HOBO® MX2501 Data Logger

Bluetooth Low Energy pH and Temperature Data Logger

The HOBO MX2501 pH and Temperature Data Logger is designed for long-term monitoring of pH in estuaries, lakes, streams, rivers, and oceans. Leveraging Bluetooth Low Energy® (BLE) technology, the MX2501 pH Logger communicates wirelessly with the free HOBOmobile® app on iOS and Android devices making logger setup, calibration, and data offload quick and easy. A guided pH calibration process on the HOBOmobile app makes an otherwise complicated process easier to follow. This affordable and compact logger dramatically cuts the time and effort needed to collect field data, while also offering higher resolution data.

NOTE: pH electrodes should always be stored in storage solution when not deployed.

Supported Measurements:

pH and Water Temperature

Key Advantages:

- Guided pH calibration following on-screen prompts in HOBOmobile app
- Rugged PVC housing for deployment in both freshwater and saltwater environments
- Quick and easy data offload via Bluetooth Low Energy (BLE) to iOS and Android devices
- 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 ±10°C of temperature at calibration

HOBO MX2501 Data Logger 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	

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
Buoyancy	Fresh water: 13.6 g (0.48 oz) negative Salt water: 19.6 g (0.69 oz) negative
Waterproof	To 40 m (131.2 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
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 Life	6 months
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)
Weight	268.2 g (9.46 oz)
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
Environmental Rating	IP68
CE	The CE Marking identifies this product as complying with all relevant directives in the European Union (EU).

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