



WISER Model TC2-K Wireless Data Sensor Temperature

WIRELESS WITH AN EDGE



The WISER Model TC2-K temperature measurement and monitoring system was designed specifically to tackle the challenges of continuous brake rotor temperature measurements. It is small, light, power efficient, easy-to-use and non-invasive. The wireless system has on-board channel amplification and on-board temperature referencing. The system uses 2 K-type thermocouples and offers highly accurate data over a wide temperature range.

The WISER Model TC2-K is comprised of three subsystems: a remote unit, a base unit, and a software interface. The remote unit connects to the thermocouples and is packaged in the standard electronics enclosure shown above, combined with a custom designed attachment base to mount to any application. The base unit plugs directly into a PC USB port for use with the software interface, or into a power supply and data acquisition system via the four analog outputs. The WISER Data Viewer software is used for system configuration and calibration, live monitoring, and data logging.

BENEFITS

- Small, wireless system enables 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

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Wireless Data Sensor

Temperature

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	WISER remote with 2 K-type TC active: mA inactive: μ A (note: data current consumption varies with over-sampling and data packet size)
Physical - Remote Unit	
Dimensions	89mm \varnothing x 42 mm H (standard enclosure does not include base, which is custom designed for each application)
Weight	350 g
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 +1,000°C
Electrical	
Sensor Input	2 K-type thermocouples
Measurement Accuracy	$\pm 1^\circ\text{C}$ full scale
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	WISER 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; 2 K-type TC's; 3.7V Li-Poly battery

