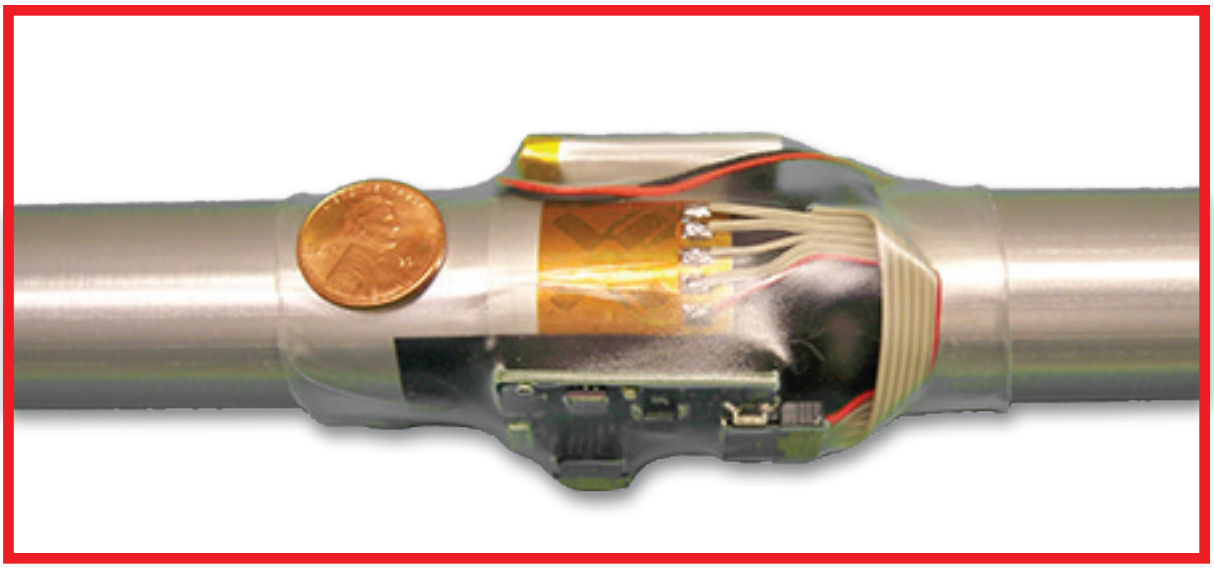
TECAT
PERFORMANCE SYSTEMS

WISER Model 2000 Wireless Data Sensor



The TECAT WISER Model 2000 torque measurement and monitoring system is a single channel wireless data acquisition system for measuring live torque. It is small, light, power efficient, easy-to-use and non-invasive. The wireless system has the optional ability to measure 3-axis acceleration, pressure and temperature all within the same incredibly small footprint.

The WISER Model 2000 is comprised of three subsystems. The remote unit, shown above, consists of the data capture electronics, transceiver and battery. The base unit plugs directly into a PC USB port, and houses an antenna, transceiver, and up to two analog outputs. The WISER Data Viewer software is used for system configuration and calibration, live monitoring, and data logging.

Benefits

- Extremely small footprint enables torque measurement in places never before accessed
- Long battery life for uninterrupted testing
- High accuracy enables development work on a wide range of applications
- Non-invasive system can be removed, and does not alter the unit under test.

Applications

- Torque testing on rotating shafts in confined spaces
- Torque testing on half shafts, drive shafts, and prop shafts
- Torsional vibration testing
- Steering column testing
- U-joint testing

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Specifications

Power	
Power Supply Remote Unit	3V DC to 6V DC, absolute maximum of 6V DC
Power Supply Base Unit	5V DC unregulated
DC Sensor Driver	10 mA absolute maximum
Lithium Battery	Standard: 3.7V Single Cell Li-Poly (400mAh) Option 1: 3.7V Single Cell Li-Poly (850mAh) Option 2: 3.7V Single Cell Li-Poly (1000mAh)
Power Consumption	WISE remote with 350 Ω strain gauge- active gauge: 3.8mA, inactive: 25.0μA (note: data current consumption varies with over-sampling and data packet size)
Physical - Remote Unit	
Dimensions	36 mm x 23 mm x 4 mm (circuit board w/o mounting tabs and connectors) 45 mm x 23 mm x 6 mm (circuit board w/mounting tabs)
Weight	6.5 g (remote transceiver with epoxy coating) 9.0 g (400 mAh li-poly battery)
Communications	
Radio Frequency Transceiver Carrier	2.45 GHz direct sequence spread spectrum, license free worldwide (2.405 to 2.480 GHz) - 16 channels, radiated power @ 3.5dBm (2.2mW)
RF Data Packet Standard	IEEE 802.15.4 capable, open communication architecture
Range for RF Link	30m (100ft) line-of-sight
Base to Host Transfer	COMM Port via USB – up to 230400 baud; 8 data bits; no parity; 1 stop bit – open
Base Unit	USB (mounts as COM port), Single or Dual 0-5V Analog Output Channels (2.5V nominal centered)
Environmental	
Remote Operating Temp	-40˚C to +120˚C
Electrical	
Sensor Input	Full Wheatstone bridge gauge 350Ω resistance or higher
Accelerometer Range	Standard: none Option 1: 16G Option 2: 400G
Measurement Accuracy	±0.1% full scale typical (digital out)
DC Bridge Excitation	Vg = +2.5V DC at 10 mA max (pulsed to sensors to conserve power)
Analog Gain	User selectable: 1X; 2X; 10X; 200X
Digital Gain	User selectable: 1X; 2X; 4X; 8X; 16X
Digital Offset	User selectable: ±100% full scale
Differential Input Range	Factory selectable: 0-5mV; 0-10 mV; 0-20 mV
Oversampling	1X, 2X, 4X, 8X, 16X, 32X
A/D Converter	Successive approximation type, 16 bit Δ-Σ (increases resolution and accuracy, increases current consumption)
Data Rate	User selectable: 250Hz - 2kHz
Compatible Software	WISE Data Viewer or User Supplied (WDV Requires Windows 2000/XP/Vista/Windows 7 or newer; .NET4.0; 512MB memory; 1Ghz processor or faster)

Note: All specifications are for 1kHz data rate; 16 bit; 350Ω gauge; 6” ribbon cable connection; 3.7V Li-Poly battery

TECAT Performance Systems
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