Model T7 Dual Range-Pedestal Rotary Torque Transducer

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

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
+10 V torque output
RS485
Keyed shafts – per Din 6885.1

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
Speed Output – puls/rev.	60
Supply Voltage–VDC	12 to 28
Supply Current–mA	60
Electrical Connection	12-pin
Resolution	16-bit
Sample Rate–kHz	5, each range
MECHANICAL	
Safe Overload–% RO	200
Cycle Load Rating–% RO	±70 peak
Max Speed–rpm	Varies with capacity. See Table
Shaft	Stainless Steel
Housing	Aluminum

T7 051311

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ADVANCED FORCE MEASUREMENT

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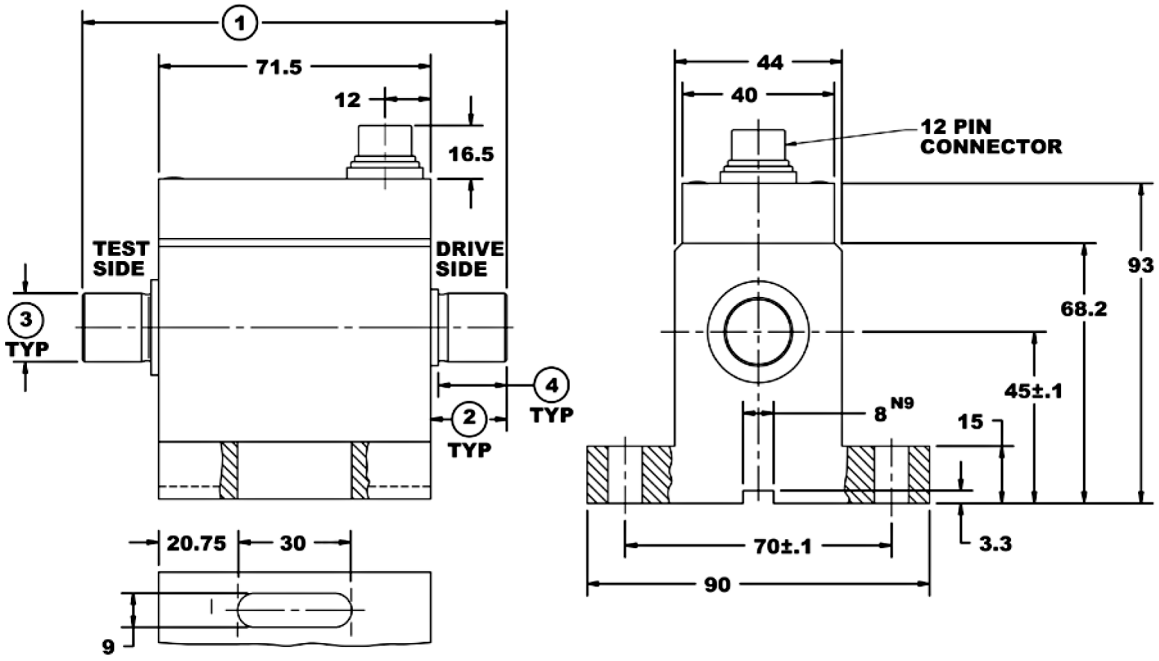
Model T7 Dual Range-Pedestal Rotary Torque Transducer – Capacities 5/0.5 to 50/5 Nm

DIMENSIONS

Nominal Torque								
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

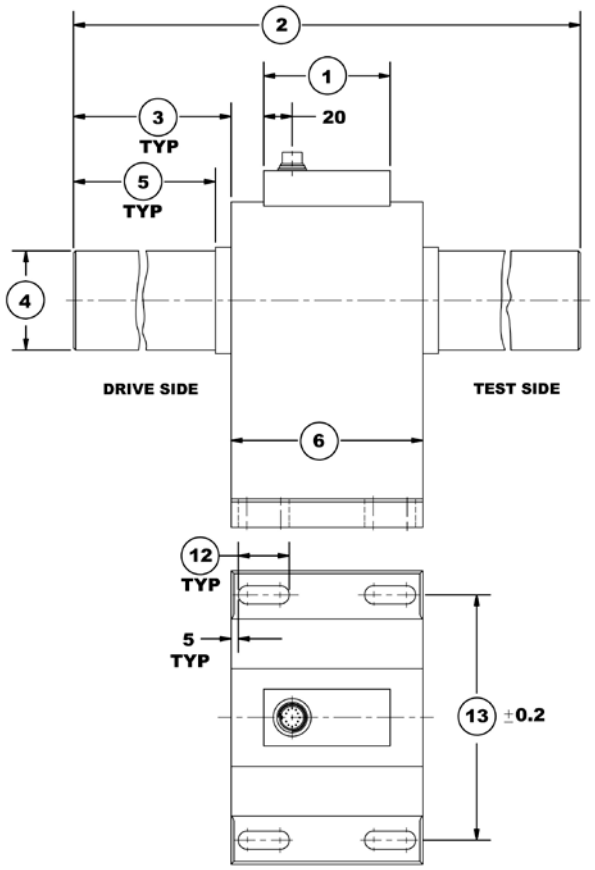


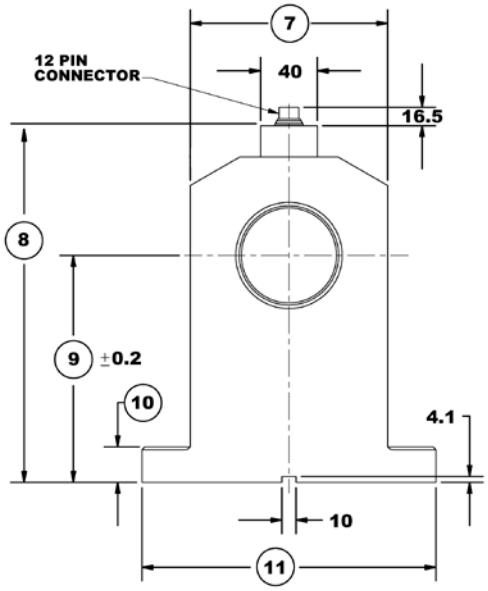
Dimensions in mm

Model T7 Dual Range-Pedestal Rotary Torque Transducer – Capacities 5/0.5 to 50/5 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)	3.5	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





Dimensions in mm

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T7 DUAL RANGE-PEDESTAL ROTARY TORQUE TRANSDUCER PERFORMANCE PARAMETERS

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

ELECTRICAL CONNECTION

	12-Pin 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 >3.5V
L	NC	-
M	Shield	Transducer Housing

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