

MX2501

HOBO pH and Temperature Data Logger Bluetooth-enabled logger



A pH and temperature data logger for long-term monitoring of pH in water, leveraging Bluetooth for easy setup and data download.

Important Information

Requires the HOBOconnect app and a compatible mobile device or Windows computer. System requirements for the app can be found at the bottom of our HOBOconnect software page. NOTE: pH electrodes should always be stored in storage solution when not deployed. Get cloud storage and access to the powerful tools of LI-COR Cloud® IoT software! (formerly HOBOLink) Add an MX Data Plan!



Compatible with
HOBOconnect® Monitoring App

Supported Measurements

pH, Water Temperature

Features

- Guided pH calibration following on-screen prompts in HOBOconnect app
- Rugged PVC housing for deployment in both freshwater and saltwater environments
- Quick and easy data offload via Bluetooth to mobile devices or Windows computers
- Water detection system for longer battery life and less maintenance
- Potentiometric pH electrode with plastic body, gel electrolyte, and double cloth junction
- User-replaceable battery, pH electrode, and anti-biofouling copper guard
- Accuracy of ± 0.10 pH units within $\pm 10^\circ\text{C}$ of temperature at calibration

What's in the box

- MX2501 pH and Temperature Data Logger
- pH electrode
- Bottle of storage solution that can also be used as a storage container for the electrode
- Anti-biofouling copper guard
- Tube of silicone grease
- AA battery

HOBO pH and Temperature Data Logger (MX2501) Specifications

pH Sensor

	pH	mV
Range	2.00 to 12.00 pH	-512 to 512 mV
Accuracy	±0.10 pH units within ±10°C of temperature at calibration	±0.20 mV
Resolution	0.01 pH	0.02 mV
Response Time	1 minute typical to 90% at constant temperature in stirred water	
Sample Ionic Strength	≥ 100 µS/cm	

Temperature Sensor

Range	-2° to 50°C (28.4° to 122°F)
Accuracy	±0.2°C (±0.36°F)
Resolution	0.024°C at 25°C (0.04°F at 77°F)
Response Time	7 minutes typical to 90% in stirred water

Logger

Operating Range	-2° to 50°C (28.4° to 122°F) — non-freezing
Depth Rating	IP68; waterproof to 40 m (131 ft)
Water Detection	Water conductivity level of 100 µS/cm or greater is necessary for reliable detection of water. Deionized water or water below 100 µS/cm may not be detected. The water conductivity circuit may not reliably detect water that has frozen around the electrodes, i.e. below 0°C (32°F).
Radio Power	1 mW (0 dBm)
Transmission Range	Approximately 30.5 m (100 ft) line-of-sight in air
Wireless Data Standard	Bluetooth Low Energy (Bluetooth Smart)
Logging Rate	1 second to 18 hours
Logging Modes	Fixed interval (normal, statistics) or burst
Memory Modes	Wrap when full or stop when full
Start Modes	Immediate, push button, date & time, or next interval
Stop Modes	When memory is full, push button, date & time, or after a set logging period
Time Accuracy	±1 minute per month 0° to 50°C (32° to 122°F)
Battery Type	One AA 1.5 Volt, user-replaceable

HOBO pH and Temperature Data Logger (MX2501) Specifications

Logger	
Battery Life	1 year typical at 25°C (77°F) with logging interval of 1 minute and Bluetooth Always On selected in software. 2 years typical at 25°C (77°F) with logging interval of 1 minute and Bluetooth Off Water Detect enabled in software. 3 years typical at 25°C (77°F) with logging interval of 1 minute and Bluetooth Always Off selected in software. Faster logging intervals and statistics sampling intervals, burst logging, remaining connected with the app, excessive downloads, and paging may impact battery life.
pH Electrode Typical Minimum Life	6 months in sample with ionic strength $\geq 100 \mu\text{S/cm}$
Memory	152 KB (43,300 measurements, maximum)
Full Memory Download Time	Approximately 60 seconds; may take longer the farther the mobile device is from the logger
Dimensions	22.86 x 4.27 cm (9.0 x 1.68 inches); mounting hole 0.64 cm (0.25 inches)
Weight	268.2 g (9.46 oz)
Buoyancy	Fresh water: 13.6 g (0.48 oz) negative Salt water: 19.6 g (0.69 oz) negative
Wetted Materials	Logger: PVC housing and sensor end cap, polycarbonate closure caps and mounting end cap with a TPE switch pH electrode: plastic-bodied with Pellon® junctions and gel electrolyte, glass pH sensor bulb



The CE Marking identifies this product as complying with all relevant directives in the European Union (EU).