

Apparecchi di misura di precisione. Sensori e Sistemi
per grandezze elettriche, termiche e meccaniche



Rotating Torque Measuring Flange (contactless) with Rated Torque from 50 ... 10000 Nm

Model 86-2800



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.

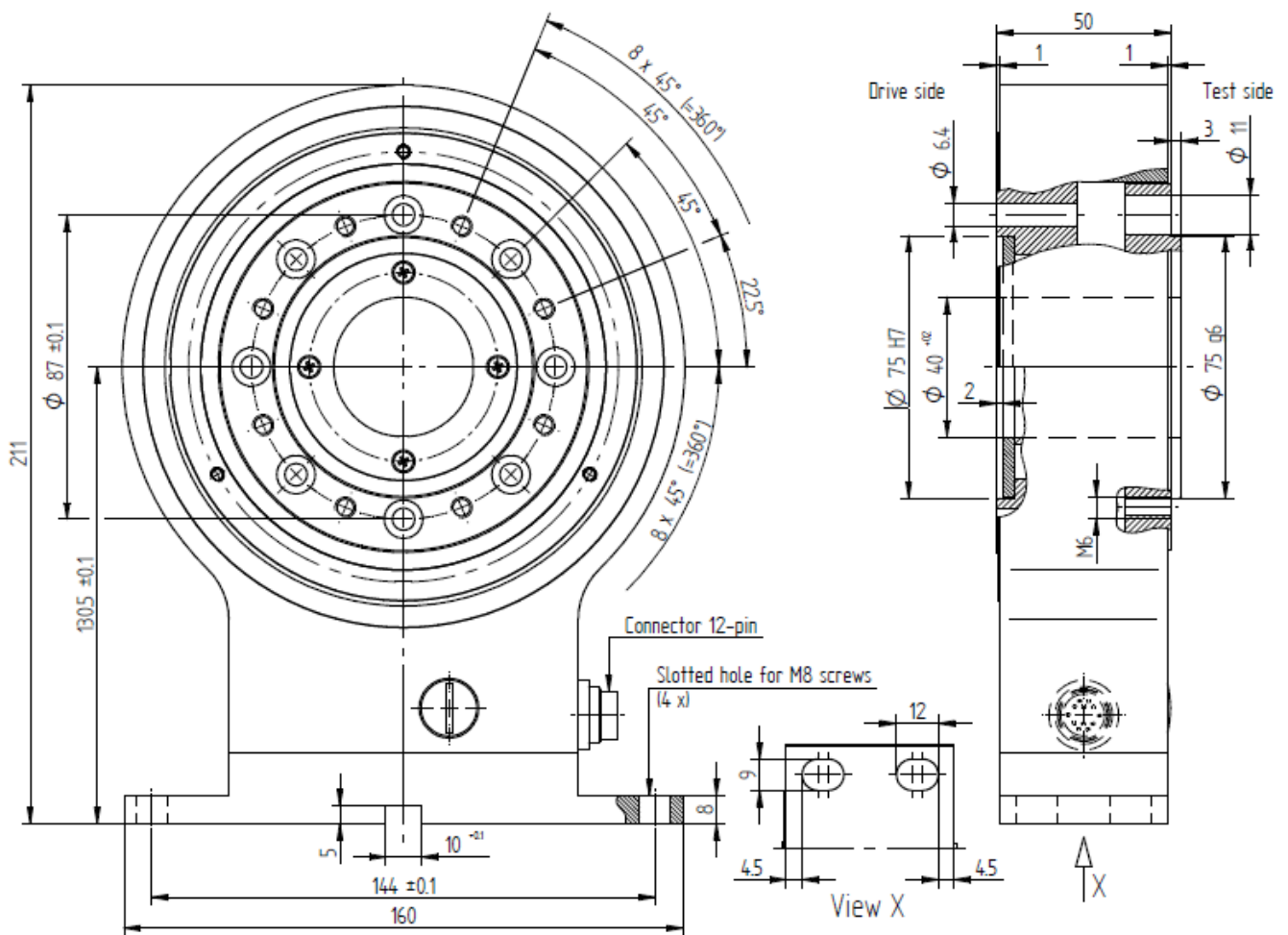
Performance Features

Bearingless torque sensor for e.g. test bench applications
High accuracy
Active output $\pm 5V$ (optional $\pm 10V$; 10 kHz ± 5 kHz;
60 kHz ± 30 kHz)
Integrated speed measurement (optional)
Speed up to 15000 min⁻¹
Very short axial length
High torsional stiffness
Flange-/flange-solution
Simple handling and assembly
Special version on request

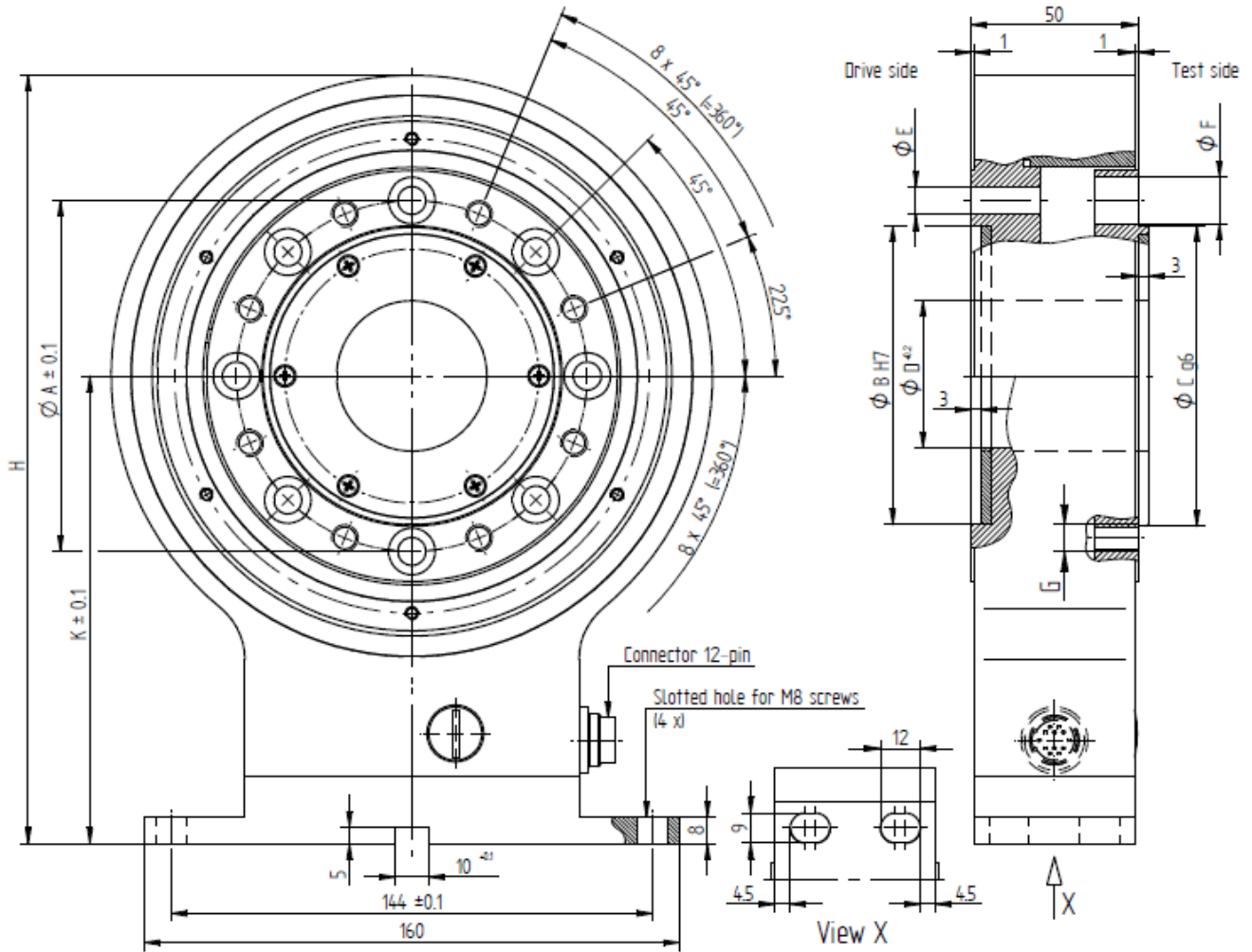
Application

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

Dimensions in mm

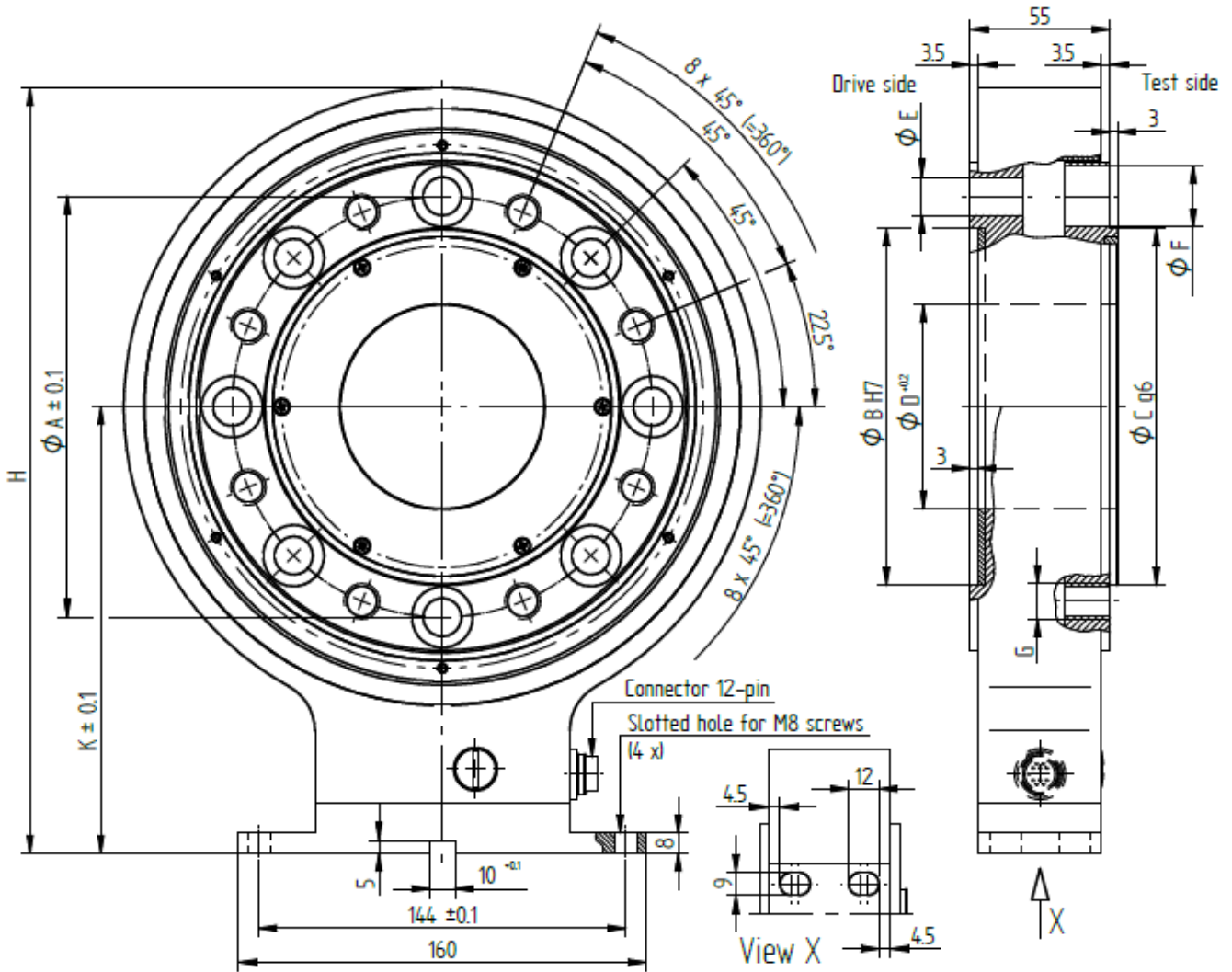


Rated Torque [Nm]	Screws		Weight [kg]
	Tightening Torque [N·m]	Property Class	
50 / 100	14	10.9	4.1



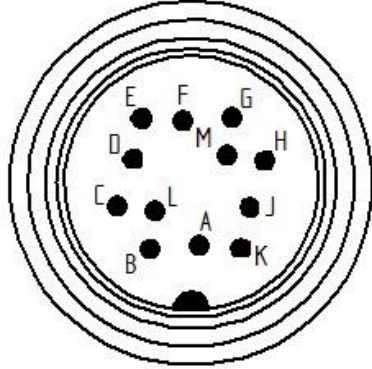
Rated Torque [Nm]	Dimensions [mm]									Screws		Weight [kg]
	ØA	ØB	ØC	ØD	ØE	ØF	G	H	K	Tightening Torque [Nm]	Property Class	
200	105	90	90	45	8.4	14	M8	230	140	35	10.9	4.8
500 / 1000	133	110	110	70	13	20	M12	250	150	120	10.9	5.4

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Rated Torque [Nm]	Dimensions [mm]									Screws		Weight [kg]
	ϕA	ϕB	ϕC	ϕD	ϕE	ϕF	G	H	K	Tightening Torque [Nm]	Property Class	
2000	165	140	140	80	15	24	M14	300	175	190	10.9	8.9
5000 / 10000	206	174	174	100	19	30	M18	360	205	490	12.9	13.3

Connection Assignment

12-pin	86-2800		Series 581
Pin A	NC	-	
Pin B	NC	-	
Pin C	Signal (+)	$\pm 5V (\pm 10V)$	
Pin D	Signal (GND)	0V	
Pin E	Supply (GND)	0V	
Pin F	Supply (+)	12 ... 28VDC	
Pin G	Signal speed (option)	5V TTL	
Pin H	NC	-	
Pin J	RS422 (option) ¹	RS422 (-)	
Pin K	NC	-	
Pin L	RS422 (option) ¹	RS422 (+)	
Pin M	Shield		

¹ Output signal via the RS422 interface, in addition to the analog output signal

Technical Data acc. to VDI/VDE/DKD 2639

Torque Measuring Flange 86-2800		
Rated torque M_{nom}	Nm	50 ... 10000
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	≤50
Output signal	V	±5
Electrical connection		12-pin series 581 ²
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	±0.2
Temperature effect on characteristic value TK_C	% M _{nom} /10 K	±0.1
Maximum operating torque M_G (static)	% M _{nom}	130
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)
Balancing grade (DIN ISO 1940)	Q	6.3
Level of protection		IP54

Model	Rated Torque [N·m]	Limit Speed [min ⁻¹]	Spring Rate [N·m/rad]	Mass Moment of Inertia [kg·m ²] ³		Axial Force Limit [N]	Lateral Force Limit [N]
				Drive Side	Test Side		
86-2800-5050	50	15000	8.3E+04	5.8E-03	1.1E-03	650	190
86-2800-5100	100	15000	1.4E+05	5.8E-03	1.1E-03	1100	330
86-2800-5200	200	15000	3.2E+05	9.2E-03	1.8E-03	1600	550
86-2800-5500	500	12000	1.1E+06	1.3E-02	4.0E-03	2000	1200
86-2800-6001	1000	12000	3.5E+06	1.3E-02	4.1E-03	4000	2700
86-2800-6002	2000	10000	6.7E+06	3.1E-02	1.3E-02	5400	3300
86-2800-6005	5000	8000	14.3E+06	7.8E-02	3.0E-02	5700	5200
86-2800-6010	10000	8000	14.3E+06	7.8E-02	3.0E-02	5700	5200

² Female cable connector in scope of delivery at first delivery

³ Without option speed measurement

Options

Article-No.	Description	
103562	Output signal	±10V
118080	Output signal	10 kHz ±5 kHz (RS422)
118110	Output signal	60 kHz ±30 kHz (RS422)
113627	Speed measurement, 1 x 30 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	

Electrical Connection

Article-No.	Description
41382	Female cable connector 12-pin series 581
45598	Female angled connector 12-pin series 682
10270	Connection cable, 3 m, with 12-pin female cable connector series 581 and free strands
10345	Connection cable angled, 3 m, with 12-pin female angled connector series 682 and free strands