| Model Number | TORKDISC® ROTARY TORQUE SENSING SYSTEM | Revision: B |
|---|---|---|
| **5302D-02A** | | ECN #: 44198 |

| **Performance** | **ENGLISH** | **SI** | |
|---|---|---|---|
| Measurement Range(Full Scale Capacity) | 5000 in-lb | 565 Nm | |
| 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] |
| 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** | | | |
| 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/sec2 | 0.013 N-m/sec2 | |
| 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 | |

CE[9]

*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.*

## 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]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.

## SUPPLIED ACCESSORIES:

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

| Entered: AP | Engineer: JM | Sales: KWW | Approved: JSD | Spec Number: |
|---|---|---|---|---|
| Date: 5/13/2015 | Date: 5/13/2015 | Date: 5/13/2015 | Date: 5/13/2015 | **40697** |

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**