

T7 DUAL RANGE-PEDESTAL ROTARY TORQUE TRANSDUCER (U.S. & METRIC)

FEATURES & BENEFITS

- Dual range capacities – 10:1 ratio (5/0.5 to 20K/2K Nm) (44.3/4.43 to 177K to 17.7K lbf-in)
- ±5 VDC output
- Digital electronics
- Stainless steel shaft
- 12 to 28 VDC supply
- Contactless
- 5 kHz sample rate - each range
- 16-bit resolution

SPECIFICATIONS

ACCURACY – (MAX ERROR)		
Combined error – %FS		±0.1
Nonrepeatability – %FS		±0.02
TEMPERATURE		
Effect on Zero – %RO / deg	°C	±0.02
Effect on Output – % / deg	°C	±0.01
Rated Range	°C	+5 to +45
	°F	+41 to +113
Operating Range	°C	0 to +60
	°F	+32 to +140
ELECTRICAL		
Output – VDC		±5
Bandwidth – kHz – dB		3, 3
Calibration Signal – %RO		100
Speed Output – puls/rev.		60
Supply Voltage – VDC		+12 to +28
Supply Current – mA		60
Electrical Connection – pin		12
Resolution – bit		16
Sample Rate – kHz each range		5
MECHANICAL		
Safe Overload – %RO		200
Max Speed – RPM		Varies with capacity (see table)
Shaft Material		Stainless steel
Housing Material		Aluminum

U.S. dimensions and capacities are provided for conversion only. Standard products have International System of Units (SI) capacities and dimensions.

STANDARD CONFIGURATION

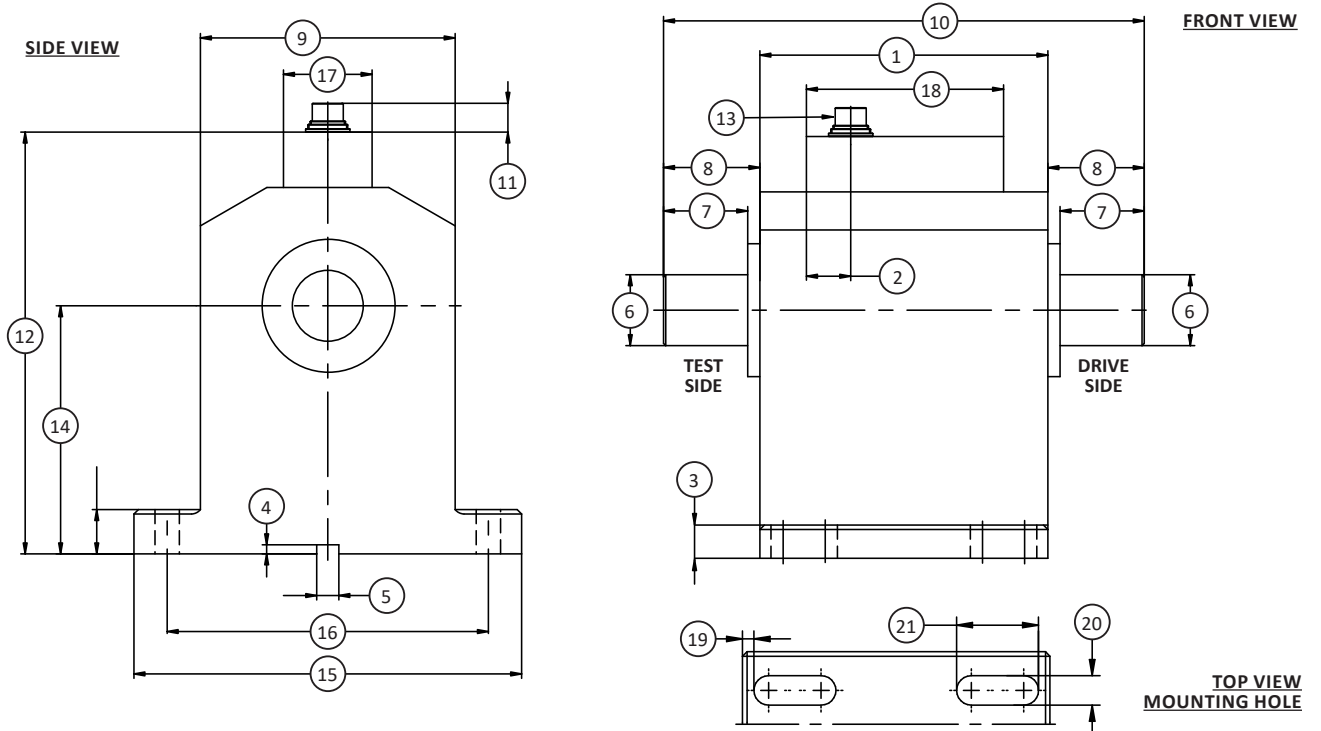


MODEL T7 (Shown)

OPTIONS

- Speed & angle measurement - 360 pulse TTL, 2-tracks 90° offset, available on capacities up to 1K Nm (8.85K lbf-in) only
- Speed output - 60 pulse TTL, 1-track, available on capacities 2K Nm (17K lbf-in) & above
- +10 V torque output
- RS485
- Keyed shafts – per Din 6885.1

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DIMENSIONS

See Drawing	CAPACITIES							
	Metric (Nm)	U.S. (lbf-in)	Metric (Nm)	U.S. (lbf-in)	Metric (Nm)	U.S. (lbf-in)	Metric (Nm)	U.S. (lbf-in)
	5/0.5	44.3/4.43	10/1	88.5/8.85	20/2, 30/3	177/17.7, 265/26.5	50/5, 100/10	443/44.3, 885/88.5
	mm	in	mm	in	mm	in	mm	in
(1)	71.5	2.81	71.5	2.81	71.5	2.81	71.5	2.81
(2)	12	0.5	12	0.5	12	0.5	12	0.5
(3)	15	0.6	15	0.6	15	0.6	15	0.6
(4)	3.3	0.13	3.3	0.13	3.3	0.13	3.3	0.13
(5)	Ø8 N9	Ø0.3150 / 0.3135	Ø8 N9	Ø0.3150 / 0.3135	Ø8 N9	Ø0.3150 / 0.3135	Ø8 N9	Ø0.3150 / 0.3135
(6)	Ø8 g6	Ø0.3148 / 0.3144	10g6	Ø0.3935 / 0.3931	18g6	Ø0.7084 / 0.7080	18g6	Ø0.7084 / 0.7080
(7)	17	0.7	17	0.7	18	0.7	36	1.4
(8)	18	0.7	18	0.7	20	0.8	38	1.5
(9)	44	1.7	44	1.7	44	1.7	44	1.7
(10)	107.5	4.23	107.5	4.23	111.5	4.39	147.5	5.81
(11)	14	0.5	14	0.5	14	0.5	14	0.5
(12)	93.3	3.67	93.3	3.67	93.3	3.67	93.3	3.67
(13)	Connector12-pin		Connector12-pin		Connector12-pin		Connector12-pin	
(14)	45	1.8	45	1.8	45	1.8	45	1.8
(15)	90	3.5	90	3.5	90	3.5	90	3.5
(16)	70	2.8	70	2.8	70	2.8	70	2.8
(17)	40	1.6	40	1.6	40	1.6	40	1.6
(18)	-		-		-		-	
(19)	20.75	0.817	20.75	0.817	20.75	0.817	20.75	0.817
(20)	9	0.4	9	0.4	9	0.4	9	0.4
(21)	21	0.8	21	0.8	21	0.8	21	0.8

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DIMENSIONS (CONTINUED)

See Drawing	CAPACITIES							
	Metric (Nm)	U.S. (lbf-in)	Metric (Nm)	U.S. (lbf-in)	Metric (Nm)	U.S. (lbf-in)	Metric (Nm)	U.S. (lbf-in)
	200/20, 500/50	1.77K/177, 4.43K/443	1K/100	8.85K/885	2K/200, 5K/500	17.7K/1.77K, 44.3K/4.43K	10K/1K, 20K/2K	88.5K/8.85K, 177K/17.7K
	mm	in	mm	in	mm	in	mm	in
(1)	130	29.2	130	29.2	135	30.3	190	42.7
(2)	20	4.5	20	4.5	20	4.5	20	4.5
(3)	20	4.5	20	4.5	25	5.6	40	9.0
(4)	4.1	0.92	4.1	0.92	4.1	0.92	4.1	0.92
(5)	∅10 N9	∅0.3937 / 0.3933	∅10 N9	∅0.3937 / 0.3933	∅10 N9	∅0.3937 / 0.3933	∅10 N9	∅0.3937 / 0.3933
(6)	∅32 g6	∅1.2598 / 1.2574	∅50 g6	∅1.9685 / 1.9661	∅70 g6	∅2.7559 / 2.7530	∅110 g6	∅4.3307 / 4.3273
(7)	38	1.5	58	2.3	110	4.3	120	4.7
(8)	43.5	1.71	66	2.6	121	4.8	140	5.5
(9)	115	4.5	115	4.5	139	5.5	210	8.3
(10)	217	8.5	262	10.3	377	14.8	470	18.5
(11)	13	0.5	13	0.5	13	0.5	13	0.5
(12)	190.4	7.50	190.4	7.50	251.5	9.90	343	13.5
(13)	Connector 12-pin		Connector 12-pin		Connector 12-pin		Connector 12-pin	
(14)	112	4.4	112	4.4	160	6.3	215	8.5
(15)	175	6.9	175	6.9	207	8.1	300	11.8
(16)	145	5.7	145	5.7	173	6.8	260	10.2
(17)	40	1.6	40	1.6	40	1.6	40	1.6
(18)	89	3.5	89	3.5	89	3.5	89	3.5
(19)	5	0.2	5	0.2	5	0.2	15	0.6
(20)	11	0.4	11	0.4	13	0.5	17	0.7
(21)	30	1.2	30	1.2	36	1.4	45	1.8

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PERFORMANCE PARAMETERS

CAPACITY		MAX RPM	SPRING RATE	MOMENT OF INERTIA – J (Kgx ^m ²)		MAX THRUST LOAD		MAX SHEAR FORCE	
Nm	lbf-in		(NM/rad)	Drive Side	Test Side	N	lbf	N	lbf
5/0.5	44.3/4.43	12,000	2.4x10 ²	9.7x10 ⁻⁶	7.9x10 ⁻⁶	62	13.9	3	0.67
10/1	88.5/8.85	12,000	7.2x10 ²	1.0x10 ⁻⁵	7.9x10 ⁻⁶	62	13.9	12	2.70
20/2	177/17.7	12,000	1.9x10 ³	1.1x10 ⁻⁵	9.9x10 ⁻⁶	62	13.9	23	5.17
30/3	266/26.6	12,000	2.9x10 ³	1.1x10 ⁻⁵	9.9x10 ⁻⁶	62	13.9	35	7.87
50/5	443/44.3	12,000	5.4x10 ³	1.4x10 ⁻⁵	1.1x10 ⁻⁵	62	13.9	45	10.1
100/10	885/88.5	12,000	8.0x10 ³	1.4x10 ⁻⁵	1.2x10 ⁻⁵	62	13.9	64	14.4
200/20	1.77K/177	7,000	3.3x10 ⁴	1.3x10 ⁻³	8.0x10 ⁻⁴	770	173	175	39.3
500/50	4.43K/443	7,000	7.7x10 ⁴	1.3x10 ⁻³	8.0x10 ⁻⁴	770	173	410	92.2
1K/100	8.85/885	7,000	1.9x10 ⁵	1.6x10 ⁻³	1.1x10 ⁻³	770	173	530	119
2K/200	17.7K/1.77K	5,500	5.1x10 ⁵	5.4x10 ⁻³	4.2x10 ⁻³	1100	247	720	162
5K/500	44.3K/4.43K	5,500	7.8x10 ⁵	5.5x10 ⁻³	4.3x10 ⁻³	1100	247	860	193
10K/1K	88.5K/8.85	3,500	2.9x10 ⁶	4.1x10 ⁻²	3.6x10 ⁻²	2800	629	2400	540
20K/2K	177K/17.7K	3,500	3.8x10 ⁶	4.1x10 ⁻²	3.7x10 ⁻²	2800	629	2400	540

ELECTRICAL CONNECTION

Pin	12-PIN DUAL RANGE	
	Function	Description
A	NC	–
B	Option Angle B, option	5 VDC TTL
C	Signal 1 (+)	±5 (±10) VDC
D	Signal (GND)	0 VDC
E	Supply (GND)	0 VDC
F	Supply (+)	12-28 VDC
G	Option Angle A, option	5 VDC TTL
H	Signal 2 (+)	±5 (±10) VDC
J	NC	–
K	Cal. Control	L < 2.0V / H > 3.5V
L	NC	–
M	Shield	Transducer housing