

# DIGITAL ROTATING TORQUE SENSORS SHAFT-TO-SHAFT CONFIGURATION

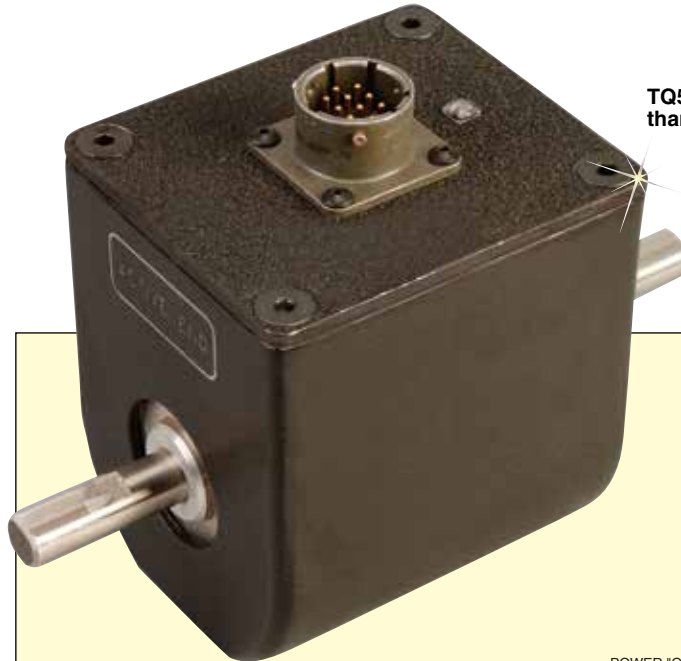


**0-3 in-lb to 0-2000 in-lb**  
**0-0.35 to 0-226 N-M**  
**10,000 RPM Max**

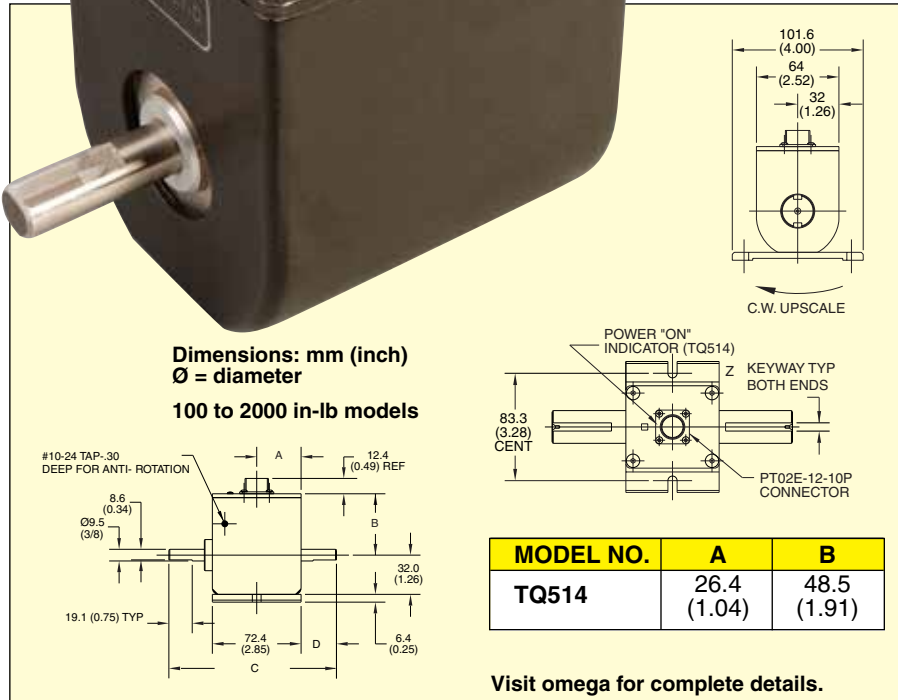
## TQ514 Series

- ✓ No Slip Rings for Quiet, High Speed Operation Up to 10,000 RPM
- ✓ Amplified  $\pm 5$  Vdc Output for Easy Computer Interface
- ✓ Optional Optical Encoder for Angle or Speed Measurement

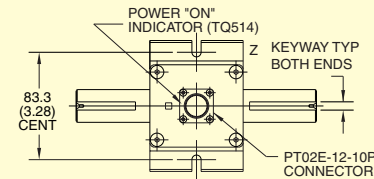
The TQ514 Series use a unique digital, non-contact wireless system to supply power to and transmit the signal from the rotating sensor. The digital torque signal is then converted and amplified to a  $\pm 5$  Vdc analog signal. This system reduces noise and allows for higher operating speeds. An optional 512 ppr optical encoder is available to measure angle or speed.



TQ514-003, shown smaller than actual size.



Dimensions: mm (inch)  
 $\varnothing$  = diameter  
 100 to 2000 in-lb models



MODEL NO.	A	B
TQ514	26.4 (1.04)	48.5 (1.91)

Visit [omega](http://omega.com) for complete details.

### SPECIFICATIONS:

**Excitation Voltage:** 12 to 15 Vdc  
**Supply Current:** 350 mA  
**Output at Full Scale:** Isolated  $\pm 5$  Vdc  
**Sample Rate:** 20,000 samples per second  
**Bandwidth:** dc to 1 kHz  
**Linearity:** 0.10% FS  
**Hysteresis:** 0.10% FS  
**Zero Balance:** 1.0% FS  
**Operating Temperature:** -40 to 85°C (-40 to 185°F)  
**Compensated Temperature:** 21 to 76°C (70 to 170°F)

### Thermal Effects

**Zero:** 0.0036% FS/°C  
**Span:** 0.0036% FS/°C

**Material:** <100 in-lb SS shafts, aluminum sensor  $\geq 100$  in-lb steel shaft and sensor  
**Overload Capacity:** 150% FS  
**Maximum Shaft Speed:** 10,000 RPM  
**Electrical Connection:** 10-pin twist lock connector (mating connector supplier)

### To Order

MODEL NO.	CAPACITY			SHAFT	KEY
	in-oz	in-lb	N-M		
TQ514-003	50	3.125	0.35	3/8"	1/32" flat
TQ514-006	100	6.25	0.71		
TQ514-012	200	12.5	1.41		
TQ514-030	500	31.25	3.53		
TQ514-062	1000	62.5	7.06		
TQ514-100	—	100	12	0.749	3/16"
TQ514-200	—	200	23		
TQ514-500	—	500	56	0.999	1/4"
TQ514-1K	—	1000	113		
TQ514-2K	—	2000	226		

### OPTIONS

ORDER SUFFIX	DESCRIPTION
-EN512	Integral 512 ppr optical encoder
-MB	Foot mounting bracket

Comes complete with operator's manual.

**Ordering Examples:** TQ514-012, 12 in-lb range rotating torque sensor.

TQ514-500-EN512, 500 in-lb rotation torque sensor with 512 ppr optical encoder.