

MX20-01 • MX20-01-TI • MX20-02 • MX20-02-TI • MX20-03 • MX20-03-TI • MX20-04 • MX20-04-TI



HOBO MX20 Research-Grade Water Level Data Logger

with Easy, Fast Bluetooth Wireless Offload

Research-grade accuracy for continuous monitoring of absolute pressure, water level, and temperature in durable steel (freshwater) or Titanium (saltwater) options. Easy wireless offload. Four depths: 4m (13'), 9m (30'), 30m (100'), 76m (250'). Includes NIST-traceable certificate.

Important Information

Requires a compatible mobile device or Windows computer and the HOBOconnect app. System requirements can be found at the bottom of the HOBOconnect software page.



Compatible with
HOBOconnect® Monitoring App

Supported Measurements

Absolute Pressure, Barometric Pressure, Water Level, Water Temperature

Features

- Research-grade accuracy supports groundwater studies, regulatory reporting, water resource management, scientific research and other professional applications
- Rugged construction endures for long-term monitoring up to 10 years
- Time-saving wireless data offload from integrated Bluetooth simplifies workflows
- HOBOconnect mobile app provides easy conversion to accurate water level reading, fully compensated for barometric pressure, temperature, and water density
- Cost-effective performance solution for monitoring large number of wells/locations
- Reliable absolute pressure sensor eliminates the need for vent tubes prone to clogging or freezing and desiccants
- Available in four depth ranges
- Compact-diameter design allows deployment in narrow wells while leaving room for suspension cables and other equipment
- Available in stainless steel (freshwater) and Titanium (saltwater) versions
- 3-point NIST-traceable calibration certificate included

Benefits of LI-COR Cloud Monitoring Software

- Access monitoring data from anywhere

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

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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 MX20 Research-Grade Water Level Data Logger (MX20-0x) Specifications

Pressure (Absolute) and Water Level Measurements MX20-01 | MX20-01-Ti

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*	9m (30') Typical error: $\pm 0.05\%$ FS, 1.0 cm (0.03 ft) water Maximum error: $\pm 0.1\%$ FS, 3 cm (0.1 ft) water
Raw Pressure Accuracy**	$\pm 0.3\%$ 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; measurement accuracy also depends on temperature response time

Pressure (Absolute) and Water Level Measurements MX20-02 | MX20-02-Ti

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: $\pm 0.05\%$ FS, 1.5 cm (0.05 ft) water Maximum error: $\pm 0.1\%$ FS, 3 cm (0.1 ft) water
Raw Pressure Accuracy**	$\pm 0.3\%$ 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; measurement accuracy also depends on temperature response time

Pressure (Absolute) and Water Level Measurements MX20-03 | MX20-03-Ti

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 207 kPa (10 to 30 psia), 0° to 40°C (32° to 104°F)
Burst Pressure	1200 kPa (174 psia) or 112 m (368 ft) depth
Water Level Accuracy*	Typical error: $\pm 0.05\%$ FS, 3.8 cm (0.125 ft) water Maximum error: $\pm 0.1\%$ FS, 7.6 cm (0.25 ft) water
Raw Pressure Accuracy**	$\pm 0.3\%$ 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; measurement accuracy also depends on temperature response time

Pressure (Absolute) and Water Level Measurements MX20-04 | MX20-04-Ti

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*	4m (13') Typical error: $\pm 0.075\%$ FS, 0.3 cm (0.01 ft) water Maximum error: $\pm 0.15\%$ FS, 0.6 cm (0.02 ft) water
Raw Pressure Accuracy**	$\pm 0.3\%$ 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; measurement accuracy also depends on temperature response time

Temperature Measurements (All Models)

Operation Range	-20° to 50°C (-4° to 122°F)
Accuracy	$\pm 0.2^\circ\text{C}$ from 0° to 50°C ($\pm 0.36^\circ\text{F}$ from 32° to 122°F)
Resolution	0.002°C at 25°C (0.004°F at 77°F)
Response Time (90%)	5 minutes in water (typical)
Stability (Drift)	0.1°C (0.18°F) per year

Logger

Wireless Standard	Bluetooth 5 LE
Transmission Range	Approximately 3-10 ft line-of-sight
Radio Power	1mW (0 dBm)
Real-time Clock	± 1 minute per month 0° to 50°C (32° to 122°F)
Battery	2/3 AA, 3.6 Volt lithium, factory-replaceable
Battery Life (Typical Use)	3 years with 1-minute logging, Bluetooth always on 7 years with 1-minute logging, Bluetooth and LED off 10 years with 5-minute logging, Bluetooth and LED off
Memory	Approximately 400,000 sets of pressure and temperature measurements
Weight	Stainless steel models: approximately 210 g (7.4 oz) Titanium models: approximately 140 g (4.8 oz)
Dimensions	2.46 cm (0.97 inches) diameter, 15 cm (5.9 inches) length; mounting hole 6.3 mm (0.25 inches) diameter
Wetted Materials	316 stainless steel, Viton® o-rings, acetyl cap, ceramic sensor Titanium models: Titanium, Viton O-rings, acetal cap, ceramic sensor
Logging Modes	Fixed-interval (normal or statistics), burst or multiple intervals with up to 8 user-defined intervals and durations; logging intervals from 1 second to 18 hours. Refer to the HOBObconnect User's Guide for details.
Launch Modes	Immediate start and delayed start
Start Modes	Immediate, next interval, date & time, button start (fob or app)
Stop Modes	Memory full, never stop (overwrite oldest data), date & time, or after set logging period
Pause	Pause and restart with HOBObconnect app
Alarms	Log high- or low-alarm events; alarm status shown in HOBObconnect app
Battery Indication	Battery status shown in HOBObconnect app (approximate)
Environmental Rating	IP68

NOTES

* Water Level Accuracy: With accurate reference water level measurement, known water density, accurate barometric compensation data, and a stable temperature environment.

** Raw Pressure Accuracy: Absolute pressure sensor accuracy includes all sensor drift, temperature, and hysteresis-induced errors.

*** Changes in Temperature: Allow 10 minutes in water to achieve full temperature compensation of the pressure sensor. Maximum error due to rapid thermal changes is approximately 0.5%.

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