

Model Number
5308D-02A

TORKDISC® ROTARY TORQUE SENSING SYSTEM

Revision: D
ECN #: 55332

Performance	ENGLISH	SI	
Measurement Range(Full Scale Capacity)	20,000 in-lb	2,260 Nm	
Filter Type(High Pass)	2-pole Butterworth	2-pole Butterworth	[1][2]
Filter Type(Low Pass - Anti Alias)	8-pole Elliptical	8-pole Elliptical	
Gain(Channel A)	1-16 dB	1-16 dB	
Gain(Channel B)	0.3-1.3 dB	0.3-1.3 dB	
Voltage Output(channel B - DC coupled)	± 10 V	± 10 V	
Voltage Output(channel A - AC coupled)	± 10 V	± 10 V	
Digital Output	QSPI	QSPI	[3]
Maximum Load(Axial)	2,700 lb	12.0 kN	[4][5]
Maximum Load(Lateral)	3,375 lb	15.0 kN	[4][5]
Maximum Moment	9,500 in-lb	1,073 Nm	[4][5]
Accuracy	± 0.10 % FS	± 0.10 % FS	[6]
Frequency Range(- 3 dB)	0 to 8,500 Hz	0 to 8,500 Hz	
Environmental			
Overload Limit(Bolt Joint Slip)	35,000 in-lb	3,955 Nm	[7]
Overload Limit(Failure)	80,000 in-lb	9,039 Nm	
Overload Limit(Safe)	60,000 in-lb	6,779 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	0.002 %FS/°F	0.0036 %FS/°C	
Balance(System - within compensated range)			
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	[8]
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)	0.643 lb-ft ²	0.027 kg-m ²	
Dynamic Balance	per ISO G 2.5	per ISO G 2.5	
Torsional Stiffness	67,000 kin-lb/radian	7,570 kN-m/radian	
Torsional Angle(at Full Scale Capacity)	0.017 °	0.017 °	
Housing Material(Sensor)	Steel Alloy	Steel Alloy	
Weight(rotor/sensor)	10 lb	4.5 kg	

OPTIONAL VERSIONS

Optional versions have identical specifications and accessories as listed for the standard model except where noted below. More than one option may be used.

NOTES:

- [1]Selectable High Pass cutoff frequencies of 5, 10, 20, 200 and 500 Hz.
- [2]Selectable Low Pass cutoff frequencies of 10,000, 5000, 2500, 1200, 625 and 313 Hz.
- [3]Request Technical Note FTQ-STN5 regarding digital output signal.
- [4]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.
- [5]Where combined extraneous loads are applied, decrease loads proportionally.
- [6]Root sum square of non-linearity, hysteresis, and non repeatability.
- [7]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.
- [8]Supplied with universal AC power adaptor.

SUPPLIED ACCESSORIES:

Model 012AC024AT Cable (1)
Model 182-028A Connector (1)
Model M0003978 Power supply (1)

Entered: ND	Engineer: JM	Sales: KWW	Approved: JM	Spec Number:
Date: 11/07/2024	Date: 11/07/2024	Date: 11/07/2024	Date: 11/07/2024	40578



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.



PCB Load & Torque A Division of PCB Piezotronics
24350 Indoplex Circle Farmington Hills, MI 48335
UNITED STATES
Phone: 866-684-7107
E-Mail: LTSales@pcb.com
Web site: www.pcb.com/LoadAndTorque