# **MicroStrain Sensing Product Datasheet**

## TC-Link<sup>®</sup>-200-0EM 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.

LORD Sensing 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.

### FEATURES AND BENEFITS

### **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



### ENGINEERING YOUR SUCCESS.

©2020 Parker Hannifin MicroStrain Sensing. | Document 8400-0125 Revision D. | Subject to change without notice.

# **Wireless Temperature Sensor Node**

### **Specifications**

General					
Sensor input channels	Thermocouple, RTD, or Thermistor input, 1 channel			ut, 1	
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° (depending on t	C hermocoupl	e type)		
Accuracy	$\pm 0.5^{\circ}$ C (20 to 70°C node temperature) $\pm 1^{\circ}$ 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	0.01°C				
Compatible types	PT-10, PT-50, PT-100, PT-200, PT-500, PT-1000				
Thermistor Input					
Measurement range	-40°C to 150°C (depending on Thermistor type)				
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				
Sampling					
Sampling modes	Continuous and event triggered				
Output options	Temperature, mV, Resistance or custom				
Sampling rates	Up to 128 Hz				
Sample rate stability	±5 ppm				
Network capacity	Up to 128 nodes per RF channel (bandwidth calculator:) www.microstrain.com/configure-your-system				
Node synchronization	±50 µsec				
Data storage capacity	16 M Bytes (up to 8,000,000 data points)				
	Operating Parameters				
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-set 0 dBm to 20 dBm. Restricted regionally				
Power input range	3.3 V dc to 30 V dc				
Pulse Current*	Tx Power	VIN = 3.6 V	VIN = 5.0 V	VIN = 12 V	
	+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	500 <i>g</i> sustained, 1000 <i>g</i> 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)		

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



\*



S+

#### **Resistance Thermometer**











Parker Hannifin Corporation MicroStrain Sensing 459 Hurricane Lane Williston, VT 05495 • USA phone: +1.802.862.6629 email: sensing\_sales@LORD.com sensing\_support@LORD.com www.microstrain.com www.parker.com

# **Mouser Electronics**

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

MicroStrain by HBK: TC-Link-200-OEM CE Version TC-Link-200-OEM JPN Version