DATASHEET
HLS

OTC
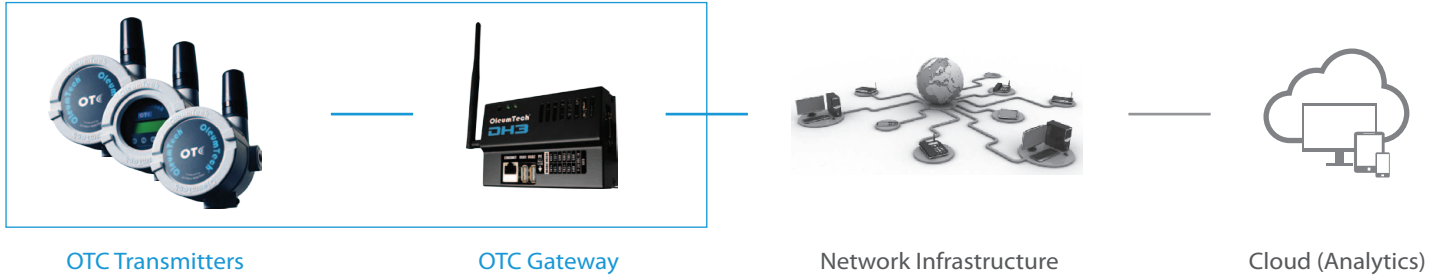

Highlights

- Side-mounting high level detection system
- High level switch included
- Wiring plug eliminates wiring hassle
- Up to a 10-year battery life[1]
- Self-contained, rugged design
- Installs in minutes
- IP66, -40 ˚C to 70 ˚C
- 900 MHz or 2.4 GHz radio option
- Secure AES encryption
- Class I, Division 1 (Zone 0), Intrinsically Safe

CSA C US   CE 0518   Ex II 1G   IEC   IECEx

US Patent #6967589

| OTC Transmitters | OTC Gateway | Network Infrastructure | Cloud (Analytics) |

Self-Contained Wireless Spill Prevention Solution

Side-Mount High Level Switch Included

The OleumTech® HLS High Level Switch Transmitter is a side tank mounting solution for detecting high liquid level conditions. The HLS Transmitter can also report transition counts. The HLS includes the side mountable switch and float with a welded 2-inch NPT adapter, making it a complete ready-to-deploy solution. The HLS utilizes on-delay exception reporting method and users can set the debounce filter ranging from 20 ms to 2000 ms to control just when the high level detection occurs. As a safety measure, regardless of state change, this device reports to the wireless gateway every five minutes. This ultra-low-power transmitter is powered by a replaceable battery pack that provides up to a 10-year life.[1]

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

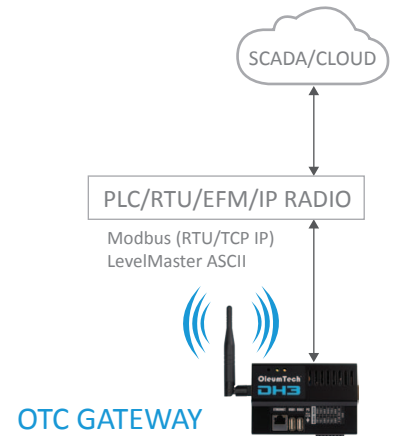| HARDWARE FEATURES	
Device Functionality	· High Level Sensing Wireless Transmitter (Side Mount)
Embedded Controller	· Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)
Configuration	· Standard RS232 Serial / BreeZ® Software for PC
Input	· Single Actuation Point
Power Source	· Self-Contained, Internal 3.6 Vdc Lithium Battery
Internal Battery Life	· Over 10 Years, Based on User Defined Reporting Intervals [1]
Device Diagnostics	· Health Tags: Battery Voltage, Received Signal Strength Indication (RSSI), RF Refresh, RF Timeout
WIRELESS COMMUNICATIONS	
Type: 900 MHz / 2.4 GHz	· 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
Bit Rate	· 900 MHz: 9600 bps / 115.2 kbps ; 2.4 GHz: 250 kbps
Output Power	· 900 MHz: 10 mW; 2.4 GHz: 63 mW
Receiving Sensitivity	· 900 MHz: -110 dBm @ 9600 bps, -100 dBm @ 115.2 kbps / 2.4 GHz: -100 dBm @ 250 kbps
RF Range	· 900 MHz: Up to 7500 Feet (2.3 km) with Clear Line of Sight[2]
	· 2.4 GHz: Up to 7 km / 4.3 miles with Clear Line of Sight[2]
CERTIFICATIONS & COMPLIANCE	
EMC/EMI	· FCC Part 15 (USA)
	· IC ICES-003 (Canada)
Safety	· Class I, Division 1, Groups A, B, C, D T3C; Ex ia IIC T3
	· Class I, Zone 0; AEx ia IIC T3 / Ta = -40 to 158 °F (-40 °C to 70 °C)
	· ATEX: Sira 13ATEX2142X; Ex ia IIC T3 Ga; II 1 G
	· IECEx: SIR 13.0054X; Ex ia IIC T3 Ga / Ta = -4 to 158 °F (-20 °C to 70 °C)
MECHANICAL SPECIFICATIONS	
Dimensions	· 29" (W) x 13" (H) x 4.25" (D) / 737mm (W) x 330mm (H) x 108mm (D)
Package Dimensions	· 13.44" (W) x 20.19" (H) x 7.75" (D) / 341mm (W) x 513mm (H) x 195.58mm (D)
Package Weight	· ~10 lbs / 4.5 kg
Connection Fitting	· 2" NPT Male (Pipe Plug)
Enclosure Casing Material	· Type 4X Aluminum; IP66
Mating Assembly	· Stainless Steel 316
GENERAL SPECIFICATIONS	
Operating Conditions	· Ambient Temperature (Class I, Division 1): -40 °F to 158 °F (-40 °C to 70 °C)
	· Ambient Temperature (Non-Hazardous Applications): -40 °F to 176 °F (-40 °C to 80 °C)
	· Humidity: 0 to 99 %, Non-Condensing
Warranty	· 2-Year Parts and Labor
Country of Origin	· USA
ORDERING INFORMATION	
Model Numbers	· 900 MHz: SM5000-HLS; 2.4 GHz: SM5400-HLS
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

SCADA/CLOUD

PLC/RTU/EFM/IP RADIO

Modbus (RTU/TCP IP)
LevelMaster ASCII

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] 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.

MADE IN USA

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