DATASHEET

WT-LL5

Highlights

- 1-5 Vdc hydrostatic sensor input, 24-bit ADC
- 1 discrete input (dry contact)
- Up to a 10-year battery life[1]
- Advanced local LCD display interface
- Supports Over-the-Air (OTA) functionality for updating the device configuration[2]
- 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 | Network Infrastructure | Cloud (Analytics)

Economical Wireless Liquid Level Monitoring Solution

Supports 1-5 V Hydrostatic Level Sensors

The OleumTech® OTC Wireless Hydrostatic Level Transmitter is designed to accurately measure liquid levels by monitoring the pressure at the bottom of vented top-mount tanks, deep wells, water towers, rivers, and lakes. The WT-LL5 Level Transmitter features a 0-5 Vdc analog input and delivers high-resolution, 24-bit analog-to-digital conversion (ADC) for precise readings. It can supply up to 12 Vdc to connected sensors and offers flexibility by allowing users to choose their preferred sensor and mounting method. Additionally, the WT-LL5 includes a discrete input for added versatility. Powered by a replaceable battery pack, this ultra-low-power transmitter ensures long-lasting performance with a lifespan of up to 10 years. A convenient push-button LCD interface enables easy device configuration and provides immediate access to real-time process data.

Reliable, Scalable, and Safe

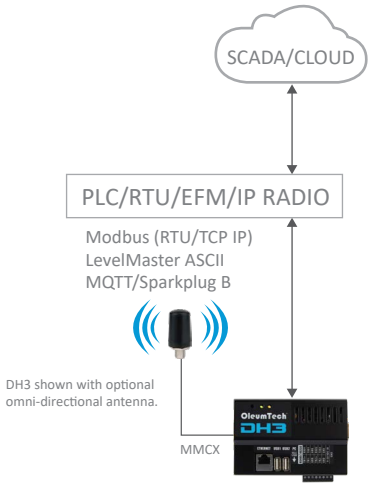
The field-proven wireless transmitter seamlessly communicates with an assigned wireless gateway within the OTC Wireless Sensor and I/O Network, forming a highly scalable system that can accommodate virtually any I/O requirement.

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	· Liquid Level Sensing Wireless Transmitter Using Hydrostatic Technology
Embedded Controller	· Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)
Configuration	· Standard RS232 Serial / BreeZ® Software for PC
Sensor Type	· Submersible Hydrostatic Pressure Sensor (Sold Separately), Wide Operating Temperature Range
Inputs	· 1 Analog Input: 0-5 Volt, 24-bit ADC · 1 Discrete Input: Dry Contact, NPN (Sink), Debounce Filter 20 - 2000 ms, 16-bit Counter
Power Source	· Self-Contained, Internal 3.6 Vdc Lithium Battery
Available Power	· Supplies Sensor Power Up to 12 Vdc
Sensor Power Up Delay	· Approximately 500 ms
Internal Battery Life	· Up to 10 Years, Based on User Defined Reporting Intervals [1]
Local LCD Display	· 32-Character Display (16x2 Lines) with 4 Function Keys + Read Button
Instant Displayable Read	· Level / Discrete Input / 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	
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 / 868 MHz	· DSSS, AES Encryption 128-bit / LBT-AFA, AES Encryption 128-bit
Bit Rate	· 900/915 MHz: 9600 bps / 115.2 kbps · 2.4 GHz: 250 kbps; 868 MHz: 80 kpbs
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 [2] · 2.4 GHz: Up to 1.9 Miles / 3.1 km with Clear Line of Sight [2] · 868 MHz: Up to 1.5 Miles / 2.4 km with Clear Line of Sight [2]
CERTIFICATIONS & COMPLIANCE	
EMC/EMI	· FCC Part 15 (USA), IC ICES-003 (Canada), ACMA (Australia) · AS/NZS CISPR 32 (Australia), EN55032 & EN55024 (EU)
Safety	· 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 12.8" (H) x 4.4" (D) / 140mm (W) x 325mm (H) x 112mm (D)
Dimensions, Sink Weight	· 3.36" / 85.3mm (Height) x 1.25" / 31.8mm (Outer Diameter), 0.5" / 12.7mm (Inner Diameter)
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
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-LL5, WT-0915-LL5, WT-2400-LL5, WT-0868-LL5
Wirelessly Connects To	· OTC Wireless Gateway
Configuration Cable	· SX1000-CC2, OTC Configuration Cable Kit
Replacement Battery	· Use OleumTech SX1000-BP3 Only

Networking Diagram



OTC GATEWAY

OTC TRANSMITTERS

Point-to-Multipoint
"Star Topology"

[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] OTA functionality does not support changing the radio settings or upgrading the device firmware.

[3] 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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