

# Model T11 Bearingless Rotary Torque Transducer

- Capacities from 0.005 to 150 Nm (0.04 to 1,327 lb-in)
- Bearingless
- High speed – to 30K RPM
- ±5 VDC output
- Very low range
- Eliminates bearing friction effects
- 10 kHz sample rate
- 12 to 28 VDC supply
- 16-bit resolution



## SPECIFICATIONS

ACCURACY – (MAX ERROR)	
Combined Error–% FS	±0.1
Nonrepeatability–%	±0.02
TEMPERATURE	
Effect on Zero– % RO/°C	±0.02
Effect on Output–%/°C	±0.01
Rated Range–°C	+5 to +45
Operating Range–°C	0 to +60
ELECTRICAL	
Output–VDC	±5
Bandwidth, Hz	3 kHz-3dB
Calibration Signal–% RO	100
Supply Voltage–VDC	12 to 28
Supply Current–mA	60
Electrical Connection	8-pin
Resolution	16-bit
Sample Rate–kHz	10
MECHANICAL	
Safe Overload–% RO	200
Cyclic Load Rating–% RO	±70 peak
Max Speed–rpm	30K - See Table
Shaft	Stainless Steel
Housing	Aluminum

## OPTIONS

- +10 VDC output
- Speed output – 6 Pulse TTL, 1-Track

## PERFORMANCE PARAMETERS

CAPACITY (Nm)	MAX RPM	SPRINGRATE (Nm/rad)	MOMENT OF INERTIA, J (Kgxm <sup>2</sup> )		MAX. THRUST LOAD (N)
			Drive Side	Test Side	
0.005	20,000	4.6x10 <sup>-1</sup>	7.5x10 <sup>-7</sup>	1.1x10 <sup>-8</sup>	3
0.01	20,000	4.6x10 <sup>-1</sup>	7.5x10 <sup>-7</sup>	1.1x10 <sup>-8</sup>	3
0.02	30,000	3.7x10 <sup>-1</sup>	7.6x10 <sup>-7</sup>	1.3x10 <sup>-8</sup>	10
0.05	30,000	3.7x10 <sup>-1</sup>	7.6x10 <sup>-7</sup>	1.3x10 <sup>-8</sup>	10
0.1	30,000	1.7x10 <sup>1</sup>	7.6x10 <sup>-7</sup>	1.3x10 <sup>-8</sup>	15
0.2	30,000	1.7x10 <sup>1</sup>	7.6x10 <sup>-7</sup>	1.3x10 <sup>-8</sup>	20
0.5	30,000	9.8x10 <sup>1</sup>	7.6x10 <sup>-7</sup>	1.3x10 <sup>-8</sup>	30
1	30,000	9.8x10 <sup>1</sup>	7.6x10 <sup>-7</sup>	1.3x10 <sup>-8</sup>	40
2	30,000	5.0x10 <sup>2</sup>	9.1x10 <sup>-7</sup>	8.3x10 <sup>-8</sup>	50
5	30,000	5.0x10 <sup>2</sup>	9.1x10 <sup>-7</sup>	8.3x10 <sup>-8</sup>	50
10	30,000	5.8x10 <sup>2</sup>	9.7x10 <sup>-7</sup>	1.5x10 <sup>-7</sup>	50
20	20,000	4.9x10 <sup>3</sup>	1.2x10 <sup>-5</sup>	3.6x10 <sup>-6</sup>	100
50	20,000	9.3x10 <sup>3</sup>	1.2x10 <sup>-5</sup>	3.9x10 <sup>-6</sup>	200
100	20,000	9.3x10 <sup>3</sup>	1.2x10 <sup>-5</sup>	3.9x10 <sup>-6</sup>	200
150	20,000	1.1x10 <sup>4</sup>	1.2x10 <sup>-5</sup>	4.2x10 <sup>-6</sup>	200

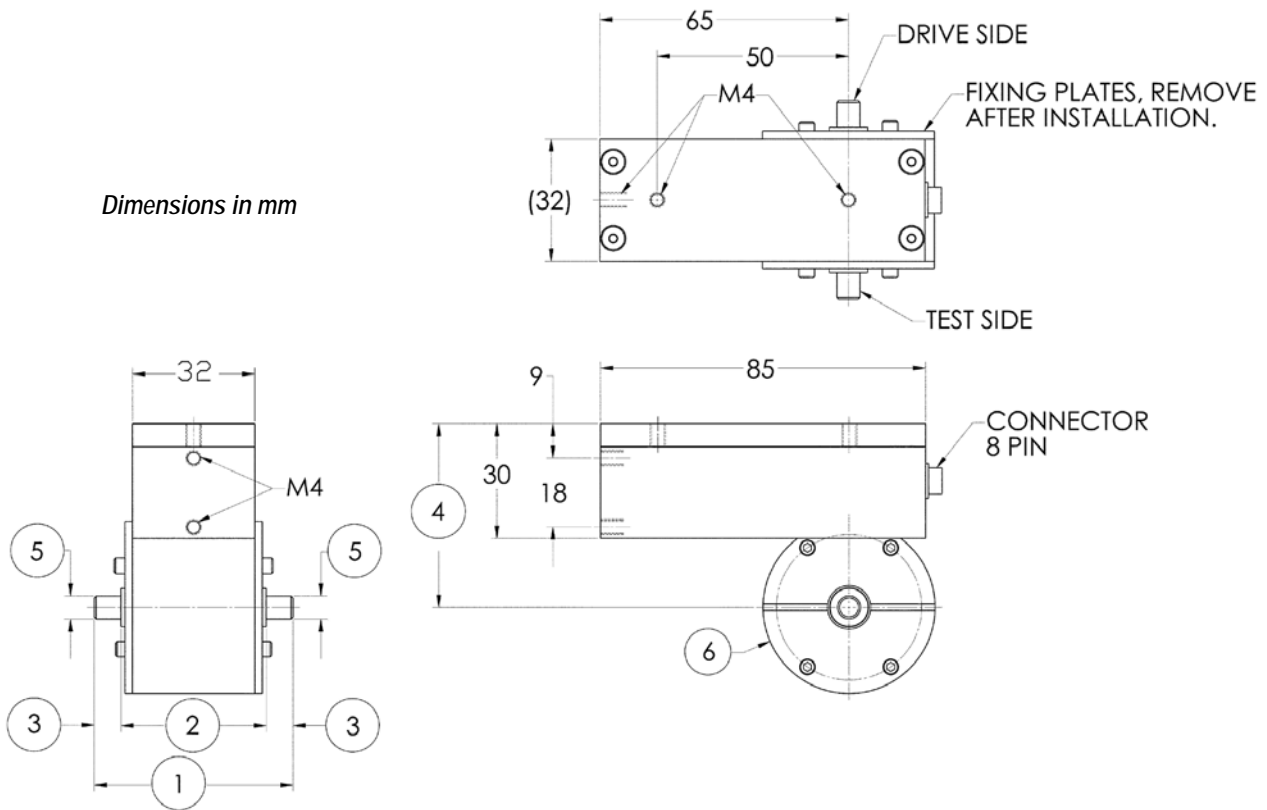
T11 050511

Model T11 Bearingless Rotary Torque Transducer –  
Capacities 0.005 to 150 Nm

**DIMENSIONS**

NOMINAL TORQUE										
Capacity (Nm)	0.005, 0.01		0.02, 0.05, 0.1 0.2, 0.5, 1		2, 5		10		20, 50, 100, 150	
Equivalent (lb-in)	0.04, 0.62		0.18, 0.44, 0.85 1.77, 4.43, 8.85		17.7, 44.3		88.5		177, 443, 885, 1.33K	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
(1)	1.89	48	2.05	52	2.68	68	2.68	68	4.80	122
(2)	1.50	38	1.50	38	1.50	38	1.50	38	1.97	50
(3)	0.20	5	0.28	7	0.59	15	0.59	15	1.42	36
(4)	1.89	48	1.89	48	1.89	48	1.89	48	2.09	53
(5)	0.1573/ 0.1570	4g6	0.2361/ 0.2357	6g6	0.3148/ 0.3144	8g6	0.3935/ 0.3931	10g6	0.7084/ 0.7080	18g6
(6)	1.77	45	1.77	45	1.77	45	1.77	45	2.34	59.5

Dimensions in mm



**ELECTRICAL CONNECTION**

8-PIN ELECTRICAL CONNECTION		
Pin	Function	Description
1	Supply (+)	12 to 28 VDC
2	Supply (GND)	0 VDC
3	Signal (+)	±5 VDC
4	Signal (GND)	0 VDC
5	Cal. Control	L < 2.0 / H > 3.5 V
6	Option Angle A	TTL
7	Option Angle B	TTL
8	NC	-