



HOBOnet Water Level Sensor Interface

Product Images



Short Description

A wireless sensor interface that works with the HOBOnet system for remote water level monitoring. The HOBOnet water level sensor interface features a pre-configured, easily deployed wireless sensor that communicates accurate, reliable water level data directly to a HOBOnet RX3000 or HOBOnet MicroRX station, the core component of the HOBOnet remote monitoring system.

Description

Overview

The HOBOnet water level sensor interface features a pre-configured, easily deployed wireless sensor that communicates accurate, reliable water level data directly to a [HOBOnet RX3000](#) or HOBOnet Micro [RX2105/RX2106](#)

station, the core component of the HOBOnet remote monitoring system.

HOBOnet is a cost-effective, scalable, user-friendly wireless sensor network that lets you streamline data retrieval by effortlessly monitoring multiple wells with a single cellular device. Data is accessed from anywhere, at any time, through the customizable dashboard in HOBOLink, Onset's innovative cloud software platform – eliminating the need for frequent site visits that are both time-consuming and costly. HOBOLink also sends automatic, real-time text/email notifications to alert you of any sensor or system alarms, providing the insights you need to make informed decisions, react quickly to stay ahead of issues, and ensure compliance.

Other Benefits:

- User-friendly setup process
- A proven water level sensor for accurate, reliable readings
- Rechargeable batteries and built-in solar panel eliminate downtime
- Real-time insights via customised dashboards in HOBOLink, leaving delays in the past
- No data loss due to user error, with temperature-compensated pressure readings for accurate, reliable information
- HOBOLink cloud dashboards for in-depth data analysis and smarter decision-making
- Kevlar-reinforced cable with integrated strain relief mechanism.

Key Features

Sensor Features

- Non-vented design reduces maintenance
- Durable, ceramic sensor can withstand freezing
- 3-point NIST-traceable calibration certificate

Wireless Features

- Sub-GHz wireless mesh self-healing technology for expansive coverage
- 450 to 600 meter (1,500 to 2,000 feet) wireless range and up to five hops
- Up to 50 wireless sensors or 336 data channels per one HOBOLink RX station
- Simple button-push to join the HOBOnet wireless network
- Onboard memory to ensure no data loss
- Powered by rechargeable AA batteries and built-in solar panel.

IMPORTANT

A complete system requires at least one HOBOnet Water Level Sensor, a direct read cable, and a [HOBOLink RX3000](#) Remote Monitoring Station and HOBOnet Wireless Manager (or a HOBOLink Micro [RX2105/RX2106](#) Station with an integrated HOBOnet Wireless Manager). HOBOnet Wireless Repeaters (RXW-RPTR-868 or RXW-RPTR-B-868) can be added to extend the range.

Additional Information

Country of Manufacture	United States
	<p>Wireless Mote Operating Temperature Range -25° to 60°C (-13° to 140°F) with rechargeable batteries -40° to 70°C (-40° to 158°F) with lithium batteries Radio Power 12.6 mW (+11 dBm) non-adjustable Transmission Range Reliable connection to 457.2 m (1,500 ft.) line of sight at 1.8 m (6 ft.) high Reliable connection to 609.6 m (2,000 ft.) line of sight at 3 m (10 ft.) high IEEE 802.15.4 Radio Operating Frequencies RXW-WL-900: 904-924 MHz RXW-WL-868: 866.5 MHz RXW-WL-921: 921 MHz RXW-WL-922: 916-924 MHz Modulation Employed OQPSK (Offset Quadrature Phase Shift Keying) Data Rate Up to 250 kbps, non-adjustable Duty Cycle <1% Maximum Number of Motes Up to 50 wireless sensors or 336 data channels per one HOBO RX station Logging Rate 1 minute to 18 hours Number of Data Channels 4 (Water Level, Differential Pressure, Water Temperature, Barometric Pressure) Battery Type / Power Source Two AA 1.2V rechargeable NiMH batteries, powered by built-in solar panel or two AA 1.5 V non-rechargeable lithium batteries for operating conditions of -40 to 70°C (-40 to 158°F) Battery Life With NiMH batteries: Typical 3-5 years when operated in the temperature range -20° to 40°C (-4°F to 104°F) and positioned toward the sun, operation outside this range will reduce the battery service life. With non-rechargeable lithium batteries: 1 year, typical use Memory 16 MB Dimensions Interface Connector Diameter: 25.4 mm (1 inch) Cable length: 1.83 m (6 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches) Weight 229 g (8.08 oz) Materials Sensor: Polycarbonate housing encasing epoxy sealed circuit board Cable: Polyurethane Mote: PC/PBT, silicone rubber seal Environmental Rating Mote: IP67, NEMA 6 Water Level Sensor See referenced below * Water Level Accuracy: With accurate reference water level measurement, known water density, & a stable temp environment. System Water Level Accuracy equals the sum of the Barometric Water Level Accuracy plus the selected sensor end Water Level Accuracy. ** Raw Pressure Accuracy: Absolute pressure sensor accuracy includes all sensor drift, temperature, and hysteresis-induced errors. *** Changes in Temperature: Allow 20 minutes in water to achieve full temperature compensation of the pressure sensor. Can be up to 0.5% of additional error due to rapid temperature changes. Measurement accuracy also depends on temperature response time. Pressure (Absolute) and Water Level Measurements MX2001-01-SS-S and MX2001-01-Ti-S Operation Range 0 to 207 kPa (0 to 30 psia); approximately 0 to 9 m (0 to 30 ft) of water depth at sea level, or 0 to 12 m (0 to 40 ft) of water at 3,000 m (10,000 ft) of altitude Factory Calibrated Range 69 to 207 kPa (10 to 30 psia), 0° to 40°C (32° to 104°F) Burst Pressure 310 kPa (45 psia) or 18 m (60 ft) depth Water Level Accuracy* Typical error: ±0.05% FS, 0.5 cm (0.015 ft) water Maximum error: ±0.1% FS, 1.0 cm (0.03 ft) water Raw Pressure Accuracy** ±0.3% FS, 0.62 kPa (0.09 psi) maximum error Resolution ~0.02 kPa (0.003 psi), 0.21 cm (0.007 ft) water Pressure Response Time (90%)+** ~1 second at a stable temperature Pressure (Absolute) and Water Level Measurements MX2001-02-SS-S Operation Range 0 to 400 kPa (0 to 58 psia); approximately 0 to 30.6 m (0 to 100 ft) of water depth at sea level, or 0 to 33.6 m (0 to 111 ft) of water at 3,000 m (10,000 ft) of altitude Factory Calibrated Range 69 to 400 kPa (10 to 58 psia), 0° to 40°C (32° to 104°F) Burst Pressure 500 kPa (72.5 psia) or 40.8 m (134 ft) depth Water Level Accuracy* Typical error: ±0.05% FS, 1.5 cm (0.05 ft) water Maximum error: ±0.1% FS, 3.0 cm (0.1 ft) water Raw Pressure Accuracy** ±0.3% FS, 1.20 kPa (0.17 psi) maximum error Resolution ~0.04 kPa (0.006 psi), 0.41 cm (0.013 ft) water Pressure Response Time (90%)+** ~1 second at a stable temperature Pressure (Absolute) and Water Level Measurements MX2001-03-SS-S Operation Range 0 to 850 kPa (0 to 123.3 psia); approximately 0 to 76.5 m (0 to 251 ft) of water depth at sea level, or 0 to 79.5 m (0 to 262 ft) of water at 3,000 m (10,000 ft) of altitude Factory Calibrated Range 69 to 850 kPa (10 to 123.3 psia), 0° to 40°C (32° to 104°F) Burst Pressure 1,200 kPa (174 psia) or 112 m (368 ft) depth Water Level Accuracy* Typical error: ±0.05% FS, 3.8 cm (0.125 ft) water Maximum error: ±0.1% FS, 7.6 cm (0.25 ft) water Raw Pressure Accuracy** ±0.3% FS, 2.55 kPa (0.37 psi) maximum error Resolution ~0.085 kPa (0.012 psi), 0.87 cm (0.028 ft) water Pressure Response Time (90%)+** ~1 second at a stable temperature Pressure (Absolute) and Water Level Measurements MX2001-04-SS-S and MX2001-04-Ti-S Operation Range 0 to 145 kPa (0 to 21 psia); approximately 0 to 4 m (0 to 13 ft) of water depth at sea level, or 0 to 7 m (0 to 23 ft) of water at 3,000 m (10,000 ft) of altitude Factory Calibrated Range 69 to 145 kPa (10 to 21 psia), 0° to 40°C (32° to 104°F) Burst Pressure 310 kPa (45 psia) or 18 m (60 ft) depth Water Level Accuracy* Typical error: ±0.075% FS, 0.3 cm (0.01 ft) water Maximum error: ±0.15% FS, 0.6 cm (0.02 ft) water Raw Pressure Accuracy** ±0.3% FS, 0.43 kPa (0.063 psi) maximum error Resolution ~0.014 kPa (0.002 psi), 0.14 cm (0.005 ft) water Pressure Response Time (90%)+** ~1 second at a stable temperature Barometric Pressure (RXW-WL-868) Operation Range 66 to 107 kPa (9.57 to 15.52 psia) Temperature Calibrated Range -20 to 50°C (-4 to 122°F) Accuracy ±0.2 kPa (±0.029 psi) over full temperature range at fixed pressure; maximum error ±0.5% FS Water Level Accuracy* Typical error: ±0.075% FS, 0.3 cm (0.01 ft) water Maximum error: ±0.15% FS, 0.6 cm (0.02 ft) water Resolution ~0.01 kPa (0.0015 psi) Response Time ~1 second at stable temperature Stability (Drift) ~0.01 kPa (0.0015 psi) per year Temperature Measurements (All Sensor End Models MX2001-0x-SS-S and MX2001-0x-Ti-S) Operation Range -20° to 50°C (-4° to 122°F) Accuracy ±0.44°C from 0° to 50°C (±0.79°F from 32° to 122°F) Resolution 0.1°C at 25°C (0.18°F at 77°F) Response Time (90%) 5 minutes in water (typical) Stability (Drift) 0.1°C (0.18°F) per year</p>
Ideal For	Professional
Brand	Onset HOBO
Onset Product Series	MX2000
Typical applications	Environmental (Outdoor), Field Research
Measurements	Barometric Pressure, Pressure, Temperature, Water Level, Water Temperature

Additional Options

Cable Length	5 Metres (CABLE-DR-05)
	10 Metres (CABLE-DR-10)
	15 Metres (CABLE-DR-15)
	30 Metres (CABLE-DR-30)
	60 Metres (CABLE-DR-60)
Select Water Level Sensor Required	Fresh Water Stainless Steel - 4 Metre Range (MX2001-04-S)
	Fresh Water Stainless Steel - 9 Metre Range (MX2001-01-S)
	Fresh Water Stainless Steel - 30 Metre Range (MX2001-02-S)
	Fresh Water Stainless Steel - 76 Metre Range (MX2001-03-S)
	Salt Water Titanium - 4 Metre Range (MX2001-04-Ti-S)
	Salt Water Titanium - 9 Metre Range (MX2001-01-Ti-S)
Well Cap for Mounting HOBO Loggers in Wells	WELL-CAP-01