



## Spline Driven Transformer Coupled Torque Sensor Model T259



T259 with optional i200 AC carrier strain gage signal conditioning electronics

- Meets AND 20002 & 10262 requirements
- High stiffness, low inertia, and high bending moment capability
- On-board shunt calibration circuit
- Rated speed 20,000 rpm
- Internal zero velocity speed sensor (optional)
- SAE 4340 alloy steel construction with satin nickel finish

The T259 rotary transformer torque sensor with a spline drive and flanged housing meets the mounting requirements of Army-Navy standards AND 20002 and AND 10262. The T259 is rated to operate at speeds up to 20,000 RPM over extended periods with standard grease pack bearings. The T259 requires the use of AC carrier strain gage signal conditioning electronics such as SensorData's i200. The optional zero velocity speed sensor is installed inside the T259 housing. Interconnecting cable assemblies are available as an option. SensorData will provide in-house calibration of the T259 with customer-supplied electronics for a fee.

### Specifications

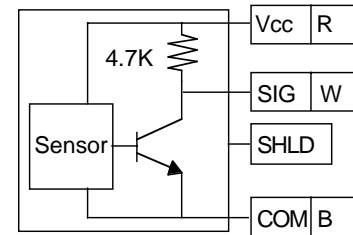
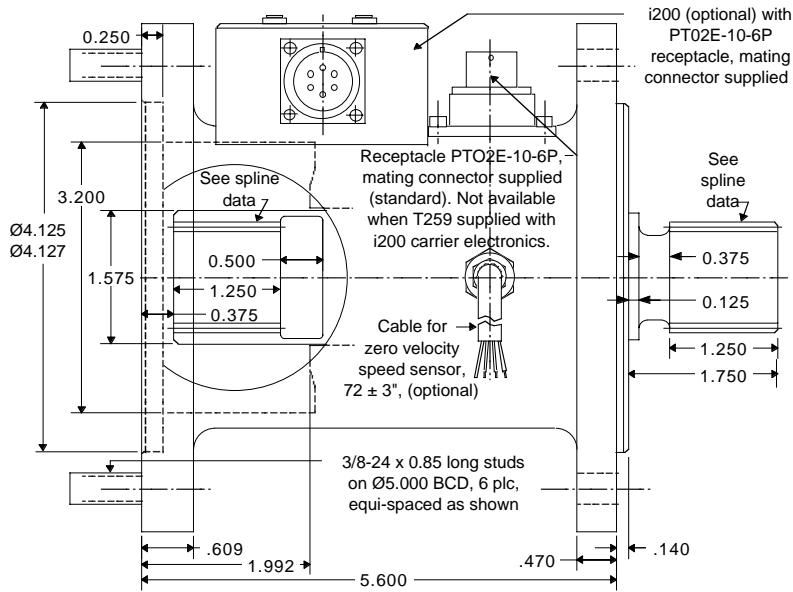
(Subject to change without notice)

Rated Capacity	5K, 10K, 15K, 20K lb-in
Rated Speed	20,000 rpm
Nonlinearity	0.05% of rated output
Hysteresis	0.05% of rated output
Nonrepeatability	0.02% of rated output
Rated Output, typical	2 mV/V
Zero Balance	+/-0.5% of rated output
Temperature Range, operating	-20 to +200 F
Temperature Range, compensated	+68 to +170 F
Temperature Effect on Output	0.001% of load/F
Temperature Effect on Zero	0.001% of rated output/F
Bridge Resistance, typical	350 ohms
Excitation	2.8 to 5 VAC rms, 3 kHz to 5 kHz
Insulation Resistance, bridge to case	>5000 megohms at 50 VDC
Input Voltage, speed sensor, V <sub>cc</sub> (optional) <sup>(1)</sup>	4.5 to 24 VDC
Maximum Load, safe <sup>(2)</sup>	200% of rated capacity
Maximum Load, ultimate <sup>(3)</sup>	400% of rated capacity
Bending Moment Capability, measured from rear flange mounting pad to CG of unit under test	120,000 lb-in
Number of Bridges	1
Weight	21 lb without i200, 22 lb with i200
Construction	SAE 4340 alloy steel with satin nickel finish

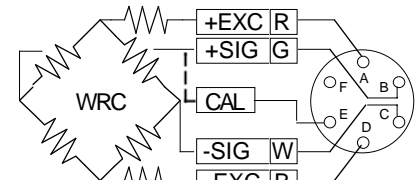
<sup>(1)</sup> Output is an open collector NPN with internal 4.7K ohm pull up resistor

<sup>(2)</sup> With load centered, maximum torque that can be applied without producing a permanent shift in performance characteristics.

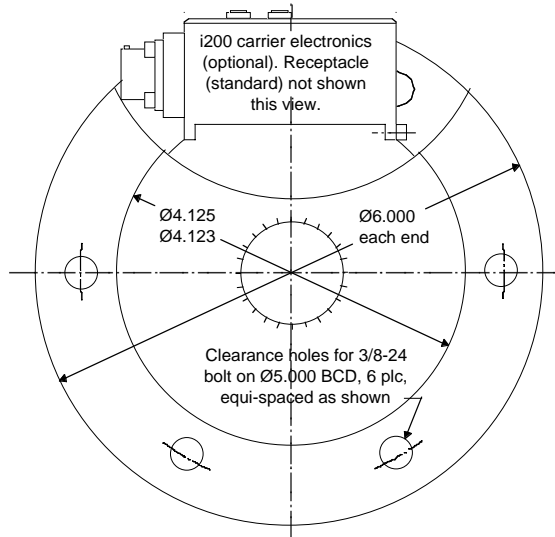
<sup>(3)</sup> With load centered, maximum torque that can be applied without physical damage.



Zero Velocity Speed Sensor  
(Optional)



PT02E-10-6P w/cal circuit



### Spline Data

No. of Teeth	24
Pitch	20/30
Pitch Diameter	1.200
Pressure Angle	30°

Capacity lb-in	Torsional Stiffness lb-in/rad	Rotating Inertia lb-in-sec <sup>2</sup>
5K	34.1 x 10 <sup>4</sup>	1.2 x 10 <sup>-3</sup>
10K	40.0 x 10 <sup>4</sup>	1.2 x 10 <sup>-3</sup>
15K	42.5 x 10 <sup>4</sup>	1.2 x 10 <sup>-3</sup>
20K	46.2 x 10 <sup>4</sup>	1.2 x 10 <sup>-3</sup>

If the T259 is supplied with the optional SensorData i200 AC carrier strain gage conditioning electronics, the i200 instruction manual or data sheet should be referred to for wiring information and specifications.

### ORDERING INFORMATION

T259-STD-Capacity	Standard with receptacle and mating connector.
T259-STD-Capacity-A	Same as T259-STD-Capacity except supplied with SensorData i200 strain gage conditioning electronics.
T259-STD-Capacity-S	Same as T259-STD-Capacity except supplied with zero velocity speed sensor.
T259-STD-Capacity-S-A	Same as T259-STD-Capacity except with zero velocity speed sensor and i200 strain gage conditioning electronics.
Cable Assembly	Optional; 10 ft., color coded, shielded, mating connector sensor end, customer specified connector instrument end.
Cable Assembly	Optional; 10 ft., color coded, shielded, mating connector sensor end, leads stripped and tinned instrument end.
Note	Mounting hardware is optional and not included unless specified at time of order

### IMPORTANT NOTICE

Dimensions above are in inches unless otherwise noted. Manufacturer not responsible for any modification to product, fixtures, or accessories made by user or third party. User should request certified drawings before designing mountings or fixtures. Manufacturer reserves right to modify or change design, dimensions, specifications, and features of this product without prior written notice. Changes to NOTICE must be in writing and accepted by manufacturer.