

T5 GENERAL PURPOSE-PEDESTAL MOUNT ROTARY TORQUE TRANSDUCER (U.S. & METRIC)

FEATURES & BENEFITS

- Capacities from 0.1 to 1K Nm (0.89 to 8.85K lbf-in)
- Speed up to 15K RPM
- ±5 VDC output
- 12-28 VDC supply
- Contactless data transmission
- Digital electronics with on-shaft shunt
- 0.2% combined error
- 10 kHz sample rate
- 12-bit resolution
- Very short overall length

SPECIFICATIONS

ACCURACY – (MAX ERROR)		
Combined Error – %FS		±0.2
Nonrepeatability – %FS		±0.04
Resolution – bit		12
TEMPERATURE		
Effect on Zero – %RO / °C		±0.03
Effect on Output – % / °C		±0.015
Compensated Range	°C	+5 to +45
	°F	+41 to +113
Operating Range	°C	0 to +60
	°F	+32 to +140
Storage Range	°C	-10 to +70
	°F	+14 to +158
ELECTRICAL		
Supply Voltage – VDC		12 - 28
Supply Current – mA		≤ 60
Output – VDC		±5
Bandwidth – kHz – dB		1K, -3
Sample Rate – kHz		10
Calibration Signal – %FS		100
Electrical Connection		12-pin binder series 581 (includes mate)
ENCODER OPTIONS		
Capacities	0.1 - 1K Nm	360 pulse/rev, 2-track, +5V TTL, 90° offset, quadrature encoder
	0.88 - 8.85K lbf-in	
MECHANICAL		
Safe Overload – %RO		200
Max Speed – RPM		Varies with capacity (see table)
Shaft Material		Alloy steel
Housing Material		Aluminum

STANDARD CONFIGURATION

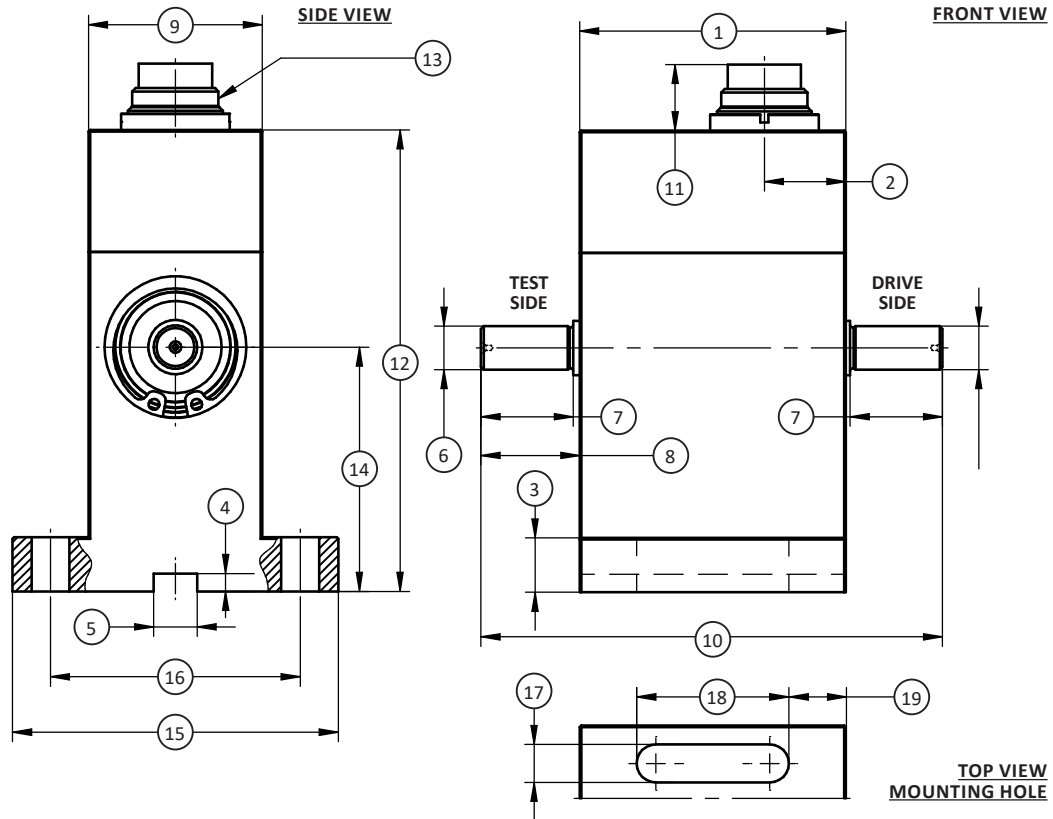


MODEL T5 (Shown)

OPTIONS

- Speed & angle measurement - 360 pulse TTL, 2-tracks 90° offset, available on capacities up to 1K Nm (8.85K lbf-in) only
- ±10V output
- RS485
- Keyed shafts - per DIN 6885.1
- Mating cable assembly

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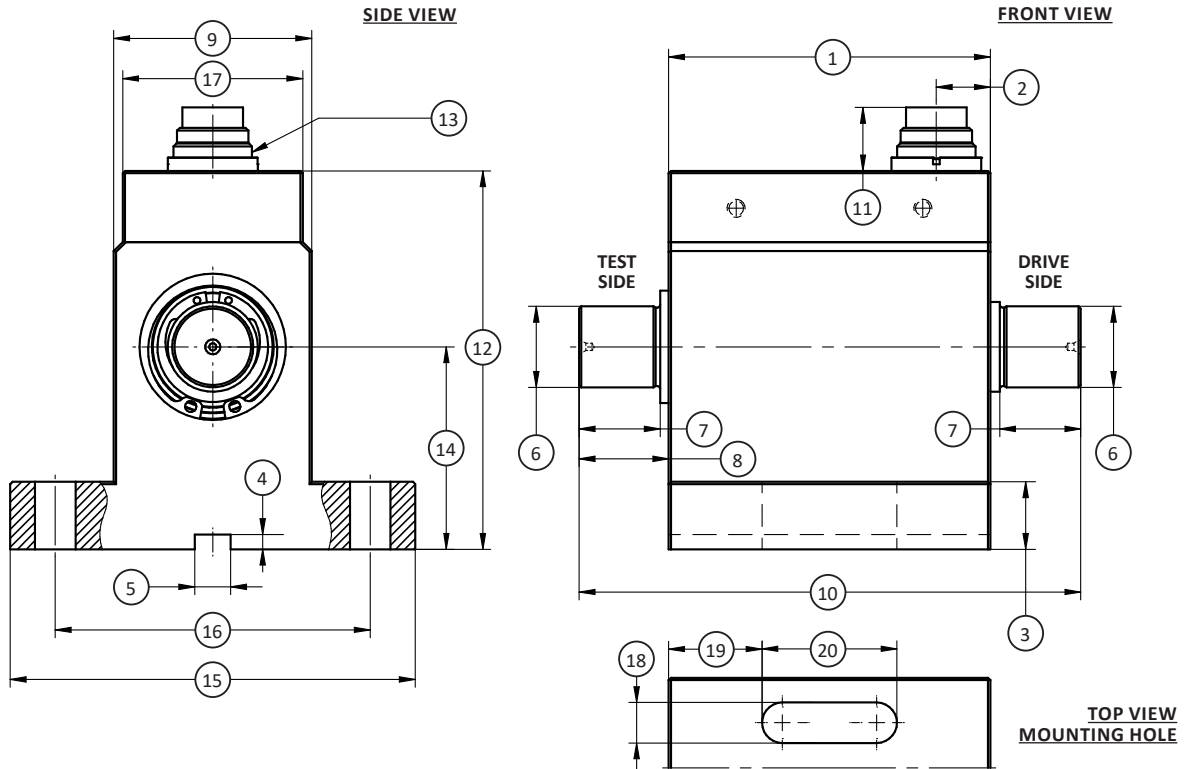


DIMENSIONS

See Drawing	CAPACITIES	
	Metric (Nm)	U.S. (lbf-in)
	0.1, 0.2, 0.5, 1	0.89, 1.77, 4.43, 8.85
	mm	in
(1)	49	1.9
(2)	15	0.6
(3)	10	88.5
(4)	3.3	0.4
(5)	Ø 8 N9	Ø 0.3150 / 0.3135
(6)	Ø 8g6	Ø 0.3148 / 0.3144
(7)	17	0.7
(8)	18	0.7
(9)	32	1.3
(10)	85	3.3
(11)	12	0.5
(12)	85	3.3
(13)	Connector 12-pin	
(14)	45	1.8
(15)	60	2.4
(16)	46	1.8
(17)	7	0.3
(18)	28	1.1
(19)	10.5	0.4

* U.S. dimensions and capacities are provided for conversion only. Standard product will be sold in kN and Metric dimensions. U.S. capacities available upon special request and at an additional cost.

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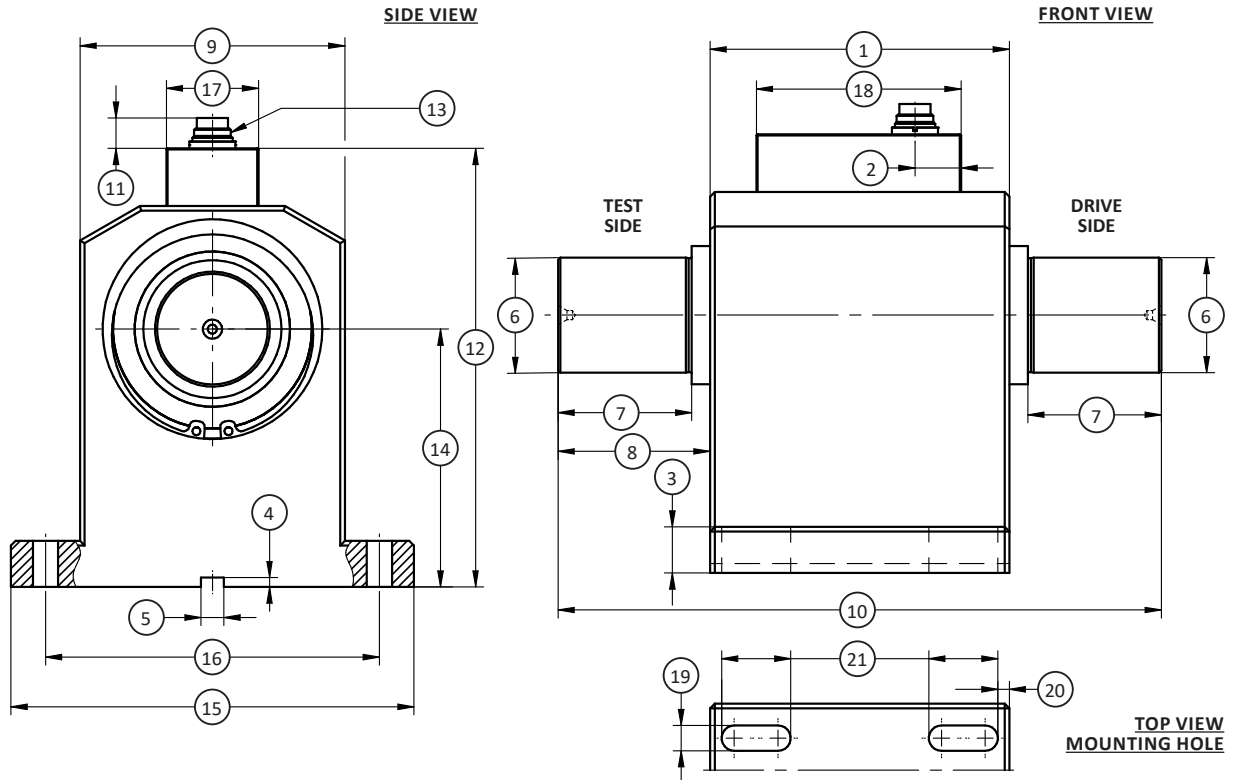


DIMENSIONS (CONTINUED)

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)
	2, 5	17.7, 44.3	10	8.85	20, 30	177, 265	50, 100	443, 885
	mm	in	mm	in	mm	in	mm	in
(1)	71.5	2.81	71.5	2.81	71.5	2.81	71.5	2.81
(2)	12	0.5	12	0.5	12	0.5	12	0.5
(3)	15	0.6	15	0.6	15	0.6	15	0.6
(4)	3.3	0.13	3.3	0.13	3.3	0.13	3.3	0.13
(5)	∅ 8 N9	∅ 0.3150/0.3135	∅ 8 N9	∅ 0.3150/0.3135	∅ 8 N9	∅ 0.3150/0.3135	∅ 8 N9	∅ 0.3150/0.3135
(6)	∅8g6	∅ 0.3148/0.3144	∅10g6	∅ 0.3935/0.3931	∅18g6	∅ 0.7084/0.7080	∅18g6	∅ 0.7084/0.7080
(7)	17	0.7	17	0.7	18	0.7	36	1.4
(8)	18	0.7	18	0.7	20	0.8	38	1.5
(9)	44	1.7	44	1.7	44	1.7	44	1.7
(10)	107.5	4.23	107.5	4.23	111.5	4.39	147.5	5.81
(11)	14	0.6	14	0.6	14	0.6	14	0.6
(12)	84	3.3	84	3.3	84	3.3	84	3.3
(13)	Connector 12-pin		Connector 12-pin		Connector 12-pin		Connector 12-pin	
(14)	45	1.8	45	1.8	45	1.8	45	1.8
(15)	90	3.5	90	3.5	90	3.5	90	3.5
(16)	70	2.8	70	2.8	70	2.8	70	2.8
(17)	40	1.6	40	1.6	40	1.6	40	1.6
(18)	9	0.4	9	0.4	9	0.4	9	0.4
(19)	20.75	0.817	20.75	0.817	20.75	0.817	20.75	0.817
(20)	30	1.2	30	1.2	30	1.2	30	1.2

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DIMENSIONS (CONTINUED)

See Drawing	CAPACITIES			
	Metric (Nm)	U.S. (lbf-in)	Metric (Nm)	U.S. (lbf-in)
	200, 500	1.77K, 4.43K	1K	8.85K
	mm	in	mm	in
(1)	130	5.1	130	5.1
(2)	20	0.8	20	0.8
(3)	20	0.8	20	0.8
(4)	4.1	0.16	4.1	0.16
(5)	Ø10 N9	Ø0.7087 / 0.7070	Ø10 N9	Ø0.7087 / 0.7070
(6)	Ø32 g6	Ø1.2595 / 1.2589	Ø50 g6	Ø1.9681 / 1.9675
(7)	38	1.5	58	2.3
(8)	43.5	1.71	66	2.6
(9)	115	4.5	115	4.5
(10)	217	8.5	262	10.3
(11)	13	0.5	13	0.5
(12)	190.4	7.50	190.4	7.50
(13)	Connector 12-pin		Connector 12-pin	
(14)	112	4.4	112	4.4
(15)	175	6.9	175	6.9
(16)	145	5.7	145	5.7
(17)	Ø40	Ø1.6	Ø40	Ø1.6
(18)	89	3.5	89	3.5
(19)	11	0.4	11	0.4
(20)	5	0.2	5	0.2
(21)	30	1.2	30	1.2

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PERFORMANCE PARAMETERS

CAPACITY		MAX RPM	SPRING RATE	MOMENT OF INERTIA (Kg•m ²)		MAX THRUST LOAD		MAX SHEAR FORCE	
Nm	lbf-in		(NM/rad)	Drive Side	Test Side	N	lbf	N	lbf
0.1	0.88	15,000	1.8x10 ¹	1.9x10 ⁻⁶	2.8x10 ⁻⁷	30	6.74	0.9	0.20
0.2	1.77	15,000	1.8x10 ¹	1.9x10 ⁻⁶	2.8x10 ⁻⁷	30	6.74	1.2	0.27
0.5	4.43	15,000	1.2x10 ²	1.9x10 ⁻⁶	2.8x10 ⁻⁷	30	6.74	2.9	0.65
1	8.85	15,000	1.2x10 ²	2.0x10 ⁻⁶	2.8x10 ⁻⁷	30	6.74	2.9	0.65
2	17.7	12,000	4.4x10 ²	1.0x10 ⁻⁵	8.1x10 ⁻⁶	62	13.9	8.5	1.91
5	44.3	12,000	4.4x10 ²	1.0x10 ⁻⁵	8.1x10 ⁻⁶	62	13.9	8.5	1.91
10	88.5	12,000	1.7x10 ³	1.0x10 ⁻⁵	8.2x10 ⁻⁶	62	13.9	28	6.29
20	177	12,000	4.5x10 ³	1.2x10 ⁻⁵	9.9x10 ⁻⁶	62	13.9	43	9.67
30	265	12,000	4.5x10 ³	1.2x10 ⁻⁵	9.9x10 ⁻⁶	62	13.9	65	14.6
50	443	12,000	8.5x10 ³	1.3x10 ⁻⁵	1.2x10 ⁻⁵	62	13.9	64	14.4
100	885	12,000	8.4x10 ³	1.3x10 ⁻⁵	1.2x10 ⁻⁵	62	13.9	64	14.4
200	1.77K	7,000	9.2x10 ⁴	1.3x10 ⁻³	8.0x10 ⁻⁴	760	171	350	78.7
500	4.43K	7,000	9.2x10 ⁴	1.3x10 ⁻³	8.0x10 ⁻⁴	760	171	420	94.4
1K	8.85K	7,000	3.1x10 ⁵	1.6x10 ⁻³	1.1x10 ⁻³	760	171	800	180

1 = Without encoder option
2 = Unsupported shaft

ELECTRICAL CONNECTION

Pin	12-PIN ELECTRICAL CONNECTION		12-PIN RS485 OPTION	
	Function	Description	Function	Description
A	NC	–	NC	–
B	Option Angle B	TTL	Option Angle B	TTL
C	Signal (+)	±5 VDC (±10 VDC)	NC	–
D	Signal (GND)	0 VDC	NC	–
E	Supply (GND)	0 VDC	Supply (GND)	0 VDC
F	Supply (+)	12-28 VDC	Supply (+)	12-28 VDC
G	Option Angle A	TTL	Option Angle A	TTL
H	NC	–	NC	–
J	NC	–	RS485 Option	RS485 (B)
K	Cal. Control	L < 2.0V / H > 3.5V	NC	–
L	NC	–	RS485 Option	RS485 (A)
M	Housing	–	Housing	–