

MX2001-04-SS • MX2001-01-SS • MX2001-02-SS • MX2001-03-SS • MX2001-04-TI •
MX2001-01-TI

HOBO Water Level Data Logger

Bluetooth wireless communication

The industry's first water level data logger designed for convenient wireless setup and download from mobile devices or Windows laptop via Bluetooth technology.

Important Information

Requires HOBObconnect and a Direct Read Cable (CABLE-DR-xxx). Please contact us for availability or select the cable under Compatible Items below. Get cloud storage and access to the powerful tools of LI-COR Cloud® IoT software! (formerly HOBOLink) Add an MX Data Plan!



Compatible with
HOBObconnect® Monitoring App
LI-COR Cloud® MX Data Plan



Supported Measurements

Barometric Pressure, Water Level, Water Temperature

Features

- Wireless data offload to mobile devices or Windows computers via Bluetooth
- Integrated barometric pressure sensor enables direct water level readout
- Direct-read cable connects sensor to top-end logger/transmitter
 - The cable includes Kevlar strength member
 - Cables are interchangeable so loggers are easy to redeploy in future applications
 - The logger and sensor add 0.39 meters to the length of the cable
 - Cable length can vary up to 3% from the length ordered
 - The 1, 2, 5, 10, 15, 30 and 60 meter cable lengths are in stock; custom cable lengths have a 1 to 2 week lead time
- Reference water level can be entered at the start of the deployment
- Use HOBObconnect for setup, data viewing, and data sharing
- Powered by two user-replaceable AA batteries in the top-end unit
- Several logging modes: normal, multi-rate logging, and event-triggered burst-logging
- Durable ceramic sensor
- Available with stainless steel or titanium sensor ends
- 3-point NIST-traceable calibration certificate included for the water pressure sensor

Contact Us

Sales (8am to 5pm ET, Monday through Friday)

- Email sales@onsetcomp.com
- Call 1-508-759-9500
- In U.S. toll free 1-800-564-4377
- Fax 1-508-759-9100

Onset Computer Corporation
470 MacArthur Boulevard
Bourne, MA 02532

Technical Support (8am to 5pm ET, Monday through Friday)

- Contact Product Support www.onsetcomp.com/support/contact
- Call 1-508-759-9500
- In U.S. toll free 1-877-564-4377

HOBO Water Level Data Logger (MX2001) Specifications

Pressure (Absolute) and Water Level Measurements MX2001-01-SS-S and MX2001-01-Ti-S

Operation Range	0 to 207 kPa; approximately 0 to 9 m of water depth at sea level, or 0 to 12 m of water at 3,000 m of altitude (0 to 30 p
Factory Calibrated Range	69 to 207 kPa, 0° to 40°C (10 to 30 psia, 32° to 104°F)
Burst Pressure	310 kPa or 18 m depth (45 psia or 60 ft depth)
Water Level Accuracy*	Typical error: ±0.05% FS, 0.5 cm water (Typical error: ±0.05% FS, 0.015 ft water) Maximum error: ±0.1% FS, 1.0 cm water (Maximum error: ±0.1% FS, 0.03 ft water)
Raw Pressure Accuracy**	±0.3% FS, 0.62 kPa maximum error (±0.3% FS, 0.09 psi maximum error)
Resolution	<0.02 kPa, 0.21 cm water (<0.003 psi, 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 of water depth at sea level, or 0 to 33.6 m of water at 3,000 m of altitude (approximately 0 to
Factory Calibrated Range	69 to 400 kPa, 0° to 40°C (10 to 58 psia, 32° to 104°F)
Burst Pressure	500 kPa or 40.8 m depth (72.5 psia or 134 ft depth)
Water Level Accuracy*	Typical error: ±0.05% FS, 1.5 cm water (Typical error: ±0.05% FS, 0.05 ft water) Maximum error: ±0.1% FS, 3.0 cm water (Maximum error: ±0.1% FS, 0.1 ft water)
Raw Pressure Accuracy**	±0.3% FS, 1.20 kPa maximum error (±0.3% FS, 0.17 psi maximum error)
Resolution	<0.04 kPa, 0.41 cm water (<0.006 psi, 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; approximately 0 to 25 ft water depth at sea level, or 0 to 26.2 ft water at 3,000 m of
Factory Calibrated Range	69 to 850 kPa, 0° to 40°C (10 to 123.3 psia, 32° to 104°F)
Burst Pressure	1,200 kPa or 112 m depth (174 psia or 368 ft depth)
Water Level Accuracy*	Typical error: ±0.05% FS, 3.8 cm water (Typical error: ±0.05% FS, 0.125 ft water) Maximum error: ±0.1% FS, 7.6 cm water (Maximum error: ±0.1% FS, 0.25 ft water)
Raw Pressure Accuracy**	±0.3% FS, 2.55 kPa maximum error (±0.3% FS, 0.37 psi maximum error)
Resolution	<0.085 kPa, 0.87 cm water (<0.012 psi, 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; approximately 0 to 4 m of water depth at sea level, or 0 to 7 m of water at 3,000 m of altitude (0 to 21 psia)
Factory Calibrated Range	69 to 145 kPa, 0° to 40°C (10 to 21 psia, 32° to 104°F)
Burst Pressure	310 kPa or 18 m depth (45 psia or 60 ft depth)
Water Level Accuracy*	Typical error: ±0.075% FS, 0.3 cm water (Typical error: ±0.075% FS, 0.01 ft water) Maximum error: ±0.15% FS, 0.6 cm water (Maximum error: ±0.15% FS, 0.02 ft water)
Raw Pressure Accuracy**	±0.3% FS, 0.43 kPa maximum error (±0.3% FS, 0.063 psi maximum error)
Resolution	<0.014 kPa, 0.14 cm water (<0.002 psi, 0.005 ft water)
Pressure Response Time (90%***)	<1 second at a stable temperature

Barometric Pressure (MX2001-TOP)

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 over full temperature range at fixed pressure; maximum error ±0.5% FS (±0.029 psi over full temperature range)
Water Level Accuracy*	Typical error: ±0.075% FS, 0.3 cm water (Typical error: ±0.075% FS, 0.01 ft water) Maximum error: ±0.15% FS, 0.6 cm water (Maximum error: ±0.15% FS, 0.02 ft water)
Resolution	<0.01 kPa (<0.0015 psi)
Response Time	<1 second at stable temperature
Stability (Drift)	<0.01 kPa per year (<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, see manual for plot (±0.79°F from 32° to 122°F, see manual for plot)
Resolution	0.1°C at 25°C, see manual for plot (0.18°F at 77°F, see manual for plot)
Response Time (90%)	5 minutes in water (typical)
Stability (Drift)	0.1°C per year (0.18°F per year)

Logger

Operating Range	-20° to 50°C (-4° to 122°F)
Radio Power	1 mW (0 dBm)
Transmission Range	Approximately 30.5 m line-of-sight (Approximately 100 ft line-of-sight)
Wireless Data Standard	Bluetooth Low Energy (Bluetooth Smart®)
Logging Rate	1 second to 18 hours
Logging Modes	Fixed interval, multiple intervals with up to 8 user-defined logging intervals and durations, or burst
Memory Modes	Wrap when full or stop when full
Start Modes	Immediate, date & time, or next interval
Stop Modes	When memory full, date & time, or after a set logging period
Time Accuracy	±1 minute per month 0° to 50°C (±1 minute per month 32° to 122°F)
Battery	Two AA, 1.5 V alkaline batteries, user replaceable
Battery Life	1 year, typical with logging interval of 1 minute. Faster logging and/or statistics sampling intervals, entering burst logging mode, excessive readouts, checking of Full Status Details, and remaining connected with the app will impact battery life.
Memory	256 KB memory (30,000 sets of measurements)
Full Memory Download Time	Approximately 2 minutes; may take longer the further the device is from the top end of the logger
Dimensions	Top end (MX2001-TOP): 2.54 cm (1.0 inches) diameter, 28.9 cm (11.4 inches) length; mounting hole 7.6 mm (0.3 inches) diameter Sensor end (MX2001-0x-SS-S and MX2001-0x-Ti-S): 2.54 cm (1.0 inches) diameter, 9.91 cm (3.9 inches) length Note: The length of the water level logger cable (CABLE-DR-xxx) can vary -0% to +3% +10 cm (3.9 inches) from the length ordered. The logger adds 38.8 cm (15.3 inches) to the length of the cable ordered.
Weight	Top end (MX2001-TOP): Approximately 136 g (4.78 oz) in air Stainless sensor end (MX2001-0x-SS-S): Approximately 141.4 g (4.99 oz) in air; approximately 93.4 g (3.3 oz) in fresh water Titanium sensor end (MX2001-0x-Ti-S): Approximately 80 g (2.83 oz) in air; approximately 37 g (1.3 oz) in fresh water
Wetted Materials	Top end (MX2001-TOP): PVC housing, Polycarbonate end cap, Viton O-ring Stainless sensor end (MX2001-0x-SS-S): Stainless steel housing, Viton and Buna-N O-rings, ceramic sensor in stainless steel end cap Titanium sensor end (MX2001-0x-Ti-S): Acetal housing, Viton and Buna-N O-rings, ceramic sensor in Titanium end cap Cable (CABLE-DR-XXX): Polycarbonate strain relief (top end connection), PVC end cap (sensor connection), nylon collar nuts, Viton O-rings, polyurethane jacket
Environmental Rating	Top end: NEMA 6, IP67; Intermittent 100% RH Sensor end: IP68

Notices

* Water Level Accuracy: With accurate reference water level measurement, known water density, and a stable temperature 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. There can be up to 0.5% of additional error due to rapid temperature changes. Measurement accuracy also depends on temperature response time.

