Self-Contained Wireless Discrete Process Monitoring Solution

2x Discrete/Digital Inputs

The OleumTech® DS1 Discrete Transmitter features two discrete inputs for connecting to a dry contact or open-drain output/NPN source for notifying state changes. The digital inputs can be set for normally open or normally closed. The wireless transmitter can also report transition counts. The DS1 utilizes on-delay exception reporting method and users can set the debounce filter ranging from 20 ms to 2000 ms to control exactly when the state change occurs. As a safety measure, regardless of state change, this device reports to the wireless gateway every five minutes. This ultra-lower-power 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.

OTC Transmitters  

OTC Gateway

Network Infrastructure  

Cloud (Analytics)
### Technical Specifications

#### HARDWARE FEATURES
- **Device Functionality**: Wireless Transmitter with Discrete Inputs
- **Embedded Controller**: Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)
- **Configuration**: Standard RS232 Serial / BreeZ® Software for PC
- **Inputs**: 2x Discrete Inputs for Dry Contact or Open-Drain Output/NPN Devices
- **Power Source**: Self-Contained, Internal 3.6 Vdc Lithium Battery
- **Sensor Power Up Delay**: Approximately 500 ms
- **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**: Discrete Input 1 & 2 / 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

#### WIRELESS COMMUNICATIONS
- **Type**: ISM Band, Spread Spectrum
  - 900 MHz: FHSS (Frequency Hopping), FSK, AES Encryption 256-bit (900 MHz), 128-bit (915 MHz)
  - 2.4 GHz: DSSS (Direct-Sequence), AES Encryption 128-bit
  - 868 MHz: LBT (Listen Before Talk), AFA (Adaptive Frequency Agility), AES Encryption 128-bit
- **Bit Rate**:
  - 900 MHz: 9600 bps / 115.2 kbps
  - 2.4 GHz: 250 kbps
  - 868 MHz: 80 kbps
- **Output Power (Max)**:
  - 900 MHz: 10 mW
  - 2.4 GHz: 63 mW
  - 868 MHz: 25mW
- **Receiving Sensitivity**:
  - 900 MHz: -110 dBm @ 9600 bps, -100 dBm @ 115.2 kbps
  - 2.4 GHz: -100 dBm @ 250 kbps
  - 868 MHz: -101 dBm @ 80 kbps
- **RF Range**:
  - 900 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), EN55032 & EN55024 (EU)
- **MECHANICAL SPECIFICATIONS**
  - **Dimensions**: 5.5” (W) x 12.6” (H) x 4.4” (D) / 140 mm (W) x 320 mm (H) x 112 mm (D)
  - **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**: 3x 3/4” NPT Female Ports (2x Plugged and Includes 1x 3/4” to 1/2” Reducer Bushing)
  - **Enclosure Casing Material**: Type 4X Aluminum; IP66

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

#### ORDERING INFORMATION
- **Model Numbers**: WT-0900-DS1, WT-0915-DS1, WT-2400-DS1, WT-0868-DS1
- **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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1Ambient 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.

2The 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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