



### Highlights

- 3 analog inputs (0-5 Vdc, 24-bit ADC)
- 1 discrete input (dry contact / NPN)
- Up to a 10-year battery life<sup>1</sup>
- Advanced local LCD display interface
- Self-contained, rugged design
- Installs in minutes
- IP66, -40 °C to 70 °C (-40 °F to 158 °F)
- 900 MHz / 915 MHz / 2.4 GHz / 868 MHz
- Secure AES encryption
- Class I, Division 1 (Zone 0), Intrinsically Safe



US Patent #6,967,589



OTC Transmitters

OTC Gateway

Local  
Controller

RTU/EFM/PLC/  
DCS/HMI/  
Long-Haul Radio



Network Infrastructure



Cloud (Analytics)

## Self-Contained Wireless Analog/Discrete Signal Monitoring Solution

### 3 Analog Inputs + 1 Discrete Input

The OleumTech® OTC Wireless Analog/Discrete Transmitter is a self-contained, battery-powered solution for remotely monitoring up to three 0-5 Vdc analog and one discrete input signals. The WT-AD1 delivers up to 9.5 Vdc of power to connected analog sensors. You can calibrate both the zero and max analog point values.

The discrete input is ideal for connecting to a dry contact or open-drain output/NPN source for monitoring state changes. It can be set to normally open or normally closed mode. This ultra-low-power transmitter is powered by a replaceable battery pack that provides up to a 10-year life.<sup>1</sup> The push button LCD interface allows for device configuration and instant local data access.

### 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 transmitters are certified for use in Class I, Division 1 (Zone 0) hazardous locations. They are intrinsically safe, designed not to cause a spark, and can be serviced without being removed from a process.

### Technical Specifications



#### HARDWARE FEATURES

Device Functionality	· Wireless Transmitter with Analog and Discrete Inputs
Embedded Controller	· Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)
Configuration	· Standard RS232 Serial / BreeZ® Software for PC or LCD Interface
Inputs	· 3 Analog Inputs (0-5 Volt), 24-bit ADC · 1 Discrete Input (For Dry Contact or Open-Drain Output/NPN Device)
Power Source	· Self-Contained, Internal 3.6 Vdc Lithium Battery
Available Power	· Supplies Sensor Power Up to 9.5 Vdc
Sensor Power Up Delay	· Approximately 500 ms
Internal Battery Life	· Up to 10 Years, Based on User Defined Reporting Intervals <sup>1</sup>
Local LCD Display	· 32-Character Display (16x2 Lines) with 4 Function Keys + Read Button
Instant Displayable Read	· Analog Input 1, 2, 3 / Discrete Input / Battery Voltage / RF Status
Local Configuration	· Integral LCD with Four Push Button Interface
Device Diagnostics	· Health Tags: Battery Voltage, Received Signal Strength Indication (RSSI), RF Refresh, RF Timeout

#### 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: 25mW
Receiving Sensitivity	· 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 <sup>2</sup> · 2.4 GHz: Up to 1.9 Miles / 3.1 km with Clear Line of Sight <sup>2</sup> · 868 MHz: Up to 1.5 Miles / 2.4 km with Clear Line of Sight <sup>2</sup>

#### CERTIFICATIONS & COMPLIANCE

EMC/EMI	 <ul style="list-style-type: none"> <li>· FCC Part 15 (USA), IC ICES-003 (Canada), ACMA (Australia)</li> <li>· AS/NZS CISPR 32 (Australia), EN55032 &amp; EN55024 (EU)</li> </ul>
Safety	 <ul style="list-style-type: none"> <li>· Class I, Division 1, Groups A, B, C, D T3C; Ex ia IIC T3</li> <li>· Class I, Zone 0; AEx ia IIC T3</li> <li>· ATEX: Sira 13ATEX2142X; Ex ia IIC T3 Ga; II 1 G</li> <li>· IECEx: SIR 13.0054X; Ex ia IIC T3 Ga</li> </ul>

#### 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	· (3) 3/4" NPT Female Ports: 2 Ports are Plugged and Includes a 3/4" to 1/2" Reducer Bushing
Enclosure Casing Material	· Type 4X Aluminum; IP66

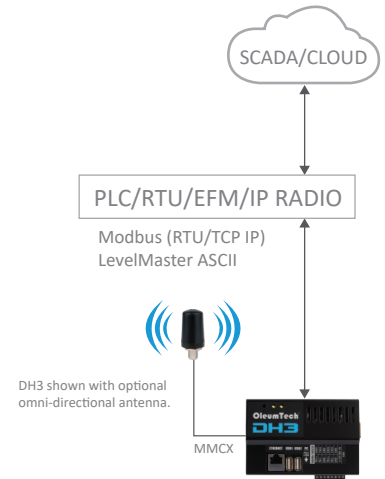
#### GENERAL SPECIFICATIONS

Operating Conditions	<ul style="list-style-type: none"> <li>· Ambient Temperature (Class I, Division 1 / Zone 0): -40 °C to 70 °C (-40 °F to 158 °F)</li> <li>· LCD Screen -20 °C to 70 °C (-4 °F to 158 °F)</li> <li>· Ambient Temperature (Non-Hazardous Applications): -40 °C to 80 °C (-40 °F to 176 °F)</li> <li>· LCD Screen -20 °C to 70 °C (-4 °F to 158 °F)</li> <li>· Humidity: 0 to 99 %, Non-Condensing</li> </ul>
Warranty	· 2-Year Parts and Labor
Country of Origin	· USA

#### ORDERING INFORMATION

Model Numbers	· WT-0900-AD1, WT-0915-AD1, WT-2400-AD1, WT-0868-AD1
Wirelessly Connects To	· OTC Wireless Gateway
Configuration Cable	· SX1000-CC2, 20-ft All-in-One Configuration Cable
Replacement Battery	· Use OleumTech SX1000-BP3 Only

### Networking Diagram



#### OTC GATEWAY

#### OTC TRANSMITTERS

Point-to-Multipoint  
"Star Topology"



<sup>1</sup>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.

<sup>2</sup>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.

©2020 OleumTech Corporation. All rights reserved. OleumTech and BreeZ are registered trademarks of OleumTech Corporation in the United States. All other trademarks and trade names are the property of their respective holders. Specifications, design, and product descriptions subject to change without notice. This device contains proprietary intellectual property protected by US Patent #6967589. Document ID: 67-4040-001\_R

