

Model Number 5309D-02A	TORKDISC® ROTARY TORQUE SENSING SYSTEM				Revision: B ECN #: 44198
Performance	ENGLISH	SI			OPTIONAL VERSIONS
Measurement Range(Full Scale Capacity)	100,000 in-lb	11,298 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	[4]		
Frequency Range(-3 dB)	0 to 8500 Hz	0 to 8500 Hz			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 75% of yield. [3] Bolt joint slip torque is increased from 85,000 in-lbs to 110,000 in-lbs by applying Loctite 638 to the inner 6.000" bolt circle mating surfaces, or using 5/8-11 UNC Supertanium bolts in the 6.000" bolt circle, torqued to 230 ft-lbs. [4] Root sum square of non-linearity, hysteresis, and non repeatability. [5] Selectable High Pass cutoff frequencies of 5, 10, 20, 200 and 500 Hz. [6] Selectable Low Pass cutoff frequencies of 10,000, 5000, 2500, 1200, 625 and 313 Hz. [7] Request Technical Note FTQ-STN5 regarding digital output signal. [8] 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. [9] Where combined extraneous loads are applied, decrease loads proportionally. [10] See PCB Declaration of Conformance PS069 for details.
Filter Type(High Pass)	2-pole Butterworth	2-pole Butterworth	[5]		
Filter Type(Low Pass - Anti Alias)	8-pole Elliptical	8-pole Elliptical	[6]		
Voltage Output(channel A - AC coupled)	± 10 V	± 10 V			
Voltage Output(channel B - DC coupled)	± 10 V	± 10 V			
Gain(Channel A)	1 to 16 dB	1 to 16 dB			
Gain(Channel B)	0.3 to 1.3 dB	0.3 to 1.3 dB			
Digital Output	QSPI	QSPI	[7]		
Maximum Load(Axial)	10,000 lb	44.5 kN	[8][9]		
Maximum Load(Lateral)	10,000 lb	44.5 kN	[8][9]		
Maximum Moment	50,000 in-lb	5649 Nm	[8][9]		
Environmental					SUPPLIED ACCESSORIES: Model 100-9161-10 Power Supply (1) Model 182-028A Connector (1) Model 8314-06-24A Cable (1)
Overload Limit(Bolt Joint Slip)	110,000 in-lb	12,430 Nm	[2][3]		
Overload Limit(Failure)	250,000 in-lb	28,246 Nm			
Overload Limit(Safe)	200,000 in-lb	22,597 Nm			
Temperature Range(Operating)	+32 to +185 °F	0 to +85 °C			
Temperature Range(Compensated)	+70 to +170 °F	+21 to +77 °C			
Temperature Effect on Output(within compensated range)	0.003 %FS/°F	0.0054 %FS/°C			
Temperature Effect on Zero Balance(within compensated range)	0.003 %FS/°F	0.0054 %FS/°C			
Position Sensitivity(180° rotation of sensor)	≤ 0.1 % FS	≤ 0.1 % FS			
Electrical					
Power Required(50 to 60 Hz)	9 to 18 VDC	9 to 18 VDC	[1]		 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
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	10,000 RPM	10,000 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)	0.874 in-lb/sec2	0.099 N-m/sec2			
Dynamic Balance	per ISO G 2.5	per ISO G 2.5			
Torsional Stiffness	230,000 kin-lb/radian	25,987 kN-m/radian			
Torsional Angle(at Full Scale Capacity)	0.017 °	0.017 °			 [10] 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. ICP® is a registered trademark of PCB Group, Inc.
Housing Material(Sensor)	Plated Steel	Plated Steel			
Weight	30 lb	13.6 kg			
Entered: AP	Engineer: JM	Sales: KWW	Approved: JSD	Spec Number:	44443
Date: 5/13/2015	Date: 5/13/2015	Date: 5/13/2015	Date: 5/13/2015		