

# Rotating Torque Sensors

## 01251 Series

### INFRARED ROTATING TORQUE SENSOR

The 01251 is designed for applications such as dynamometers and test stands where a high performance, high noise immunity, non-contact torque measurement is required. The rotating electronics of Model 01251 are powered inductively. The rectified, regulated voltage is then sent to a strain gage bridge which senses applied torque. The signal is converted on-board the rotating torque sensor into digital format which is transmitted back to the base unit via IR diodes and receivers. Once captured by the receiver base, it is processed and converted back to a +/-5 VDC analog output and a RS 485 digital format.

#### FEATURES

- High frequency response
- High accuracy
- High level analog signal output
- Digital signal output
- No moving parts that may wear out and need replacing.
- On-board shunt calibration
- Increased gap tolerance for the base unit
- Signal interrupt indication
- A solid, single piece sensing element for improved rigidity and prolonged sensor life
- No bearing or brush drag
- High immunity to signal noise
- No brush induced signal interference
- High operating RPM
- Custom flange configurations available



#### SPECIFICATIONS

##### Transmitter Electronics

Resolution .....	16 bits
Accuracy .....	.01%*
Sample Rate .....	5000 samples/second
Filter .....	4-pole Butterworth low pass @ 1000Hz
Power Input .....	provided by base
Temperature Range .....	-20 to +85 deg C
Temperature Drift .....	.005% per deg C max

\* Transmitter electronics only. Performance will depend highly on sensing element design. See calibration data sheet supplied for information on each sensor system.

##### Receiver Base

Resolution .....	16 bits
Accuracy .....	.01%
Output Voltage .....	+/- 5VDC
Optional Output Voltage .....	+/- 10VDC
Power Input .....	12VDC +/-5% @ 4A **
Relay Contact Rating .....	500mA, 24VDC max
Relay Contact type .....	Form C (SPDT)
Temperature Range .....	-20 to +70 deg C
Temperature Drift .....	.005% per deg C max
Digital Output Signal Type .....	RS-485
Digital Output Baud Rate .....	230.4K Baud, 8,N,1

\*\* 120VAC to 12VDC @ 4A power supply is included.

##### Typical Sensor Performance

Accuracy .....	0.05% FS
Maximum RPM .....	15,000
Compensated temperature .....	+70 to +155°F
Useable temperature .....	0 to +155°F
Temp effect on zero .....	0.0035% of F.S./°F
Temp effect on span .....	0.0035% of Rdg./°F
Fullscale ranges .....	1,000in-lbs to 240,000in-lbs



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