

TECHNICAL DATA

TorqueTrak 50 SPM

Shaft Torque and Power Monitoring System



MODULAR

Chain link design of collar allows for easy change between shaft diameters. Chain links are quickly added or removed using standard hardware.

FAST LEAD TIMES

Versatile design means parts are stocked and ready to ship regardless of shaft size.

NO BASE MOUNT REQUIRED

The stand-alone shaft "strap-on" collar assembly requires no base mount. This eliminates the need for custom mounting brackets or on-site welding.

HIGH ACCURACY

Strain gage sensor and digital electronics with 24-bit ADC ensure accurate measurements.

DUAL-CHANNEL

Two strain channels with one transmitter.

BUILT-IN RPM SENSOR

Shaft speed is measured with internal gyro, minimizing cable runs. Power values are automatically calculated from torque and speed measurements.

LOW MAINTENANCE

Battery life one year or more depending on sample rate.

The TorqueTrak 50 SPM is a state-of-the-art strain gage based solution designed to provide torque, RPM, and power measurements on rotating shafts, without the need for shaft disassembly or modification.

The system only includes two primary components and does not require a base mount. The innovative chain link design allows for short lead times, simplified installation, and easy interchangeability between shaft sizes.

On-shaft electronics are encased in potting and protected by a robust corrosion-proof housing, ensuring reliable long-term operation in the most abusive environments.



PRODUCT SPECIFICATIONS

TX50 STRAIN TRANSMITTER

Number of strain channels	2
Strain bridge input range	8 user-selectable: ± 0.125 to ± 16 mV/V
Strain signal ADC resolution	24 bits. 1/16,777,216 ($\pm 8,388,608$)
Transmission sample rate	1, 300, 600, 1200, 2400 samples/sec (via BLE) 25 samples/sec (via Modbus RS-485)
Strain bridge balance	Automatic, user-initiated Auto-Balance
Bridge balance range	± 0.5 mV/V (max)
Strain bridge shunts	5 user-selectable reference shunts will produce 125, 250, 500, 1000 or 1924 μ V/V deviation when connected to 350 Ω Wheatstone bridge
Strain bridge resistance	350 Ω
Excitation voltage	3.0 VDC
Strain bridge connection	M8-4F circular, threaded
Power supply	
Power source	(8) Li-SoCl ₂ batteries (Tadiran TL-5920 or equivalent) <i>*Batteries are not included with international orders</i>
Operating voltage	3.2 to 5.5 VDC
Current draw (low-power mode)	4 mA
Current (hi-speed mode)	40 mA

Transmission distance	
Line of sight	10 m (typical)
On rotating shaft	2 m (typical)
Shaft speed measurement	
Sensor type	Integrated gyro
Max speed measurement	666 rpm
Speed scale error	$\pm 2\%$ (max)
Speed zero error	± 0.5 RPM (max) (± 3 deg/sec)
Housing material	Cast nylon with aluminum frame
G-force	300 g's
Ingress protection	IP66
Operating temperature range	-40 to 70°C (-40 to 158°F)

RX50 Receiver

Power supply input	9 to 36 VDC, 4 W (max), 2 W (typical)
External indicators	LED light for Power, Modbus, Transmitter
Network connectivity	Modbus RTU
Ingress protection	IP68
Operating temperature range	0 to 70°C (32 to 158°F)

TT50 System

Standard warranty	1 year
Sample rate (aggregate)	2400 samples/sec
RF transmission type	BLE (Bluetooth Low Energy)

