

Model Number 5302D-02A	TORKDISC® ROTARY TORQUE SENSING SYSTEM				Revision: B ECN #: 44198	
Performance	ENGLISH	SI	OPTIONAL VERSIONS			
Measurement Range(Full Scale Capacity)	5000 in-lb	565 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				
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]	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]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.		
Maximum Load(Axial)	1000 lb	4.4 kN	[7][8]			
Maximum Load(Lateral)	1000 lb	4.4 kN	[7][8]			
Maximum Moment	3000 in-lb	339 Nm	[7][8]			
Environmental						
Overload Limit(Bolt Joint Slip)	10,000 in-lb	1130 Nm	[2]			
Overload Limit(Failure)	20,000 in-lb	2260 Nm				
Overload Limit(Safe)	15,000 in-lb	1695 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				SUPPLIED ACCESSORIES: Model 012AC024AT Cable (1) Model 182-028A Connector (1) Model M0003978 Power supply (1)		
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)	0.117 in-lb/sec ²	0.013 N-m/sec ²				
Dynamic Balance	per ISO G 2.5	per ISO G 2.5				
Torsional Stiffness	14500000 in-lb/radian	1600 kN-m/radian				
Torsional Angle(at Full Scale Capacity)	0.020 °	0.020 °				
Housing Material(Sensor)	Steel Alloy	Steel Alloy				
Weight(rotor/sensor)	9.0 lb	4.1 kg				
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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.