Supports K Type Thermocouple Sensors

The OleumTech® OTC Wireless Thermocouple Transmitter supports third-party type K thermocouple sensors for monitoring extreme heat process conditions including flares, kilns, and gas turbines. The WT-TC1 features 24-bit analog to digital conversion (ADC) and provides a reliable method of measuring temperature. The WT-TC1 provides a junction box and wiring terminal board for accepting a third-party thermocouple sensor. The temperature output can be reported in Fahrenheit, Celsius, or both. The ultra-low-powered transmitter is powered by a replaceable battery pack that provides up to a 10-year life. The push button LCD interface allows for device configuration and instant access to process data.

Reliable, Scalable, and Safe

The field-proven wireless transmitter communicates with an assigned wireless gateway within the OTC Wireless Sensor and I/O Network creating a highly scalable network, accommodating virtually any I/O requirement.

The OleumTech wireless transmitter is certified for use in Class I, Division 1 (Zone 0) hazardous locations. It is Intrinsically Safe, designed not to cause a spark, and can be serviced without being removed from a process.
## Technical Specifications

### HARDWARE FEATURES

- **Device Functionality**: Temperature Sensing Wireless Transmitter Using Thermocouple Sensor
- **Embedded Controller**: Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)
- **Configuration**: Standard RS232 Serial / BreeZ® Software for PC
- **ADC Resolution**: 24-bit High-Resolution Delta-Sigma ADC
- **Thermocouple Input**: Supports Type K (Temperature Range Depends on Actual Sensor)
- **Power Source**: Self-Contained, Internal 3.6 Vdc Lithium Battery
- **Internal Battery Life**: Up to 10 Years, Based on User Defined Reporting Intervals
- **Local LCD Display**: 32-Character Display (16x2 Lines) with 4 Function Keys + Read Button
- **Instant Displayable Read**: Temperature / Battery Voltage / RF Status
- **Local Configuration**: Integral LCD with Push Button Interface
- **Device Diagnostics**: Health Tags: Battery Voltage, Received Signal Strength Indication (RSSI), RF Refresh, RF Timeout, Error Codes

### WIRELESS COMMUNICATIONS

- **Radio Band**: ISM Band (License-Free)
- **900 MHz / 915 MHz**: FHSS, FSK, AES Encryption 256-bit (900 MHz), 128-bit (915 MHz)
- **2.4 GHz**: DSSS, AES Encryption 128-bit
- **868 MHz**: LBT-AFA, AES Encryption 128-bit
- **Bit Rate**: 900/915 MHz: 9600 bps / 115.2 kbps; 2.4 GHz: 250 kbps; 868 MHz: 80 kbps
- **Output Power (Max)**: 900/915 MHz: 10 mW; 2.4 GHz: 63 mW; 868 MHz: 25 mW
  - **900/915 MHz**: -110 dBm @ 9600 bps, -100 dBm @ 115.2 kbps
  - **2.4 GHz**: -101 dBm @ 250 kbps; 868 MHz: -106 dBm @ 80 kbps
- **RF Range**: 900/915 MHz: Up to 7500 Feet / 1.4 Miles (2.3 km) with Clear Line of Sight
  - 2.4 GHz: Up to 4.3 Miles (7 km) with Clear Line of Sight
  - 868 MHz: Up to 5.2 Miles (8.4 km) with Clear Line of Sight

### CERTIFICATIONS & COMPLIANCE

- **EMC/EMI**: FCC Part 15 (USA), IC ICES-003 (Canada), ACMA (Australia)
- **Safety**: AS/NZS CISPR 32 (Australia), ENS5032 & ENS5024 (EU)
- **Class I, Division 1, Groups A, B, C, D T3C; Ex ia IIC T3**
- **Class I, Zone 0; AEx ia IIC T3**
- **ATEX: Sira 13ATEX2142X; Ex ia IIC T3 Ga; II 1 G**
- **IECEx: SIR 13.0054X; Ex ia IIC T3 Ga**

### MECHANICAL SPECIFICATIONS

- **Dimensions**: 5.5” (W) x 12.3” (H) x 6.4” (D) / 140 mm (W) x 313 mm (H) x 163 mm (D) - Excludes Compression Fitting
- **Package Dimensions**: 10.25” (W) x 14” (H) x 6.5” (D) / 260mm (W) x 356mm (H) x 165mm (D)
- **Package Weight**: ~7 lbs / 3.2 kg
- **Connection Fitting**: 3/4” NPT Female (Compression Fitting Provided)
- **Enclosure Casing Material**: Type 4X Aluminum; IP66

### GENERAL SPECIFICATIONS

- **Operating Conditions**: Ambient Temperature (Class I, Division 1 / Zone 0): -40 °C to 70 °C (-40 °F to 158 °F)
  - LCD Screen: -20 °C to 70 °C (-4 °F to 158 °F)
  - Ambient Temperature (Non-Hazardous Applications): -40 °C to 80 °C (-40 °F to 176 °F)
  - LCD Screen: -20 °C to 70 °C (-4 °F to 158 °F)
  - Humidity: 0 to 99 %, Non-Condensing
- **Warranty**: 2-Year Parts and Labor
- **Country of Origin**: USA

### ORDERING INFORMATION

- **Model Numbers**: WT-0900-TC1, WT-0915-TC1, WT-2400-TC1, WT-0868-TC1
- **Wirelessly Connects To**: OTC Wireless Gateway
- **Configuration Cable**: SX1000-CC2, 20-ft All-in-one Configuration Cable
- **Replacement Battery**: Use OleumTech SX1000-BP3 Only

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1 Ambient temperature and one transmission per 1 min interval without any retries were used to calculate battery life. Actual battery life may vary depending on environmental factors, application, and usage. Use data shown above only as general point of reference. See OleumTech Battery Life Expectancy Chart for predicted battery life based on reporting interval.

2 The maximum RF range data was collected under optimal test conditions, including a clear line of sight between antennas. Actual wireless RF range may vary depending on location, RF interference, weather, antenna type, cable type, and line of sight.

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