

MicroStrain Sensing Product Datasheet

TC-Link[®]-200

Wireless 12-Channel Thermocouple Node



The TC-Link[®]-200 is a 12-channel wireless sensor used for precise measurement of thermocouples. No calibration is required. Select the thermocouple type and the node will output accurate low noise temperature or mV data.

Wireless sensing eliminates the time and complexity of running long wires. Additionally, the TC-Link-200's high channel count reduces the total cost per channel over many hard-wired DAQs.

Lord wireless sensor networks are fast to deploy and provide reliable, lossless data collection. SensorConnect software can be used for device configuration, live data monitoring, and data analysis. SensorCloud is Lord's optional cloud-based platform that optimizes data aggregation, analysis, and alerts for sensor data collected from remote networks.

HIGH PERFORMANCE SENSING

- 12 Thermocouple input channels
- On-board linearization algorithms
- On-board cold junction compensation (CJC)
- Digital filtering for up to 120 dB rejection of 50 and 60 Hz noise
- Open circuit detection

RELIABLE DATA COLLECTION

- **Lossless, synchronized, and scalable** networks using LXRS and LXRS+ protocol
- Remotely configure nodes and view sensor data using SensorConnect (PC), SensorCloud (web), or MSCL (API library)
- Low battery detection

CONFIGURABLE FOR MANY APPLICATIONS

- Report temperature or mV
- Up to 128 Hz sampling
- Continuous or event-triggered operation
- Transmit data real-time and/or save to onboard memory

RUGGED

- Polycarbonate enclosure
- Bolt-down or DIN rail mounting
- -40 to +85°C operating temperature
- 4kV ESD protection

APPLICATIONS

- Thermal profiling
- Refrigeration monitoring
- Production process monitoring
- Quality control
- Environmental monitoring
- Condition Based Monitoring (CBM)



Wireless 12-Channel Thermocouple Node

Specifications

General	
Sensor input channels	Thermocouple, 12 channels
Integrated sensors	Temperature CJC, 1 channel
Digital filter	Adjustable low pass filter with up to 120 dB 50/60 Hz rejection
Thermocouple Input	
Measurement range	-210°C to 1820°C (thermocouple type dependent)
Initial Accuracy	±0.25°C (20 to 70°C node temperature) ±0.5°C (-40 to 85°C node temperature)
Resolution	24 bit
Noise	+/- 0.01°C typical with K-type thermocouple and default 12Hz filter at 20°C
Compatible types	J, K, N, R, S, T, E and B
Integrated Cold Junction Compensation (CJC) Channel	
Compensation range	-40°C to 85°C (0°C to 85°C for type B Thermocouples)
Accuracy	±0.13°C (20°C to 70°C), ±0.25°C (-40°C to 85°C)
Resolution	0.02°C
Sampling	
Sampling modes	Continuous and event triggered
Output options	Temperature, mV, or custom
Sampling rates	1 S/hr to 128 SPS (1 channel) 1 S/hr to 32 SPS (12 channel)
Network capacity	Up to 128 nodes per RF channel (bandwidth calculator) microstrain.com/configure-your-system
Node synchronization	±50 µsec
Data storage capacity	16 MB (up to 4,000,000 data points)
Operating Parameters	
Battery power	4 AA batteries in series. Total voltage between 3.4 V and 36 V
Battery lifetime	https://www.microstrain.com/wireless/tc-link-200
External power	4 V to 36 V DC
Wireless communication range	Outdoor/line-of-sight: 2 km (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-settable 0 dBm to 20 dBm (restricted regionally)
Operating temperature	-40°C to +85°C
ESD	4 kV
Mechanical Shock Limit	250g/1.5ms with batteries installed 500g/1.5ms without batteries installed (external power source)

Physical Specifications	
Dimensions	129 mm x 117.6 mm x 31 mm (including antenna)
Interface	Screw-down terminal
Weight	283 grams (with batteries), 217 grams (without batteries)
Integration	
Compatible gateways	All WSDA gateways
Software	SensorCloud, SensorConnect, Windows 7, 8 & 10 compatible
Software development kit	microstrain.com/software/mscl
Regulatory compliance	FCC (U.S.), IC (Canada), CE, ROHAS (European Union) MIC (Japan, IMDA (Singapore))

