

# TC-Link<sup>®</sup> -OEM

## OEM Wireless Thermocouple Node

The **TC-Link<sup>®</sup>-OEM Wireless Thermocouple Node** provides a low cost way to embed wireless temperature sensing in industrial systems. TC-Link<sup>®</sup>-OEM features six standard thermocouple input connectors with an embedded cold junction temperature compensation sensor. On-board linearization algorithms are software programmable to support a wide range of thermocouple types including J, K, N, R, S, T, E and B. Its form factor allows remote, long term deployment. The node can simultaneously log data to internal memory and transmit real-time data to a host computer at user programmable data rates. Node Commander<sup>®</sup> software supports configuration of the wireless node including discovery, initialization, radio frequency, sample rate, reading/writing to node EEPROM, calibrating node sensors, managing node batteries including sleep, wake, and cycle power, and upgrading node firmware. The TC-Link<sup>®</sup>-OEM is compatible with any WSDA<sup>®</sup> - Base, WSDA<sup>®</sup> -1000 or SensorCloud<sup>™</sup>.



## Features & Benefits

### Ease of Integration

- Rapidly deployable wireless OEM form factor
- Simple integration supported by comprehensive SDK

### High Performance

- Scalable temperature monitoring wireless sensor network
- High-speed, synchronized platform accepts most analog thermocouples
- Reliable wireless data collection
- Low-power for extended battery life
- SensorCloud – integrated web solution

### Cost Effective

- Reduced cost and rapid time to market for customer's applications
- Aggressive volume discount schedule

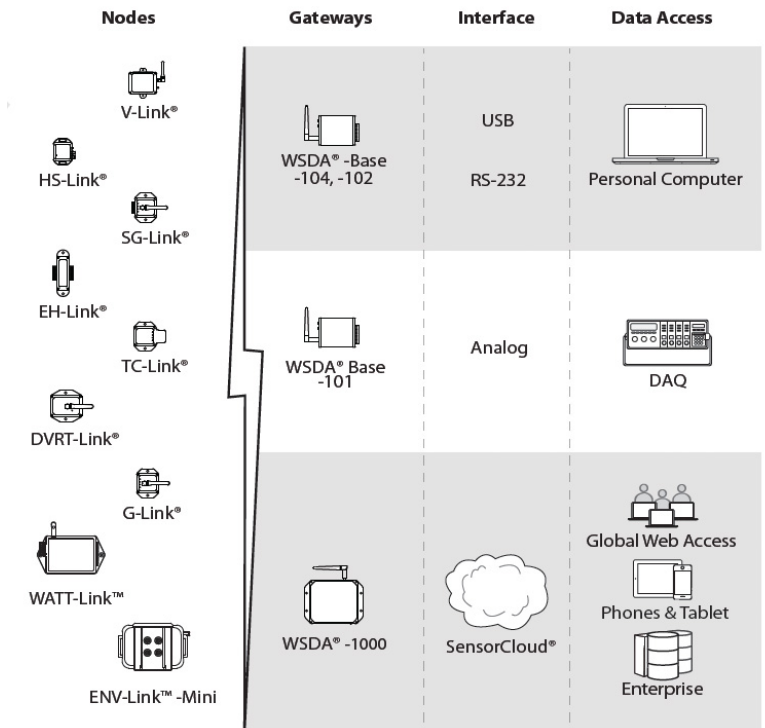
## Applications

Provides easy wireless sensing capability to OEM manufacturers

- Thermal Profiling
- Refrigeration Monitoring
- Production Process Monitoring
- Quality Control

## System Overview

At the heart of **LORD MicroStrain<sup>®</sup>'s LXRS<sup>™</sup> Lossless Data Wireless Sensor Networks** are WSDA<sup>®</sup> gateways, which use our exclusive beaconing protocols to synchronize precision timekeepers within each sensor node in the network. The WSDA<sup>®</sup> also coordinates data collection from all sensor nodes. Users can easily program each node on the scalable network for simultaneous, periodic, burst, or data logging mode sampling with our **Node Commander<sup>®</sup>** software, which automatically configures radio communication to maximize the aggregate sample rate. Optional SensorCloud<sup>™</sup> enabled WSDA<sup>®</sup> support autonomous web-based data aggregation.



Wireless Sensor Network (WSN)

## Specifications

Input channels	6 input channel: supports type J, K, N, R, S, T, E, B (software selectable), 1 on-board ambient CJC channel
Standard thermocouple measurement range	J: -210 to 760 °C; K: -200 to 1372 °C; N: -200 to 1300 °C; R: -50 to 1664 °C; S: -50 to 1664 °C; T: -200 to 400 °C; E: -200 to 1000 °C; B: 250 to 1820 °C
Temperature measurement accuracy	± 0.1 % full scale or ±2 °C, whichever is greater (does not include errors due to TC wire or transducer)
Temperature repeatability	±0.1 °C (does not include errors due to TC wire or transducer)
Temperature resolution	0.0625 °C
Cold junction compensation range	-20 to 85 °C
Thermocouple connector	direct solder connection
Analog to digital (A/D) converter	24 bit sigma-delta A/D
Data storage capacity	log up to 90,000 data sets (up to 630,000 data points)
Sampling modes	low duty cycle (transmit, log or transmit and log)
Low duty cycle sampling rates	2 Hz to 1 sample per 17 minutes
Radio frequency (RF) transceiver carrier	2.4 GHz, direct sequence spread spectrum, license free worldwide (2.405 to 2.480 GHz) - 16 channels, radiated power 0 dBm (1 mW)
RF data packet standard	IEEE 802.15.4, open communication architecture
RF data downloading	8 minutes to download full memory
Range for bi-directional RF link	up to 70 meters line-of-sight
Status LED	node activity
Power	external: +3.2 to +9.0 VDC, ships with 3.6 volt 55 mAh lithium ion non-rechargeable battery
Power consumption	25 mA at idle
Operating temperature	-40 °C to +85 °C
Maximum acceleration limit	500 g standard (high g option available)
Dimensions	50 mm x 28 mm x 12 mm including switch
Weight	19 grams
ROHS	compliant
Compatible base stations	all WSDA®-Base and WSDA®-1000
Software	Node Commander® Windows XP/Vista/7 compatible
Software development kit (SDK)	includes data communications protocol, EEPROM maps and sample code (OS and computing platform independent)

