

T28 SLIP-RING SQUARE DRIVE ROTARY TORQUE TRANSDUCER (U.S. & METRIC)

FEATURES & BENEFITS

- Capacities from 1 to 5K Nm (8.85 to 44.3K lbf-in)
- Slip-ring torque sensor for screw driving systems
- High accuracy
- Integrated speed / angle measurement
- Drive-square socket
- Output-square drive
- Very short axial length
- High torsional stiffness
- Simple handling and assembly
- Special versions on request

SPECIFICATIONS

ACCURACY – (MAX ERROR)		
Combined error – %FS		±0.1
Nonrepeatability – %		±0.05
TEMPERATURE		
Effect on zero – %RO / deg	°C	±0.02
Effect on output – % / deg	°C	±0.01
Rated range	°C	+5 to +50
	°F	+41 to +122
Operating range	°C	-10 to +60
	°F	+14 to +140
ELECTRICAL		
Output – mV/V	1 Nm	±0.5
	8.85 lbf-in	
	2 - 500 Nm	±1.0
	17.7 - 4.43K lbf-in	
Excitation Voltage- VDC MAX		12
Bridge resistance – Ohm		350
Electrical connection – pin		12
MECHANICAL		
Safe overload – %RO		150
Shaft material		Alloy steel

OPTIONS

- Control Signal

TYPICAL APPLICATIONS

- Assembly technology
- Process measuring and control technology
- Automotive industry
- Measuring and control devices
- Tool engineering
- Special mechanical engineering

STANDARD CONFIGURATION



MODEL T28 (Shown)

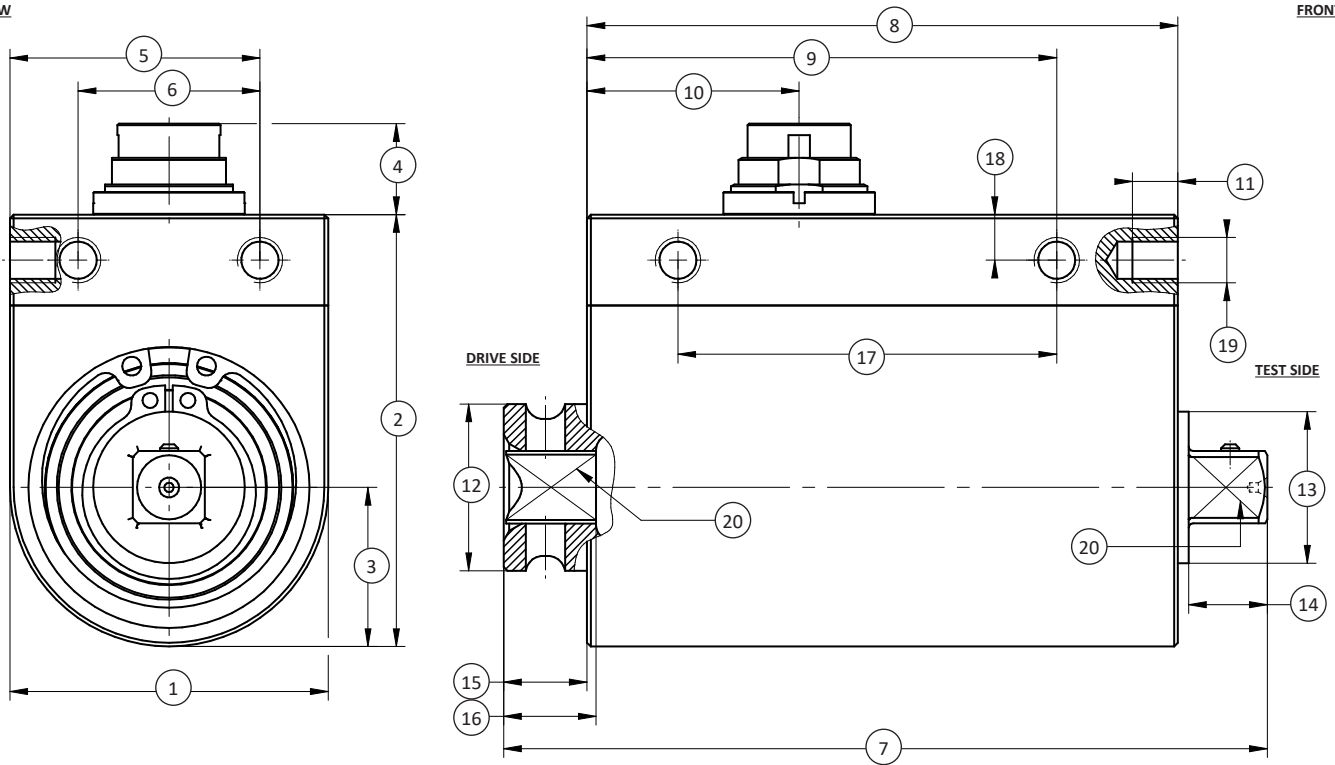
ELECTRICAL CONNECTION

Pin	T28 12-Pin with Encoder	
	Function	
A	Excitation (-)	
B	Excitation (+)	
C	Signal (+)	
D	Signal (-)	
E	Excitation Angle (GND)	
F	Excitation Angle (5V)	
G	Signal Angle A (5V TTL)	
H	Signal Angle B (5V TTL)	
J	Signal Angle (GND)	
K	Control signal (option)	
L	NC	
M	Shield	

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SIDE VIEW

FRONT VIEW



DIMENSIONS

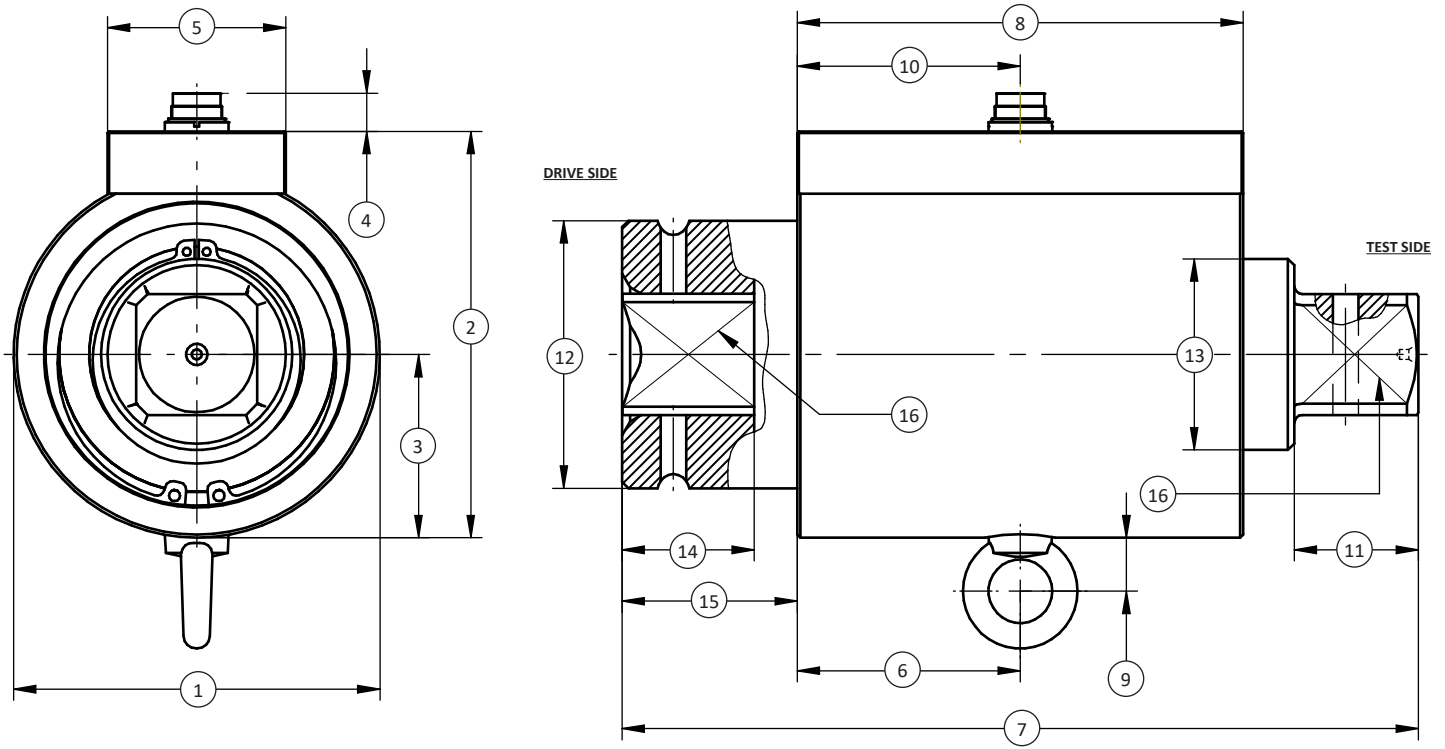
See Drawing	Metric (Nm)	U.S. (lbf-in)	Metric (Nm)	U.S. (lbf-in)	Metric (Nm)	U.S. (lbf-in)	Metric (Nm)	U.S. (lbf-in)	Metric (Nm)	U.S. (lbf-in)
	1, 2, 5, 12		25, 63		100, 160, 200		500		1000	
	mm	in	mm	in	mm	in	mm	in	mm	in
(1)	34.0	1.33	42.0	1.65	42.0	1.65	56.0	2.20	56.0	2.20
(2)	48.5	1.90	57.0	2.24	57.0	2.24	70.0	2.75	70.0	2.75
(3)	17.0	0.67	21.0	0.83	21.0	0.83	28.0	1.10	28.0	1.10
(4)	~ 13.5	~ 0.53	~ 12.0	~ 0.47	~ 12.0	~ 0.47	~ 12.0	~ 0.47	~ 12.0	~ 0.47
(5)	22.0	0.87	33.0	1.30	33.0	1.30	40.0	1.57	40.0	1.57
(6)	10.0	0.39	24.0	0.94	24.0	0.94	24.0	0.94	24.0	0.94
(7)	84.0	3.30	100.8	3.97	106.0	4.17	135.0	5.31	177.0	6.97
(8)	65.0	2.56	78.0	3.07	78.0	3.07	92.0	3.62	92.0	3.62
(9)	54.5	2.15	62.0	2.44	62.0	2.44	79.0	3.11	79.0	3.11
(10)	30.5	1.20	28.0	1.10	28.0	1.10	43.0	1.69	43.0	1.69
(11)	4.0	0.16	6.0	0.24	6.0	0.24	10.0	0.39	10.0	0.39
(12)	∅13.0	∅0.51	∅22.0	∅0.87	∅29.8	∅1.17	∅44.0	∅1.73	∅54.0	∅2.13
(13)	∅10.0	∅0.39	∅20.0	∅0.79	∅20.0	∅0.79	∅25.0	∅0.98	∅35.0	∅1.38
(14)	7.2	0.28	10.4	0.41	15.1	0.59	22.9	0.90	27.4	1.08
(15)	8.0	0.31	11.0	0.43	12.0	0.47	24.0	0.94	26.5	1.04
(16)	9.0	0.35	12.2	0.48	15.0	0.59	18.0	0.71	53.0	2.09
(17)	9.0	0.35	50.0	1.97	50.0	1.97	66.0	2.60	66.0	2.60
(18)	6.5	0.26	6.0	0.24	6.0	0.24	6.0	0.24	6.0	0.24
(19)	M4 (6 x)		M6 (4 x)		M6 (4 x)		M6 (6 x)		M6 (6 x)	
(20)	1/4"		3/8"		1/2"		3/4"		1"	
Weight	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs
	0.3	0.7	0.5	1.1	0.6	1.3	1.1	2.4	2.0	4.4

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SIDE VIEW

FRONT VIEW



DIMENSIONS

See Drawing	Metric (Nm)		U.S. (lbf-in)	
	2000, 5000			
	mm		in	
(1)	Ø115.0		Ø4.52	
(2)	127.5		5.01	
(3)	57.5		2.26	
(4)	~ 12.0		~ 0.47	
(5)	56.0		2.20	
(6)	70.0		2.75	
(7)	250.0		9.84	
(8)	140.0		5.51	
(9)	~ 17.0		~ 0.67	
(10)	70.0		2.75	
(11)	39.0		1.53	
(12)	Ø84.0		Ø3.30	
(13)	Ø60.0		Ø2.36	
(14)	41.5		1.63	
(15)	55.0		2.16	
(16)	1 1/2"			
Weight	kg		lbs	
	8.0		17.6	

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PERFORMANCE PARAMETERS

CAPACITY		MAX RPM MIN ⁻¹	SPRING RATE NM/rad	MOMENT OF INERTIA – J (Kg•m ²)		MAX THRUST LOAD ²		MAX SHEAR LOAD ²	
Nm	lbf-in			Drive Side	Test Side	N	lbf	N	lbf
1	8.85	2000	2.2E+02	3.5E-06	1.5E-06	380	85.4	5.3	1.19
2	17.7	2000	2.2E+02	3.5E-06	1.5E-06	380	85.4	5.3	1.19
5	44.3	2000	5.5E+02	3.5E-06	1.5E-06	690	155.1	13	2.92
12	106.2	2000	6.8E+02	3.5E-06	1.5E-06	840	188.8	17	3.82
25	221.3	1500	4.4E+03	1.2E-05	1.1E-05	2100	472.1	45	10.1
63	557.6	1500	9.2E+03	1.2E-05	1.1E-05	3900	876.8	115	25.9
100	885.1	1500	1.3E+04	1.6E-05	1.2E-05	5200	1169.0	170	38.2
160	1141K	1500	1.3E+04	1.6E-05	1.2E-05	5500	1236.4	180	40.5
200	1.77K	1500	1.3E+04	1.6E-05	1.2E-05	5500	1236.41	180	40.5
500	4.43K	1000	3.4E+04	9.0E-05	3.7E-05	10000	2248.1	360	80.9
1000	8.85K	1000	8.7E+04	3.5E-04	1.0E-04	16200	3642.0	680	152.9
2000	17.7K	500	3.9E+05	3.2E-03	1.2E-03	34100	7666.1	1800	404.7
5000	44.3K	500	4.7E+05	3.3E-03	1.3E-03	46000	10341.2	2750	618.2

BRUSH LIFE

Speed (rpm)	CAPACITY					
	Metric (Nm)	U.S. (lbf-in)	Metric (Nm)	U.S. (lbf-in)	Metric (Nm)	U.S. (lbf-in)
	1, 2, 5, 10	8.85, 17.7, 44.3, 88.5	20, 50, 100	177, 443, 885	200, 500	1.77K, 4.43K
10	10 years		7.6 years		5.7 years	
100	138 days		62 days		55 days	
500	233 hours		166 hours		100 hours	
1000	83 hours		50 hours		33 hours	
1500	44 hours		27 hours		-	
2000	25 hours		-		-	