PRODUCT DATA SHEET

TC-Link-200-OEM: Wireless Temperature Sensor Node

The TC-Link-200-OEM allows users to collect data from a range of sensor types including Thermocouples, Resistance Thermometers, and Thermistors. The node supports high resolution, low noise data collection from 1 temperature transducer at sample rates up to 128 Hz.

The MicroStrain wireless sensor networks enable simultaneous, high-speed sensing and data aggregation from scalable sensor networks. Our wireless sensing systems are ideal for test and measurement, remote monitoring, system performance analysis, and embedded applications.

Users can easily program nodes for continuous, periodic burst, or event-triggered sampling with the SensorConnect software. The optional web-based SensorCloud interface optimizes data aggregation, analysis, presentation, and alerts for sensor data from remote networks.
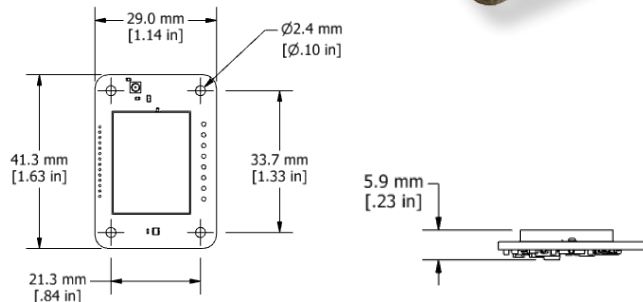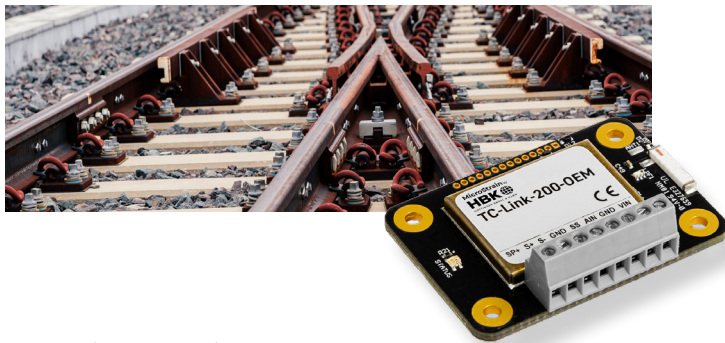
PRODUCT HIGHLIGHTS

- 1 input channel supporting Thermocouples, Resistance Thermometers and Thermistors
- On-board linearization algorithms supporting a wide range of temperature transducers
- Small form factor, low power consumption and wireless
- Supply power from 3.3 to 30 V
- Continuous, periodic burst, and event-triggered sampling
- LXRS and LXRS+ protocol allows lossless data collection, scalable networks and node synchronization of ±50 µs.

HIGH PERFORMANCE

- Up to 128 Hz sampling
- High resolution 24-bit data
- Digital filtering for up to 120 db rejection of 50 and 60 Hz noise
- Datalog up to 8 million data points
- Duty Cycle sensor excitation for low power operation, well-suited for battery powered applications
- Wireless range up to 1km (400 m)

APPLICATIONS

- Thermal profiling
- Refrigeration monitoring
- Production process monitoring
- Quality control
- Environmental monitoring

MICROSTRAIN TC-LINK-200-OEM SPECIFICATIONS

General	
Sensor input channels	Thermocouple, RTD, or Thermistor input, 1 channel
Integrated sensors	Temperature CJC, 1 channel
Digital filter	Adjustable low pass filter with 3db frequency as low as 2.3 Hz and up to 120 db 50/60 Hz rejection

Thermocouple Input	
Measurement range	-210°C to 1820°C (thermocouple type dependent)
Initial accuracy	±0.5°C (20 to 70°C node temperature) ±1°C (-40 to 85°C node temperature)
Resolution	0.1°C
Compatible types	J, K, N, R, S, T, E and B

RTD Input	
Measurement range	-200°C to 850°C
Accuracy	±0.5°C (depending on RTD accuracy)
Resolution	0.1°C
Compatible types	PT-10, PT-50, PT-100, PT-200, PT-500, PT-1000

Thermistor Input	
Measurement range	-40°C to 150°C (Thermistor type dependent)
Accuracy	±3°C (depending on Thermistor accuracy)
Resolution	0.02°C
Compatible types	44004, 44033, 44005, 44030, 44006, 44031, 44007, 44034, 44008, 44032, YSI-400

Integrated Temperature Cold Junction Compensation (CJC) Channel	
Compensation range	-40°C to 105°C (0°C to 105°C for type B Thermocouples)
Accuracy	±0.13°C (20°C to 70°C), ±0.25°C (-40°C to 105°C)
Resolution	0.02°C

* Power source must supply short duration pulse currents as determined by the transmit power setting and the supply voltage.

Sampling	
Sampling modes	Continuous and event triggered
Output options	Temperature, mV, resistance or custom
Sampling rates	Up to 128 Hz
Network capacity	Up to 128 nodes per RF channel (bandwidth calculator) http://www.microstrain.com/configure-your-system
Node synchronization	±50 μsec
Data storage capacity	16 MB (up to 8,000,000 data points)

Operating Parameters				
Wireless communication range	Outdoor/line-of-sight: 2km (ideal), 800 m (typical) Onboard antenna: 1 km (ideal), 400 (typical) Indoor/obstructions: 50 m (typical)			
Radio frequency (RF) transceiver carrier	License-free 2.405 to 2.480 GHz (16 channels)			
RF transmit power	User-set 0 dBm to 20 dBm. Restricted regionally			
Power input range	3.3 V dc to 30 V dc			
Pulse current*	Tx Power	VIN=3.6V	VIN=5.0V	VIN=12V
	+20 dBm	135 mA	100 mA	45 mA
	+16 dBm or less	100 mA	70 mA	32 mA
Operating temperature	-40°C to +105°C			
Angular acceleration limit	500g sustained, 1000g intermittent			
ESD	4 kV			

Physical Specifications	
Dimensions	41.3 mm x 29.0 mm x 5.9 mm
Interface	Solder or screw-down terminal available
Weight	7 grams

Integration	
Compatible gateways	All WSDA gateways
Software	SensorCloud, SensorConnect, Windows 7, 8 & 10 compatible
Software development kit	http://www.microstrain.com/software/mscl
Regulatory compliance	FCC (USA), IC (Canada), CE, RoHS (EU), MIC (Japan)

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