

Model Number 5302D-01A	TORKDISC® ROTARY TORQUE SENSING SYSTEM				Revision: B ECN #: 44198
Performance	ENGLISH	SI	OPTIONAL VERSIONS		
Measurement Range(Full Scale Capacity)	2000 in-lb	226 Nm	Optional versions have identical specifications and accessories as listed for the standard model except where noted below. More than one option may be used.		
Accuracy	± 0.10 % FS	± 0.10 % FS [3]			
Frequency Range(-3 dB)	0 to 8500 Hz	0 to 8500 Hz			
Filter Type(High Pass)	2-pole Butterworth	2-pole Butterworth [4][5]			
Filter Type(Low Pass - Anti Alias)	8-pole Elliptical	8-pole Elliptical	NOTES: [1]Supplied with universal AC power adaptor. [2]Bolt joint slip torque is calculated assuming a coefficient of friction (μ) of 0.1 and that grade 8 socket head cap screws are used and tightened to 30% of yield. [3]Root sum square of non-linearity, hysteresis, and non repeatability. [4]Selectable High Pass cutoff frequencies of 5, 10, 20, 200 and 500 Hz. [5]Selectable Low Pass cutoff frequencies of 10,000, 5000, 2500, 1200, 625 and 313 Hz. [6]Request Technical Note FTQ-STN5 regarding digital output signal. [7]Extraneous load limits reflect the maximum axial load, lateral load, and bending moment that may be applied singularly without electrical or mechanical damage to the sensor. [8]Where combined extraneous loads are applied, decrease loads proportionally. [9]See PCB Declaration of Conformance PS069 for details.		
Voltage Output(channel A - AC coupled)	± 10 V	± 10 V			
Voltage Output(channel B - DC coupled)	± 10 V	± 10 V			
Gain(Channel A)	1-16 dB	1-16 dB			
Gain(Channel B)	0.3-1.3 dB	0.3-1.3 dB			
Digital Output	QSPI	QSPI [6]			
Maximum Load(Axial)	500 lb	2.2 kN [7][8]			
Maximum Load(Lateral)	500 lb	2.2 kN [7][8]			
Maximum Moment	1500 in-lb	169 Nm [7][8]			
Environmental					
Overload Limit(Bolt Joint Slip)	3300 in-lb	373 Nm [2]			
Overload Limit(Failure)	8000 in-lb	904 Nm			
Overload Limit(Safe)	6000 in-lb	678 Nm			
Temperature Range(Rotor/Stator - Operating)	+32 to +185 °F	0 to +85 °C			
Temperature Range(Rotor - Compensated)	+70 to +170 °F	+21 to +77 °C			
Temperature Range(Receiver - Operating)	0 to +122 °F	-17.7 to 50 °C			
Temperature Effect on Output(System - within compensated range)	0.002 %FS/°F	0.0036 %FS/°C			
Temperature Effect on Zero Balance(System - within compensated range)	0.002 %FS/°F	0.0036 %FS/°C			
Position Sensitivity(180° rotation of sensor)	≤ 0.1 % FS	≤ 0.1 % FS			
Electrical			PCB LOAD & TORQUE A PCB PIEZOTRONICS DIV. PCB Load & Torque 24350 Indoplex Circle Farmington Hills, MI 48335 UNITED STATES Phone: 866-684-7107 Fax: 716-684-0987 E-Mail: ltinfo@pcbloadtorque.com Web site: http://www.pcbloadtorque.com		
Power Required(50 to 60 Hz)	9 to 18 VDC	9 to 18 VDC [1]			
Digital Resolution	16 Bit	16 Bit			
Digital Sample Rate	26,484 samples/sec	26,484 samples/sec			
Analog Resolution(based on ±10 V FSO and 16-bit resolution)	0.31 mV	0.31 mV			
Physical					
Maximum Speed	15,000 RPM	15,000 RPM			
Permissible Axial Float(rotor to stator)	0.25 in	6.4 mm			
Permissible Radial Float(rotor to stator)	0.25 in	6.4 mm			
Rotating Inertia(without adaptors)	0.056 in-lb/sec2	0.006 N-m/sec2			
Dynamic Balance	per ISO G 2.5	per ISO G 2.5			
Torsional Stiffness	5,800,000 in-lb/radian	655,312 N-m/radian			
Torsional Angle(at Full Scale Capacity)	0.020 °	0.020 °			
Housing Material(Sensor)	Anodized Aluminum	Anodized Aluminum			
Weight(rotor/sensor)	3.5 lb	1.6 kg			
					
All specifications are at room temperature unless otherwise specified. In the interest of constant product improvement, we reserve the right to change specifications without notice.					