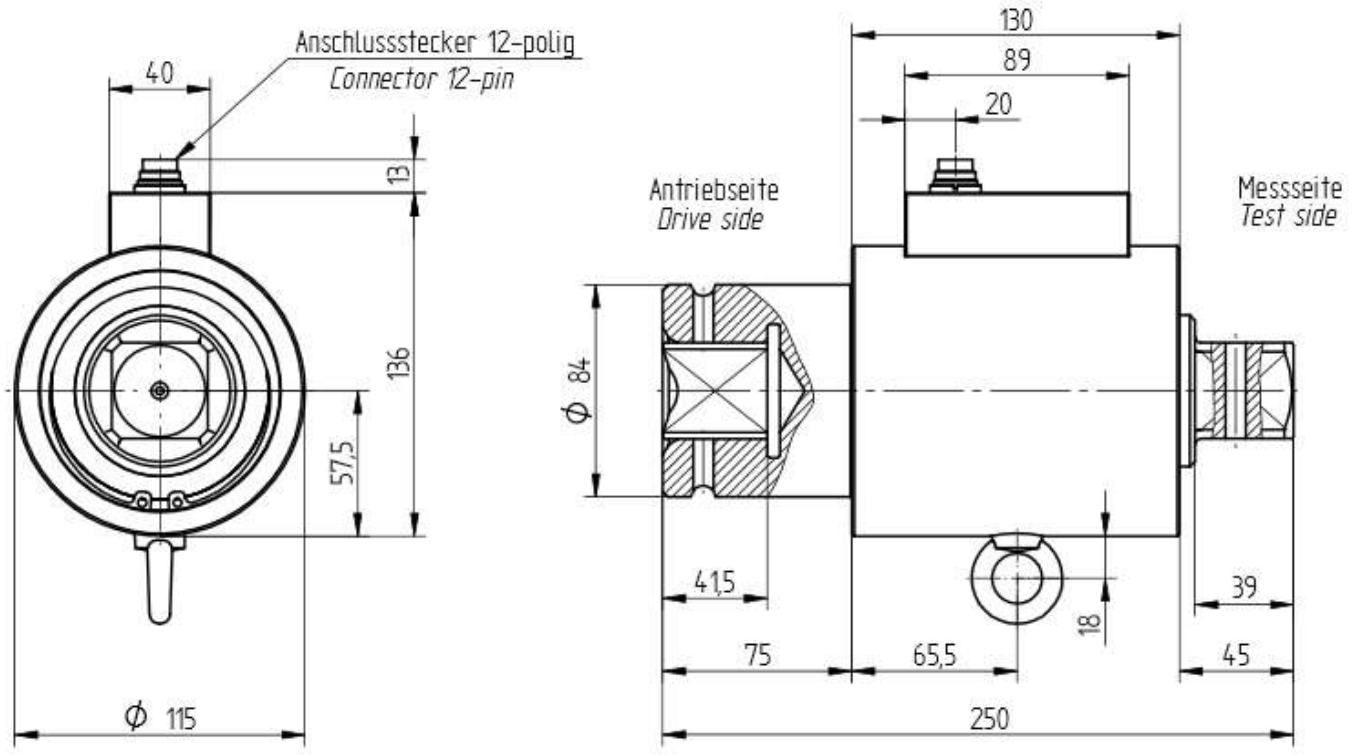


Nominal Torque [Nm]	Square	Dimensions [mm]												
		A	B	C	D	E	F	G	H	K	L	N	P	R
35 / 50 / 63	3/8”	71,5	22	11	12,2	94,5	10,4	12	59	20	40	41,5	56,5	8,2
100 / 160 / 200	1/2”	71,5	29,8	13	15	100,5	15,1	16	59	20	40	41,5	56,5	8,2



Nominal Torque [Nm]	Square	Dimensions [mm]												
		A	B	C	D	E	F	G	H	K	L	N	P	R
500	3/4”	72,5	44	19	24	115,5	22,9	24	76	29	58	29,5	51,5	8,2
1000	1”	72,5	54	29	27	130,5	27,4	29	76	29	58	29,5	51,5	8,2

Mechanical Dimensions



All dimension in mm

Nominal Torque [Nm]	Square
2000 / 5000	1 1/2”