interface

The Leader in Torque Measurement

TFT20 Telemetry Flange Torque Transducer

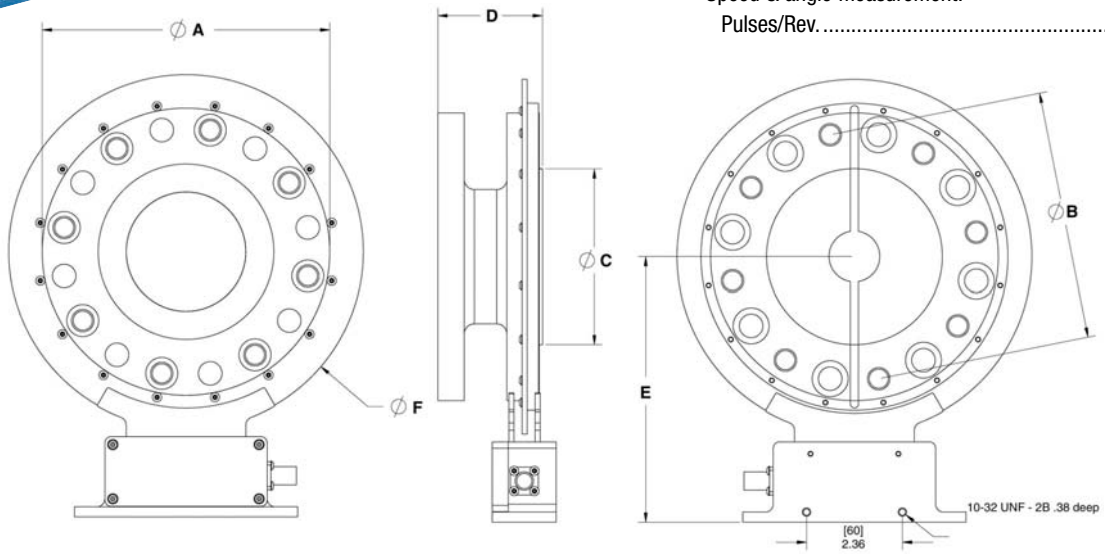
FEATURES:

- New generation digital circuitry
- Software configuration – no pots
- Simple caliper-type stator antenna – no loop
- Standard DIN or SAE flange
- Fatigue rated
- Any length RF coaxial cable permitted
- No bearings
- High torsional stiffness
- 20,000 rpm

SPECIFICATIONS: 50 to 10 KNm

Outputs:
- VCD.....±10
- mA.....12 ±8
- kHz .....10 ±5
- Serial .....RS232, RS485, Ethernet TCP/IP

Nonlinearity–%FS 0.05
Linear overrange–%RO.....120%
Resolution–%FS 0.001
Output update rate–Hz.....2000
Operating temp. range–ºC .....-40 to 85
Compensated temp. range–ºC .....-10 to 50
Temp. effect on zero–%RO/ºC .....±0.005
Temp. effect on output–%/ºC .....±0.005
Power supply–VDC.....12-30 (6 watt max. power)
Speed & angle measurement:
- Pulses/Rev. 1024



DIMENSIONS

Model #	Rated Capacity		Flange Coupling Diameter DIN Size A		Bolt Circle B		Bolt Size	Pilot Flange H7/g6 C		Overall Length D		Distance To Stator Mount E		Antenna Diameter F	
	Nm	lb-ft	mm	inch	mm	inch		mm	inch	mm	inch	mm	inch	mm	inch
TFT20	50, 100, 200	37, 74, 150	65	2.65	52	2.05	4 x M6	35	1.38	44.5	1.75	108.75	4.28	107	4.21
TFT20	500, 1K	370, 740	90	3.54	74.5	2.93	8 x M8	47	1.85	66.5	2.62	121.25	4.77	132	5.20
TFT20	2K	1,500	120	4.72	101.5	4.00	8 x M10	75	2.95	66.5	2.62	136.25	5.36	162	6.38
TFT20	3K	2,200	150	5.91	130	5.12	8 x M12	90	3.54	66.5	2.62	151.25	5.95	192	7.56
TFT20	5K	3,700	180	7.09	155.5	6.12	8 x M14	110	4.33	6.55	2.62	166.25	6.55	222	8.74
TFT20	10K	7,400	225	8.86	196	7.72	8 x M16	140	5.51	66.5	2.62	188.75	7.43	267	10.51

TFT20 Telemetry Flange Torque Transducer

The TFT20 is a bearingless, non-contact, rotary transducer featuring fast high-resolution measurements over a wide range of torque values. *It consists of three basic elements:*

1) The rotor consists of the mechanical torsion-sensing element complete with strain gages, power receiver, bridge excitation, analog to digital converter, temperature sensor, RF signal transmitter, and rotating antenna. The rotor has mounting screw patterns on both ends that connect to drives and loads via couplings or shafts.

2) The stator is a caliper-type antenna that transmits power to the rotor electronics and receives the digital torque signal from the rotor. The stator can be mounted in a variety of ways to a bracket that will hold it in proximity to the rotor.

3) The signal conditioning module houses the RF power supply and signal conditioning electronics that provide desired outputs. The module includes microprocessor-controlled filtering, formatting, and digital to analog conversion. Output may be selected from current, voltage, serial or frequency.

Rotary Torque

T2 PRECISION ROTARY
T4 GENERAL PURPOSE

FEATURES:

- Capacities from 0.03 Nm to 20 KNm
- ±5 VDC output
- Digital electronics
- Stainless steel shaft
- 12 to 28 VDC supply
- 10 KHz sample rate
- Angle & speed option

SPECIFICATIONS:

Torque output–VDC	±5 V
Combined error–% FS	±0.1
Temp. effect on output–% FS/ºC	±0.01
Temp. effect on zero–% FS/ºC	±0.02
Safe overload–% RO	200
Supply voltage–VDC	12 to 28
Electrical connection	8 or 12-pin

T4 General Purpose is a 0.2% transducer, available in limited capacities

PERFORMANCE PARAMETERS

Capacity (Nm)	Max. Speed (rpm)	Speed Option (rpm)
0.03-15	10,000	15,000
10-30	8,000	15,000
50	6,000	15,000
100-200	6,000	12,000
500	5,000	10,000
1K	4,000	7,000
2K-5K	3,500	5,500
10K	3,000	5,000
20K	3,000	5,000

T3 PRECISION ROTARY
T5 GENERAL PURPOSE

FEATURES:

- Capacities from 0.03 Nm to 20 KNm
- Integral base
- ±5 VDC output
- Digital electronics
- Stainless steel shaft
- Angle & speed option

SPECIFICATIONS:

Torque output–VDC	±5V
Combined error–% FS	±0.1
Temp. effect on output–% FS/ºC	±0.01
Temperature effect on zero–% FS/ºC	±0.02
Safe overload–% RO	200
Supply voltage–VDC	12 to 28
Electrical connection	12-pin

T5 General Purpose is a 0.2% transducer, available in limited capacities

PERFORMANCE PARAMETERS

Capacity (Nm)	Max. Speed (rpm)	Speed Option (rpm)
0.03-1	10,000	15,000
2-30	8,000	12,000
50-100	6,000	12,000
200-1K	4,000	7,000
2K-5K	3,500	5,500
10K-20K	3,000	3,500

RT12E 2X & RT10E 4X

FEATURES:

- 25 to 4,000,000 lb-in
- Rotary Transformer Coupling
- Immunity to EMI
- 15-5PH stainless steel shaft
- mV/V, ±5 VDC, or ±10 VDC outputs
- Up to 4X overload rated
- Performance to 0.07%

SPECIFICATIONS:

	Standarded	Enchanced
Combined error–% FS	±0.1	±0.07
Hysteresis–% FS	±0.1	±0.05
Temp. effect on output–%/ºC	±0.004	±0.002
Temp. effect on zero–% RO/ºC	±0.004	±0.002
Operating temp. range–ºC	-30 to 85	
Excitation (mV/V output)	3-6 VAC, 3kHz	
Supply (VDC output)	10.5 - 24 VCD	

PERFORMANCE PARAMETERS

RT12E 2X Overload		RT10E 4X Overload	
Capacity (lb-in)	Max. Speed (rpm)	Capacity (lb-in)	Max. Speed (rpm)
25-1,000	15,000	25-500	15,000
1,000-10K	8,500	500-5K	10,000
20K-40K	8,000	10K-20K	8,000
50K-100K	6,000	25K-50K	6,000
200K-375K	3,600	100K-250K	3,600
750K-1,500K	1,800	500K-1,000K	1,800

T6 & T7 DUAL RANGE

FEATURES:

- Dual range capacities - 10:1 ratio
- ±5 VDC output
- Stainless steel shaft
- 5 KHz sample rate
- 12 to 28 VDC supply
- Contactless
- Angle & speed option

SPECIFICATIONS:

Torque output–VDC	±5 V
Combined error–% FS	±0.1
Temp. effect on output–% FS/ºC	±0.01
Temperature effect on zero–% FS/ºC	±0.02
Safe overload–% RO	200
Supply voltage–VDC	12 to 28
Electrical connection	12-pin

PERFORMANCE PARAMETERS

Capacity (Nm) Range 1/Range 2	Max. Speed (rpm)	Speed Option (rpm)
5/0.5, 10/1, 20/2	8,000	15,000
30/3, 50/5	6,000	15,000
100/10, 200/20	6,000	12,000
500/50	5,000	10,000
1K/100	4,000	7,000
2K/200, 5K/500	3,500	5,500
10K/1K, 20K/2K	3,000	5,000

T8 LC TORQUE

FEATURES:

- Stainless steel shaft
- ±5 VDC output
- 12 to 28 VDC supply

SPECIFICATIONS:

Torque output–VDC	±5 V
Combined error–% FS	±0.25
Temp. effect on output–% FS/ºC	±0.02
Temperature effect on zero–% FS/ºC	±0.04
Safe overload–% RO	180
Supply voltage–VDC	12 to 28
Electrical connection	Integral cable, 3ft

PERFORMANCE PARAMETERS

Capacity (Nm)	Max. Speed (rpm)	Speed Option (rpm)
0.2-15	8,000	-
20-200	6,000	-

T11 BEARINGLESS

FEATURES:

- Bearingless
- High speed
- ±5 VDC output
- Very low range
- Eliminates bearing friction effects
- 10 KHz sample rate

SPECIFICATIONS:

Torque output–VDC	±5 V
Combined error–% FS	±0.1
Temp. effect on output–% FS/ºC	±0.01
Temp. effect on zero–% FS/ºC	±0.02
Safe overload–% RO	200
Supply voltage–VDC	12 to 28
Electrical connection	8 or 12-pin

PERFORMANCE PARAMETERS

Capacity (Nm)	rpm
0.005-0.01	20,000
0.02-20	30,000
50-150	20,000

T12 SQUARE DRIVE

FEATURES:

- Capacities from 0.03 Nm to 20 KNm
- ±5 VDC output
- Digital electronics
- Stainless steel shaft
- 12 to 28 VDC supply
- 10 KHz sample rate
- Angle & speed option

SPECIFICATIONS:

Torque output–VDC	±5 V
Combined error–% FS	±0.1
Temp. effect on output–% FS/ºC	±0.01
Temp. effect on zero–% FS/ºC	±0.02
Safe overload–% RO	200
Supply voltage–VDC	12 to 28
Electrical connection	8 or 12-pin

PERFORMANCE PARAMETERS

Capacity (Nm)	Drive Size (in)
0.1-20	1/4
35-63	3/8
100-200	1/2
300-500	3/4
1K	1
2K-5K	1 1/2

Reaction Torque

MRT REACTION

FEATURES:

- Proprietary Interface temperature compensated strain gages
- Low capacity
- Excellent linearity & repeatability
- Low deflection

SPECIFICATIONS:

Rated output–mV/V (nominal)	2 ±0.30
Nonlinearity–% FS	±0.1
Temp. effect on output–%/100ºF	±0.10
Temp. effect on zero–% RO/100ºF	±0.20
Safe overload–% CAP	±150
Supply voltage–VDC (nominal-max)	10 to 20
Electrical connection	Cable length, 5 ft

TS11 FLANGE

FEATURES:

- High torsional stiffness
- Extraneous load resistance
- Compact size

SPECIFICATIONS:

Rated output–mV/V (nominal)	1.0
Nonlinearity–% FS	±0.1
Temp. effect on output–%/ºF-MAX	±0.005
Temp. effect on zero–% RO/ºF-MAX	±0.005
Safe overload–% CAP	±150
Supply voltage–VDC (max)	10

5340 FLAT

FEATURES:

- High torsional stiffness
- Extraneous load resistance
- Compact size

SPECIFICATIONS:

Rated output–mV/V (nominal)	2.0
Nonlinearity–% FS	±0.1
Temp. effect on output–%/ºF-MAX	±0.002
Temp. effect on zero–% RO/ºF-MAX	±0.002
Safe overload–% CAP	200
Supply voltage–VDC (max)	10

TS12 SHAFT

FEATURES:

- High torsional stiffness
- Extraneous load resistance
- Compact size

SPECIFICATIONS:

Rated output–mV/V (nominal)	1.0
Nonlinearity–% FS	±0.1
Temp. effect on output–%/ºF-MAX	±0.005
Temp. effect on zero–% RO/ºF-MAX	±0.005
Safe overload–% CAP	±150
Supply voltage–VDC (max)	10

1216 AXIAL TORSION

FEATURES:

- Measures load and torque
- Minimal crosstalk
- Extraneous load resistance
- Fatigue rated

SPECIFICATIONS: **Axial Bridge A/B**

Rated output–mV/V (nominal)	1.50/1.80
Nonlinearity–% FS	±0.04/±0.07
Temperature effect on output–%/100ºF-MAX	±0.08
Temperature effect on zero–% RO/100ºF	±0.08
Safe overload–% CAP	±200
Supply voltage–VDC (max)	20

Technical specifications are subject to change. More measurement ranges on request.

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