

T7 DUAL RANGE-PEDESTAL ROTARY TORQUE TRANSDUCER (US & 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
Non-repeatability – %FS		±0.02
TEMPERATURE		
Effect on Zero – %RO / °C		±0.02
Effect on Output – % / °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

STANDARD CONFIGURATION

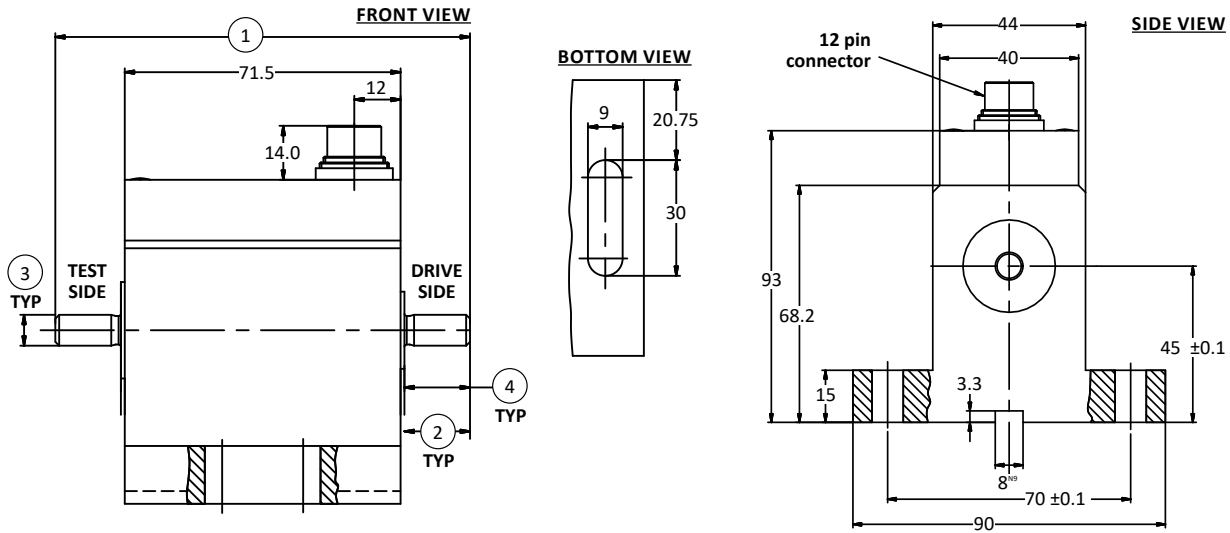


MODEL T7 (Shown)

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

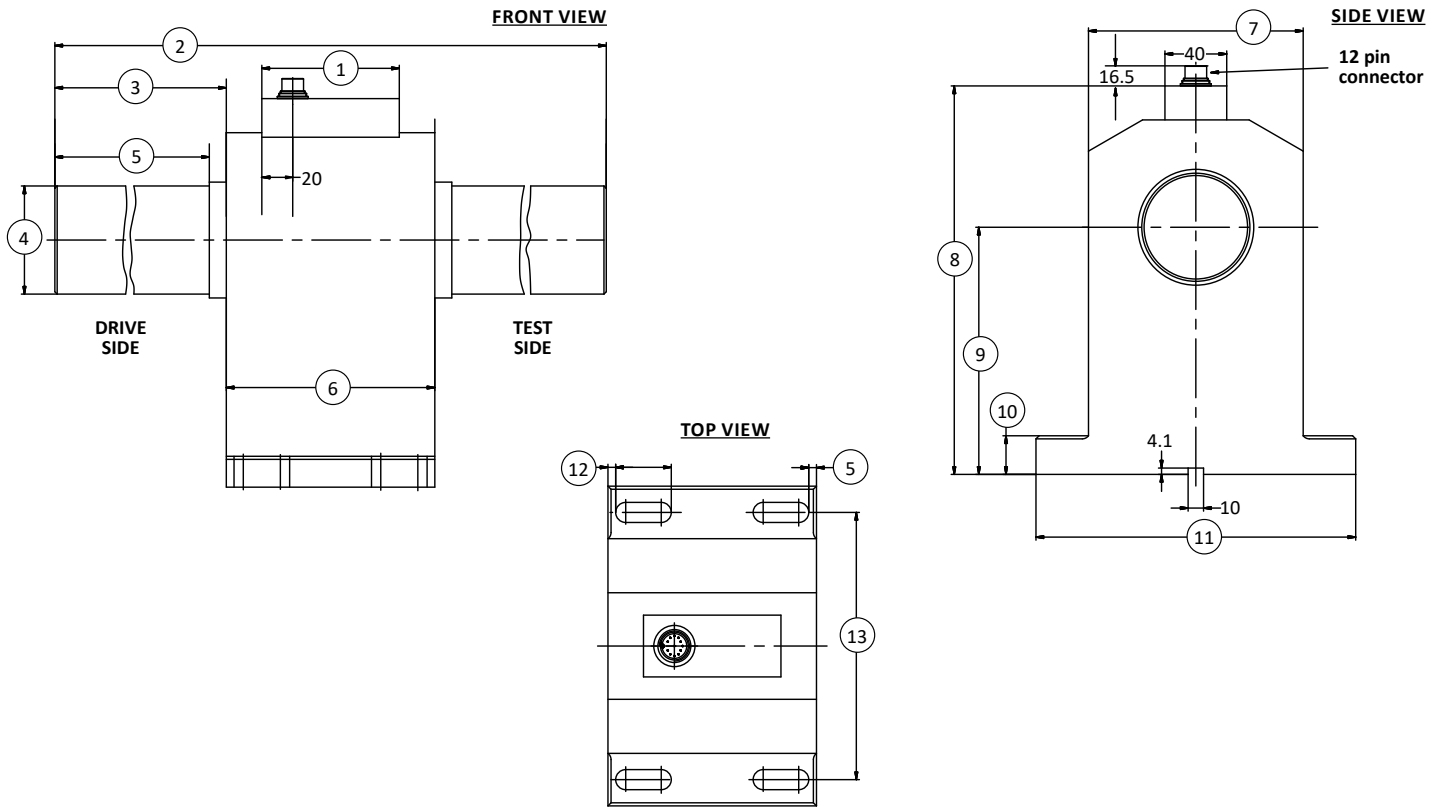
T7 DUAL RANGE-PEDESTAL ROTARY TORQUE TRANSDUCER (US & METRIC)



DIMENSIONS

See Drawing	CAPACITIES							
	Metric (Nm)	US (lbf-in)	Metric (Nm)	US (lbf-in)	Metric (Nm)	US (lbf-in)	Metric (Nm)	US (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)	107.5	4.23	107.5	4.23	111.5	4.39	147.5	5.81
(2)	18	0.71	18	0.71	20	0.79	38	1.50
(3)	8g6	0.3148/0.3144	10g6	0.3935/0.3931	18g6	0.7087/0.7082	18g6	0.7087/0.7082
(4)	17	0.67	17	0.67	18	0.71	36	1.42

T7 DUAL RANGE-PEDESTAL ROTARY TORQUE TRANSDUCER (US & METRIC)



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, 300/30, 500/50	1.77K/177, 2.65K/265, 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)	89	3.5	89	3.50	89	3.50	89	3.50
(2)	217	8.54	262	10.31	377	14.84	470	18.50
(3)	43.5 TYP	1.71 TYP	66 TYP	2.60 TYP	121 TYP	4.76 TYP	140 TYP	5.51 TYP
(4)	32h6	1.2595/1.2598	50h7	1.9685/1.9675	70h7	2.7559/2.7547	110h7	4.3307/4.3293
(5)	38 TYP	1.50 TYP	58 TYP	2.28 TYP	110 TYP	4.33 TYP	120 TYP	4.72 TYP
(6)	130	5.12	130	5.12	135	5.31	190	7.48
(7)	115	4.53	115	4.53	139	5.47	210	8.27
(8)	190.4	7.50	190.4	7.50	251.5	9.90	343	13.50
(9)	112 (±0.2)	4.41 (±0.008)	112 (±0.2)	4.41 (±0.008)	160 (±0.2)	6.30 (±0.008)	215 (±0.2)	8.46 (±0.008)
(10)	20	0.79	20	0.79	25	0.98	40	1.57
(11)	175	6.89	175	6.89	207	8.15	300	11.81
(12)	30 TYP	1.18 TYP	30 TYP	1.18 TYP	36 TYP	1.42 TYP	45 TYP	1.77 TYP
(13)	145 (±0.2)	5.71 (±0.008)	145 (±0.2)	5.71 (±0.008)	173 (±0.2)	6.81 (±0.008)	260 (±0.2)	10.24 (±0.008)

T7 DUAL RANGE-PEDESTAL ROTARY TORQUE TRANSDUCER (US & METRIC)

PERFORMANCE PARAMETERS

CAPACITY		MAX RPM	SPRING RATE	MOMENT OF INERTIA – J (Kgxm ²)		MAX THRUST LOAD	
Nm	lbf-in		(NM/rad)	Drive Side	Test Side	N	lbf
5/0.5	44.3/4.43	12,000	2.4x10 ²	9.7x10 ⁻⁶	7.9x10 ⁻⁶	50	11.2
10/1	88.5/8.85	12,000	7.2x10 ²	1.0x10 ⁻⁵	7.9x10 ⁻⁶	50	11.2
20/2	177/17.7	12,000	2.2x10 ³	1.1x10 ⁻⁵	9.9x10 ⁻⁶	300	67.4
30/3	266/26.6	12,000	2.8x10 ³	1.1x10 ⁻⁵	9.9x10 ⁻⁶	1K	225
50/5	443/44.3	12,000	5.4x10 ³	1.4x10 ⁻⁵	1.1x10 ⁻⁵	1.6K	360
100/10	885/88.5	12,000	8.0x10 ³	1.4x10 ⁻⁵	1.2x10 ⁻⁵	2.6K	585
200/20	1.77K/177	7,000	3.7x10 ⁴	1.3x10 ⁻³	8.0x10 ⁻⁴	3.2K	719
300/30	2.66K/266	7,000	5.4x10 ⁴	1.3x10 ⁻³	8.0x10 ⁻⁴	7.5K	16.9K
500/50	4.43K/443	7,000	8.1x10 ⁴	1.3x10 ⁻³	8.0x10 ⁻⁴	7.5K	16.9K
1K/100	8.85/885	7,000	1.9x10 ⁵	1.6x10 ⁻³	1.1x10 ⁻³	10K	22.5K
2K/200	17.7K/1.77K	5,500	5.1x10 ⁵	5.4x10 ⁻³	4.2x10 ⁻³	18K	4.05K
5K/500	44.3K/4.43K	5,500	7.8x10 ⁵	5.5x10 ⁻³	4.3x10 ⁻³	32K	7.19K
10K/1K	88.5K/8.85	3,500	3.1x10 ⁶	4.1x10 ⁻²	3.6x10 ⁻²	125K	28.1K
20K/2K	177K/17.7K	3,500	3.7x10 ⁶	4.1x10 ⁻²	3.7x10 ⁻²	200K	45K

ELECTRICAL CONNECTION

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