

# Model T6 Dual Range Rotary Torque Transducer

Why the Interface model T6 Dual Range Rotary Torque Transducer is the best in class:

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



T6 Dual Range 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/ $^{\circ}$ C ..... $\pm 0.02$   
 Effect on Output-%/ $^{\circ}$ C ..... $\pm 0.01$   
 Rated Range- $^{\circ}$ C .....+5 to +45  
 Operating Range- $^{\circ}$ 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

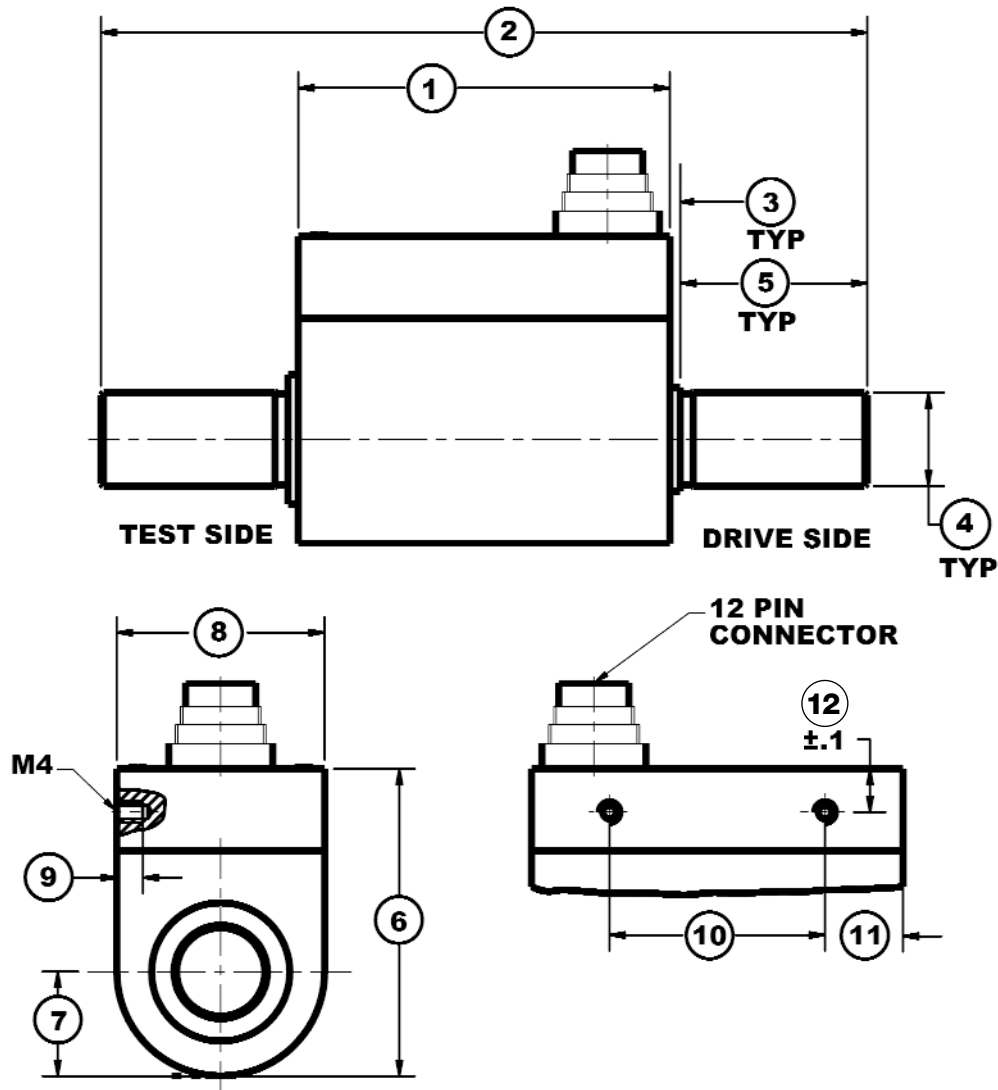
Safe Overload-% RO .....200  
 Cyclic Load Rating-% RO ..... $\pm 70$  peak  
 Max Speed - rpm .....Varies with capacity, see table

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

**Model T6 Dual Range Rotary Torque Transducer-**  
Capacities 5/0.5 to 500/50 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		200/20, 300/30, 500/50	
Equivalent (lb-in)	44.3/4.43		88.5/8.85, 177/17.7, 265/26.5		443/44.3, 885/88.5		177K/177, 27K/267, 4.43K/443	
	inch	mm	inch	mm	inch	mm	inch	mm
①	2.81	71.5	2.81	71.5	2.81	71.5	3.17	80.5
②	4.31	109.5	4.39	111.5	5.81	147.5	6.28	159.5
③	0.08	2	0.08	2	0.08	2	0.06	1.5
④	0.31	8g6	0.71	18 h6	0.71	18 h6	1.26	32 h6
⑤	0.67	17	0.71	18	1.42	36	1.50	38
⑥	2.70	68.5	2.70	68.5	2.70	68.5	3.41	86.5
⑦	0.79	20	0.79	20	0.79	20	1.20	30.5
⑧	1.57	40	1.57	40	1.57	40	2.40	61
⑨	0.20	5	0.20	5	0.20	5	0.20	5
⑩	1.63	41.5	1.63	41.5	1.63	41.5	1.16	29.5
⑪	0.59	15	0.59	15	0.59	15	1.02	26
⑫	0.69	17.5	0.69	17.5	0.69	17.5	0.69	17



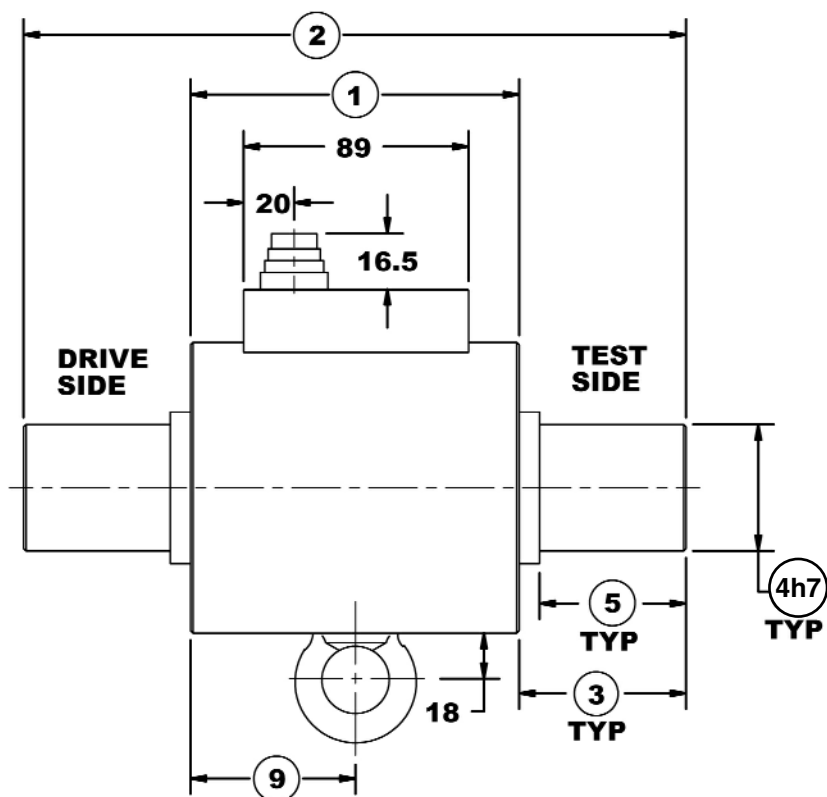
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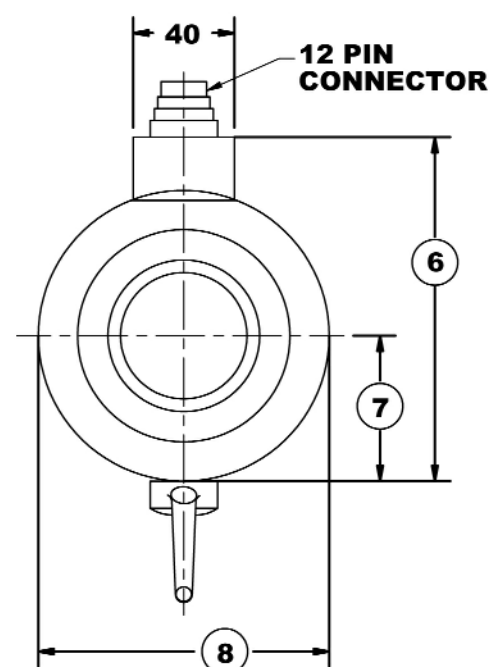
Capacities 1K/100 to 20K/2K Nm

### DIMENSIONS

Nominal Dual Range Torque (Range 1/Range 2)						
Capacity (Nm)	1K/100		2K/200, 5K/500		10K/1K, 20K/2K	
Equivalent (lb-in)	8.85K/885		17.7K/1.77K, 44.3K/4.43K		88.5K/8.85K, 177K/17K	
	inch	mm	inch	mm	inch	mm
①	5.12	130	5.31	135	7.48	190
②	10.31	262	14.84	377	18.50	470
③	2.60	66	4.76	121	5.51	140
④	1.97	50	2.76	70	4.33	110
⑤	2.28	58	4.33	110	4.72	120
⑥	5.35	136	6.34	161	9.17	233
⑦	2.26	57.5	2.74	69.5	4.09	104
⑧	4.53	115	5.47	139	8.27	210
⑨	2.58	65.5	2.66	67.5	3.74	95
⑩	0.71	18	0.71	18	0.71	18
⑪	3.50	89	3.50	89	3.50	89



Dimensions in mm



**T6 DUAL RANGE 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	
10/1	8,000	15,000	8.3x10 <sup>2</sup>	1.1x10 <sup>-5</sup>	9.8x10 <sup>-6</sup>	50
20/2	8,000	15,000	8.3x10 <sup>3</sup>	1.1x10 <sup>-5</sup>	9.8x10 <sup>-6</sup>	300
30/3	6,000	15,000	8.3x10 <sup>3</sup>	1.1x10 <sup>-5</sup>	9.8x10 <sup>-6</sup>	1,000
50/5	6,000	15,000	5.4x10 <sup>3</sup>	1.3x10 <sup>-5</sup>	1.1x10 <sup>-5</sup>	1,600
100/10	6,000	12,000	5.4x10 <sup>3</sup>	1.3x10 <sup>-5</sup>	1.1x10 <sup>-5</sup>	2,600
200/20	6,000	12,000	3.4x10 <sup>4</sup>	1.1x10 <sup>-4</sup>	8.4x10 <sup>-5</sup>	3,200
500/50	5,000	10,000	3.4x10 <sup>4</sup>	1.1x10 <sup>-4</sup>	8.4x10 <sup>-5</sup>	7,500
1,000/100	4,000	7,000	2.0x10 <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>	5.3x10 <sup>-3</sup>	4.2x10 <sup>-3</sup>	18,000
5,000/500	3,500	5,500	7.2x10 <sup>5</sup>	5.3x10 <sup>-3</sup>	4.3x10 <sup>-3</sup>	32,000
10,000/1,000	3,000	5,000	3.1x10 <sup>6</sup>	4.1x10 <sup>-2</sup>	3.6x10 <sup>-2</sup>	125,000
20,000/2,000	3,000	5,000	3.7x10 <sup>6</sup>	4.1x10 <sup>-2</sup>	3.7x10 <sup>-2</sup>	200,000

**ELECTRICAL CONNECTION**

12-PIN T6 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, TTL
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



**T6 Dual Range  
Rotary Torque Transducer**