

DATASHEET
SM-HLT



▶ 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 life¹
- 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 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 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 | <ul style="list-style-type: none"> · FCC Part 15 (USA), IC ICES-003 (Canada), ACMA (Australia) · AS/NZS CISPR 32 (Australia), EN5032 & EN55024 (EU) |
| Safety | <ul style="list-style-type: none"> · 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 | <ul style="list-style-type: none"> · 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

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|-------------------------|--|
| Model Numbers | · SM5000-HLT (900), SM5010-HLT (915), SM5400-HLT (2.4), SM5020-HLT (868) |
| Switch Ordering Numbers | · Single Actuation: HLTxxx-S Dual Actuation: HLMxxx-yy-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 |

Single Actuation Switch Ordering Number

HLT — **xxx** — **S**

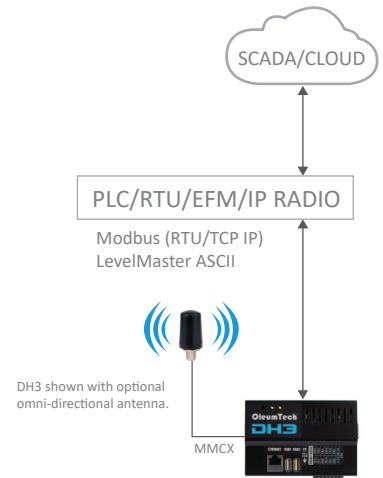
| | | |
|---------------------------------------|--|-----------------------------|
| "T" Indicates Top/Vertical Mount Type | Insertion Length in Inches from Top of Tank to Bottom of Probe | S for Stainless Steel Float |
|---------------------------------------|--|-----------------------------|

Dual Actuation Switch Ordering Number

HLM — **xxx** — **yy** — **S**

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

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 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.

