

# Model T7 Dual Range Precision-Pedestal Rotary Torque Transducer

Why the Interface model T7 Dual Range Precision-Pedestal Rotary Torque Transducer is the best in class:

- Integral mounting base
- Dual range capacities - 10:1 ratio (5/0.5 to 20K/2K Nm) (44.3/4.43 to 177K to 17.7K lb-in)
- $\pm 5$  VDC output
- Stainless steel shaft
- 5 kHz sample rate
- 12 to 28 VDC supply
- Digital electronics
- Contactless



*T7 Dual Range Precision-Pedestal Rotary Torque Transducer*

## OPTIONS

Speed & Angle Measurement - 360 Pulse TTL,  
2-Tracks 90° Offset, Available on capacities up to  
1,000 Nm only  
Speed Output - 60 Pulse TTL, 1-Track, Available on  
capacities 2,000 Nm & above  
 $\pm 10$  V Torque Output  
RS485  
High Speed to 12,000 RPM  
Keyed Shafts  
SAE Sized Shafts

## SPECIFICATIONS

### ACCURACY – (MAX ERROR)

Combined Error—% FS ..... $\pm 0.1$   
Nonrepeatability—% ..... $\pm 0.02$

### TEMPERATURE

Effect on Zero—% RO/°C ..... $\pm 0.02$   
Effect on Output—%/°C ..... $\pm 0.01$   
Rated Range—°C .....+5 to +45  
Operating Range—°C .....0 to +60

### ELECTRICAL

Output—VDC ..... $\pm 5$   
Bandwidth, Hz .....3 kHz-3dB  
Calibration Signal—% RO .....100  
Speed Output - puls/rev .....60  
Supply Voltage—VDC .....12 to 28  
Supply Current—mA .....60  
Electrical Connection .....12-pin

### MECHANICAL

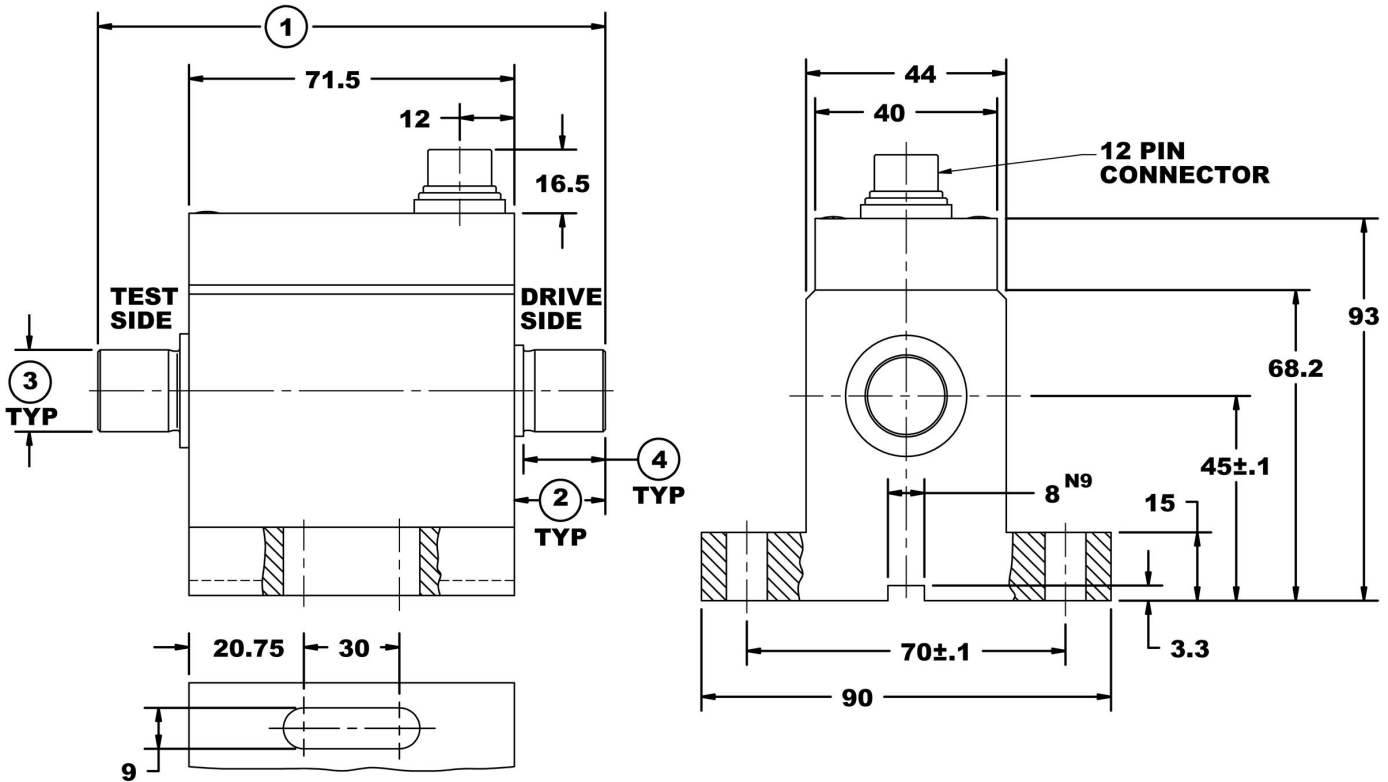
Safe Overload—% RO .....200  
Cyclic Load Rating—% RO ..... $\pm 70$  peak  
Max Speed - rpm .....Varies with  
capacity,  
see table

Shaft .....Stainless steel  
Housing .....Aluminum

**Model T7 Dual Range Precision Rotary Torque Transducer -**  
Capacities 5/0.5 to 50/5 Nm

**DIMENSIONS**

Nominal Dual Range Torque (Range 1/Range 2)								
Capacity (Nm)	5/0.5		10/1		20/2, 30/3		50/5, 100/10	
Equivalent (lb-in)	44.3/4.43		88.5/8.85		177/17.7, 265/26.5		443/44.3, 885/88.5	
	inch	mm	inch	mm	inch	mm	inch	mm
①	4.23	107.5	4.23	107.5	4.39	111.5	5.81	147.5
②	0.71	18	0.71	18	0.79	20	1.50	38
③	0.3148/ 0.3144	8g6	0.3935/ 0.3931	10g6	0.7087/ 0.7082	18g6	0.7087/ 0.7082	18g6
④	0.67	17	0.67	17	0.71	18	1.42	36



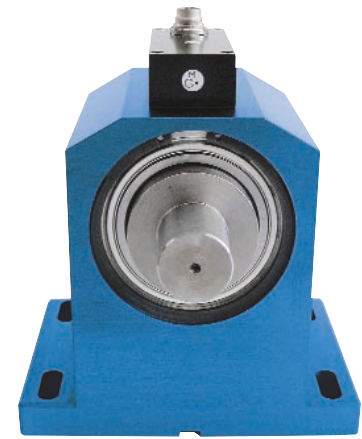
Dimensions in mm

**Model T7 Dual Range Precision-Pedestal Rotary Torque Transducer -**

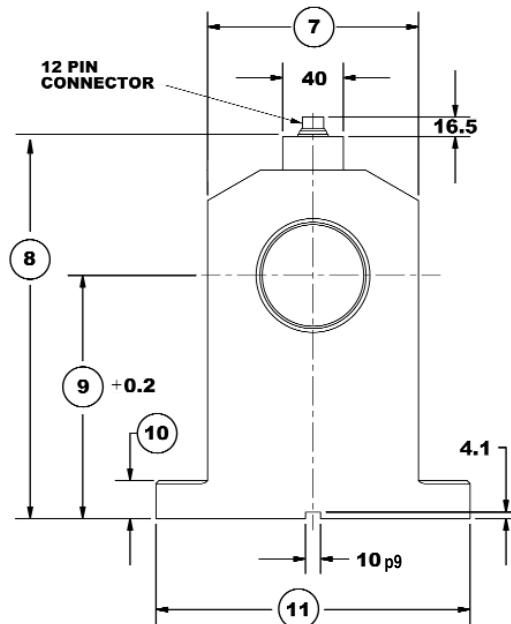
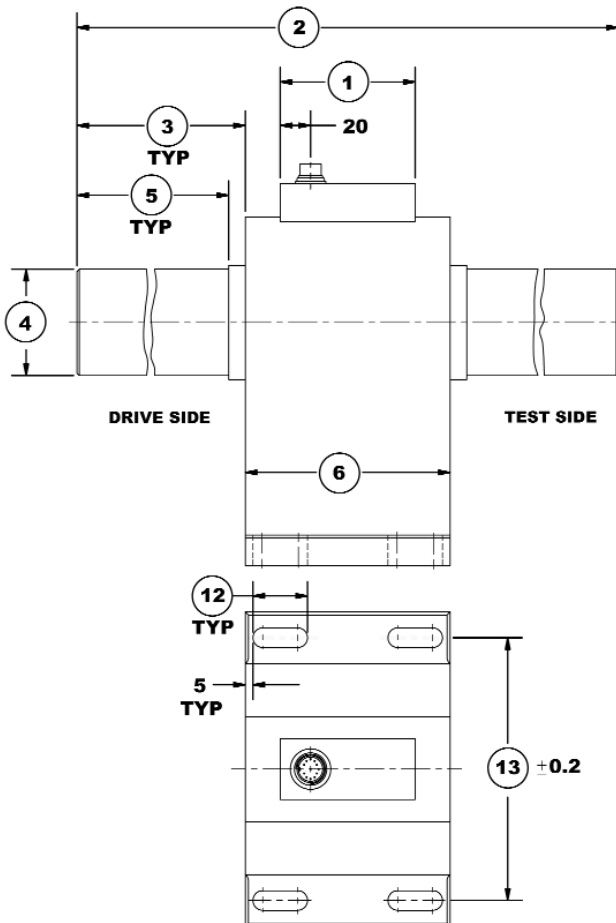
Capacities 200/20 to 20K/2K Nm

**DIMENSIONS**

Nominal Dual Range Torque (Range 1/Range 2)								
Capacity (Nm)	200/20, 300/30, 500/50		1K/100		2K/200, 5K/500		10K/1K 20K/2K	
Equivalent (lb-in)	1.77K/177, 2.65K/265, 4.43K/443		8.85K/885		17.7K/1.77K, 44.3K/4.43K		88.5K/8.85K 177K/17.7K	
	inch	mm	inch	mm	inch	mm	inch	mm
①	3.50	89	3.50	89	3.50	89	3.50	89
②	8.54	217	10.31	262	14.84	377	18.50	470
③	1.71	43.5	2.60	66	4.76	121	5.51	140
④	1.2595/ 1.2598	32 h6	1.9685/ 1.9675	50 h7	2.7559/ 2.7547	70 h7	4.3307/ 4.3293	110 h7
⑤	1.50	38	2.28	58	4.33	110	4.72	120
⑥	5.12	130	5.12	130	5.31	135	7.48	190
⑦	4.53	115	4.53	115	5.47	139	8.27	210
⑧	7.50	190.4	7.50	190.4	9.90	251.5	13.50	343
⑨	4.41	112	4.41	112	6.30	160	8.46	215
⑩	0.79	20	0.79	20	0.98	25	1.57	40
⑪	6.89	175	6.89	175	8.15	207	11.81	300
⑫	1.18	30	1.18	30	1.42	36	1.77	45
⑬	5.71	145	5.71	145	6.81	173	10.24	260



**T7 Dual Range Precision-Pedestal Rotary Torque Transducer**



*Dimensions in mm*

**T7 DUAL RANGE PRECISION-PEDESTAL ROTARY TORQUE TRANSDUCER PERFORMANCE PARAMETERS**

CAPACITY (Nm) (Range 1/ Range 2)	MAX RPM		SPRINGRATE (Nm/rad)	MOMENT OF INERTIA, J (Kgxm <sup>2</sup> )		MAX THRUST LOAD (N)
	Standard	Special		Drive Side	Test Side	
5/0.5	8,000	12,000	2.4x10 <sup>2</sup>	9.7x10 <sup>-6</sup>	7.9x10 <sup>-6</sup>	50
10/1	8,000	12,000	7.2x10 <sup>2</sup>	1.0x10 <sup>-5</sup>	7.9x10 <sup>-6</sup>	50
20/2	8,000	12,000	2.2x10 <sup>3</sup>	1.1x10 <sup>-5</sup>	9.9x10 <sup>-6</sup>	300
30/3	8,000	12,000	2.8x10 <sup>3</sup>	1.1x10 <sup>-5</sup>	9.9x10 <sup>-6</sup>	1,000
50/5	6,000	12,000	5.4x10 <sup>3</sup>	1.4x10 <sup>-5</sup>	1.1x10 <sup>-5</sup>	1,600
100/10	6,000	12,000	8.0x10 <sup>3</sup>	1.4x10 <sup>-5</sup>	1.2x10 <sup>-5</sup>	2,600
200/20	4,000	7,000	3.7x10 <sup>4</sup>	1.3x10 <sup>-3</sup>	8.0x10 <sup>-4</sup>	3,200
300/30	4,000	7,000	5.4x10 <sup>4</sup>	1.3x10 <sup>-3</sup>	8.0x10 <sup>-4</sup>	7,500
500/50	4,000	7,000	8.1x10 <sup>4</sup>	1.3x10 <sup>-3</sup>	8.0x10 <sup>-4</sup>	7,500
1,000/100	4,000	7,000	1.9x10 <sup>5</sup>	1.6x10 <sup>-3</sup>	1.1x10 <sup>-3</sup>	10,000
2,000/200	3,500	5,500	5.1x10 <sup>5</sup>	5.4x10 <sup>-3</sup>	4.2x10 <sup>-3</sup>	18,000
5,000/500	3,500	5,500	7.8x10 <sup>5</sup>	5.5x10 <sup>-3</sup>	4.3x10 <sup>-4</sup>	32,000
10,000/1,000	3,000	3,500	3.1x10 <sup>6</sup>	4.1x10 <sup>-2</sup>	3.6x10 <sup>-2</sup>	125,000
20,000/2,000	3,000	3,500	3.1x10 <sup>6</sup>	4.1x10 <sup>-2</sup>	3.7x10 <sup>-2</sup>	200,000

**ELECTRICAL CONNECTION**

12-PIN T7 DUAL RANGE		
Pin	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 VDC
G	Option Angle A	TTL
H	Signal 2 (+)	+5 VDC
J	NC	-
K	Cal. Control	L < 2.0 / H > 3.5 V
L	NC	-
M	Shield	Transducer Housing