

Torque/Screw Torque Transducers



Special Features

- Measurement of torque in any direction
- T4WA-S3: also angle of rotation/rotational speed measuring system*
- Nominal (rated) torques 5 N·m, 10 N·m, 20 N·m, 50 N·m, 100 N·m, 200 N·m, 500 N·m and 1 kN·m
- Simple, square connection mounting
- Small and practical

*) T4WA version no longer available

	1	1			
Туре	Driven side	Drive side			
T4A and T4WA-S3 5-50N⋅m	3/8"	3/8"			
	external square DIN 3121-F10	internal square DIN 3121-G10			
T4A and T4WA-S3 100N⋅m T4A and T4WA-S3 200N⋅m	1/2" external square DIN 3121-F12.5	1/2" internal square DIN 3121-G12.5			
T4A and T4WA-S3 500N⋅m	3/4" external square DIN 3121-F20	3/4" internal square DIN 3121-H20			
T4A and T4WA-S3 1kN⋅m	1" external square DIN 3121-F25	1" internal square DIN 3121-H25			

Dimensions (in mm)





Specifications

Туре		T4A/T4WA-S3								
Accuracy class		0.2 0.1								
Torque measuring system	-				-					
Nominal (rated) torque M.:	N.m	5	10	20	50	100	200	500	1000	
Nominal (rated) torque MN	m)///	5	10	20	50	100	200	500	1000	
nominal (rated) sensitivity (nominal (rated) output signal at nominal (rated) torque)	0/	2								
Sensitivity tolerance	70	<± 0.2								
Temperature effect per 10K in the nominal (rated)	%					< ±0.1				
temperature range	%					$< \pm 0.1$				
on the output signal (related to actual value)						< ±0.1				
on the zero signal (related to nominal (rated) sensitivity)			1							
Non-linearity including hysteresis										
(related to nominal (rated) sensitivity)	%	0.2				0.1				
Relative standard deviation of reproducibility per DIN 1319 (related to variation of the output signal)	%	< ±0.05								
Input resistance at reference temperature (T4A)	ohm	350±1.8								
T4WA–S3 torque measuring system	ohm	420±40								
Output resistance at reference temperature	ohm	350 ± 1.5								
Maximum permissible excitation voltage	V				2	0				
Nominal (rated) range of the excitation voltage	V	0.5 12								
Reference temperature	°C	+23								
Nominal (rated) temperature range	°C	+10+60								
Operating temperature range	°C	-10+60								
Storage temperature range	°C	-50+70								
Torsional stiffness approx.	kN⋅m/rad	0.29	0.61	1.08	2.42	5.57	7.53	27.3	65	
Torsion angle at nominal (rated) torque, approx.	degrees	1	0.9	1.1	1.1	1.0	1.5	1.0	0.9	
Mass moment of inertia	gm ²	0.04	0.04	0.04	0.04	0.04	0.04	0.28	0.44	
Maximum permissible rotational speed	min ⁻¹	4000								
Brush service life, approx.	revs.	3 x 10 ⁸ 6 x 10						10 ⁸		
Mechanical values (related to nominal (rated) torque)										
Static limit load	%			150			12	25	150	
Static breaking load	%	300				200 300		300		
Lateral limit force on shaft ¹⁾	N	5	10	20	50	80	125	235	370	
Longitudinal limit force on shaft ¹⁾	kN	0.35	0.7	2.0	3.5	5.5	8.8	16.4	25.9	
Limit bending moment on shaft ¹⁾	N∙m	0.75	1.5	3	6	11	23	57	114	
Oscillation width per DIN 50100 (rel. to nominal (rated) torque)	%	70 (peak-to-peak)								
Upper and lower limits		+M _N and -M _N								
Impact resistance, test severity level per DIN IEC68,										
Part 2-27; IEC 68-2-27-1987 Number		1000								
Duration Acceleration (balf sine)	ms m/a ²	3								
Vibration in 3 directions according to DIN IEC 68: Part 26: IEC 682271987	11/5-	000								
Frequency range	⊔ -				-	05				
Duration	nz h				5	65				
Acceleration (amplitude)	m/s ²	50								
Weight approx	ka			0	ن ۱	0		10	24	
Degree of protection per DIN IEC 60529	ĸġ	IP50								
Betational speed/angle of rotation measuring system (T/W)	A only vorsi	on no lo	ngor av	ailabla)		50				
Anale of restation transducer with two output eignels						/4 porior	4			
Tolerance of the slot width	mm	each su puises per revolution, onset by 1/4 period								
Average ontical diameter					±Ο	.05				
T4WA-S3/5 N·m 200 N·m	mm	200702 31								
T4WA-S3/500 N·m and 1 kN·m	mm	approx. 51								
Output voltage (square-wave)	V	5, TTL level								
Supply voltage	V _{DC}	4.85.2								
Max. current consumption	mĂ	50								

¹⁾ Any irregular stress is only permissible up to the specified limit, provided none of the others can occur. If this condition is not met, the limit values must be reduced. If 30% of the limit bending moment and lateral limit force occur at the same time, only 40% of the longitudinal limit force is permissible and the nominal (rated) torque must not be exceeded. The permissible bending moments, longitudinal and lateral forces, and approx. 1% of the nominal (rated) torque can affect the measurement result.

Subject to modifications.

All product descriptions are for general information only. They are not to be understood as a guarantee of quality or durability.

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