



"WIRELESS SYSTEMS AND COMMUNICATION SOLUTIONS"

Wio® Hydrostatic Level Monitor

SM5000-HP1

The WIO® Hydrostatic Level Monitor, SM5000-HP1, is part of the WIO family of wireless products. The Hydrostatic Level Monitor is an effective and economical solution for monitoring product levels in vented tanks. The sensor cable is mounted and submersed in the tank liquid, and is suitable for a wide variety of fluids including hydrocarbons, chemicals and water/wastewater.

A complete integrated design combines a submersible pressure transducer, data acquisition board, and a proprietary radio module for telemetry applications. The Hydrostatic Level Monitor eliminates costly cable and conduit runs on both new projects and retrofits, and replaces them with a low-maintenance, versatile and robust wireless solution.

The Hydrostatic Level Monitor utilizes the license free 902-928 MHz ISM band with FHSS (Frequency Hopping Spread Spectrum) and FSK (Frequency Shifting technology, (optional 2.4 GHz DSSS (Direct Sequence Spread Spectrum) version also available), which provides highly reliable communication between remote devices and the primary control panel, EFMs, or RTUs. The Hydrostatic Level Monitor contains extensive self-checking software that continuously verifies the instrument's health. The Hydrostatic Level Monitor is packaged in an explosion proof enclosure and is powered by a 3.6V lithium battery pack that has an expected lifetime of up to five years.

Integrate OleumTech "Wireless Systems and Communication Solutions" into existing systems and enjoy the benefits of tomorrow's low cost, innovative wireless technology today.



FEATURES

- License Free (ISM) Band, FHSS, FSK Technology
- Bi-Directional Radio Link
- Battery Operated (up to 5 years)
- Modbus
- Control and Alarming
- User Configurable or Factory Programmed
- Easy Set-up
- Class I, Division 1 Intrinsically-Safe
- Multi-Vendor Compatible

APPLICATIONS

- Oil and Gas
- SCADA Systems
- PLC/RTU Extensions
- Water/Wastewater
- Pump Control
- Artificial Lift
- Petro-Chem
- Tank Level
- Utilities
- Irrigation Systems

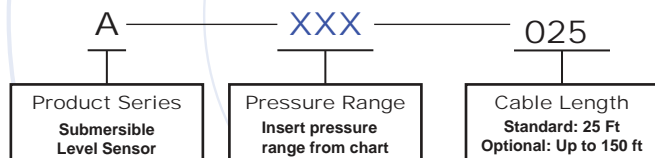
BENEFITS

- Eliminate Costly Conduit and Wiring
- Monitor Your Process Condition 24/7
- Reduce Cost of Labor and Installation
- Reduce Maintenance and Operational Cost
- Meet Regulatory Requirements
- Reliable and Dependable Operation
- Optimize Manpower
- Reduce Safety & Environmental Risk
- Maximize Production

Wio[®] Hydrostatic Level Monitor

Technical Specifications

Sensor Part Numbering



Pressure Range	
Gage (PSIG)	Pressure Range Code
0-5	005
0-10	010
0-15	015

Optional cable lengths available:

6 ft = 006	40 ft = 040
10 ft = 010	50 ft = 050
20 ft = 020	100 ft = 100
35 ft = 035	150 ft = 150

SYSTEM HARDWARE

- Embedded Controller:** Ultra low power RISC microcontroller with internal FLASH (field upgradeable)
- User's Interface:** Standard RS232 serial interface
- I/O Interface:** 1 - Analog input (0.5-4.5 or 1-5 volt), 12 bit ADC

WIRELESS COMMUNICATIONS

- Type (Standard):** 900 MHz: ISM, FSK, FHSS (Frequency Hopping Spread Spectrum)
- (Optional):** 2.4 GHz: DSSS (Direct Sequence Spread Spectrum)
- Frequency:** 902 - 928 MHz
- Data Rate:** 115.2 Kbps/9600 bps
- Output Power:** 1mW (default) up to 10 mW
- Receiving Sensitivity:** -100 dBm
- Range:** Up to 3,000 ft based on terrain and clear line of sight
- Compliance:** Complies with FCC Part 15
Complies with Canada IC requirements of CISPR 22



MECHANICAL SPECIFICATIONS

- Monitor Dimensions:** 5" x 14" x 4.25" (W x H x D)
- Mounting Hardware:** Pipe or Direct Mount
- Sensor Dimensions:** 4.78" x 0.88"
- Cable Length:** 25 ft cable (Std) (for other lengths, contact factory)
- Wetted Material:** Sensor - Stainless Steel
Cable - Hytrel
- Sensor Housing:** 304 Stainless Steel

ELECTRICAL SPECIFICATIONS

- Power:** Self-contained 3.6 volt lithium battery pack
- Battery Life:** Up to 5 years with typical usage

CERTIFICATIONS

- Safety:** Intrinsically safe for use in hazardous environments.
Class I, Zone 0, Ex ia IIC T3
Class I, Zone 0, AEx ia IIC T3
Class I, Division 1, Group A, B, C & D T3C

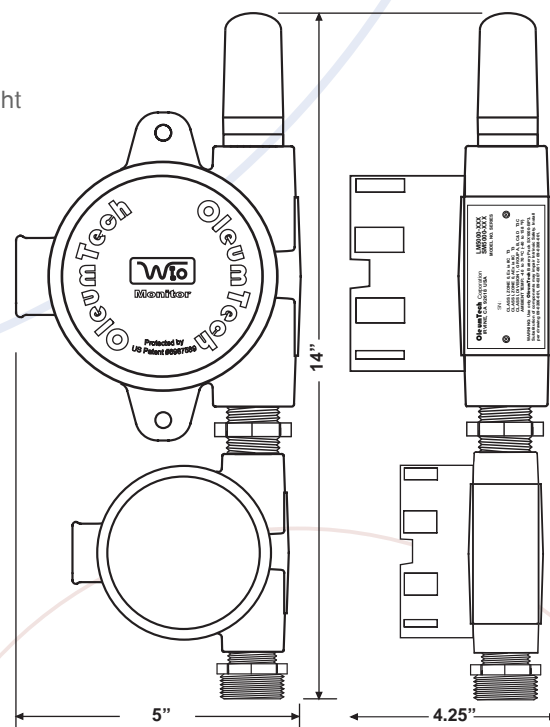


Intrinsic Safety Entity Parameters:

- Voc: 11.6 Vdc
 - Isc: 152 mA
 - CA: 1.5 µF
 - La: 1 mH
- Third party transmitters may be attached to the Pressure Monitor that meet the Intrinsic Safety Entity concept which allows two intrinsically safe devices with entity parameters not specifically examined in combination, as a system when:
 $V_{max} \geq V_{oc}$, $I_{max} \geq I_{sc}$, $C_i + C_{cable}$, C_a , $L_i + L_{cable} \leq L_a$

GENERAL SPECIFICATIONS

- Operating Conditions:**
Ambient Temperature (Class I Division 1): -40 to 70 °C (-40 to 158 °F)
Ambient Temperature (Non-hazardous Applications): -40 to 85 °C (-40 to 185 °F)
Humidity: 0 to 99%, non-condensing



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