DATASHEET
SM-HLT

OTC

Highlights

- Single or dual actuation (high / high-high)
- Switch of desired length sold separately
- Wiring plug eliminates wiring hassle
- Up to a 10-year battery life[1]
- Self-contained, rugged design
- Installs in minutes
- Transmitter: IP66, -40 ˚C to 70 ˚C (-40 ˚F to 158 ˚F)
- Level Switch: -40 ˚C to 120 ˚C (-40 ˚F to 248 ˚F) 497.8 PSI
- 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 Spill Prevention Solution

Dual-Level Detection Capabilities

The OleumTech® OTC Wireless High Level Switch Transmitter provides two actuation points for detecting high and high-high liquid level conditions. The transmitter can also report transition counts. This top tank mounting transmitter is designed for use with an OleumTech high level switch. The level switch is sold separately so that you can select the desired length and choose single or dual actuation option. The SM-HLT utilizes an on-delay exception reporting method allowing users to set the debounce filter ranging from 20 ms to 2000 ms to help remove undesired state reporting due to signal noise or hysteresis. As a safety measure, regardless of state change, this device reports to the wireless gateway at a user-defined interval. This ultra-low-power transmitter is powered by a replaceable battery pack that provides up to a 10-year life.[1]
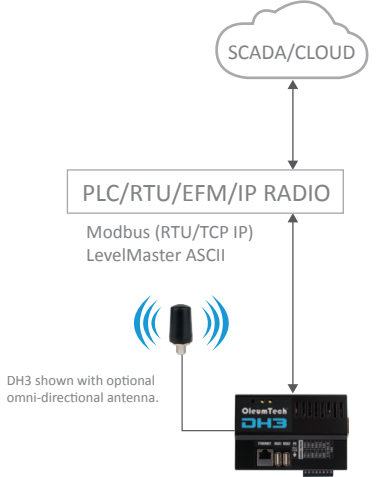
Reliable, Scalable, and Safe

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 (Top / Vertical Mount)
Embedded Controller	· Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)
Configuration	· Standard RS232 Serial / BreeZ® Software for PC
Inputs	· 2 Actuation Points (1 or 2 Float Option)
Power Source	· Self-Contained, Internal 3.6 Vdc Lithium Battery
Internal Battery Life	· Up to 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

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 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 4.3 Miles (7 km) with Clear Line of Sight[2] · 868 MHz: Up to 5.2 Miles (8.4 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" (W) x 12.6" (H) x 4.4" (D) / 127 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	· 2" NPT Male (Pipe Plug)
Enclosure Casing Material	· Type 4X Aluminum; IP66
Switch Materials	· 316 Stainless Steel
Switch Length	· 1 to 6 Feet in 1" Increments / Custom Lengths Also Available
Specific Gravity	· 0.60

GENERAL SPECIFICATIONS

Operating Conditions	· Ambient Temperature (Class I, Division 1 / Zone 0): -40 °C to 70 °C (-40 °F to 158 °F) · Ambient Temperature (Non-Hazardous Applications): -40 °C to 80 °C (-40 °F to 176 °F) · Humidity: 0 to 99 %, Non-Condensing
Switch Temperature Range	· -40 °C to 120 °C (-40 °F to 248 °F)
Switch Pressure Rating	· 497.8 PSI
Warranty	· 2-Year Parts and Labor
Country of Origin	· USA

ORDERING INFORMATION

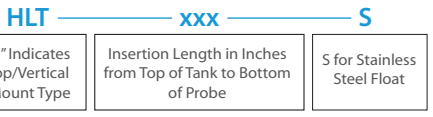|	
Model Numbers	· SM5000-HLT (900), SM5010-HLT (915), SM5400-HLT (2.4), SM5020-HLT (868)
Switch Ordering Numbers	· Single Actuation: HLTxxx-S Dual Actuation: HLMxxxx-S
Wirelessly Connects To	· OTC Wireless Gateway
Configuration Cable	· SX1000-CC2, 20-ft All-in-One Configuration Cable
Replacement Battery	· Use OleumTech SX1000-BP3 Only

Networking Diagram

SCADA/CLOUD

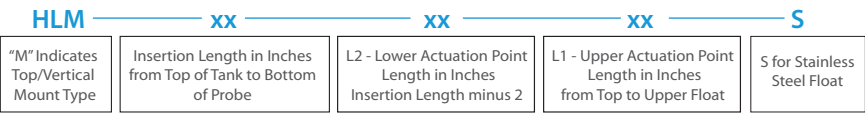PLC/RTU/EFM/IP RADIO

Modbus (RTU/TCP IP)
LevelMaster ASCII

DH3 shown with optional
omni-directional antenna.

OTC GATEWAY

OTC TRANSMITTERS
Point-to-Multipoint
"Star Topology"

Single Actuation Switch Ordering Number

HLT	xxx	S
"T" Indicates Top/Vertical Mount Type	Insertion Length in Inches from Top of Tank to Bottom of Probe	S for Stainless Steel Float

Dual Actuation Switch Ordering Number

HLM	xx	xx	xx	S
"M" Indicates Top/Vertical Mount Type	Insertion Length in Inches from Top of Tank to Bottom of Probe	L2 - Lower Actuation Point Length in Inches Insertion Length minus 2	L1 - Upper Actuation Point Length in Inches from Top to Upper Float	S for Stainless Steel Float

[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.

ISO 9001 REGISTERED COMPANY

MADE IN USA