HOBO® MX2501

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 HOBOconnect app and your mobile device or Windows computer, making logger setup, calibration, and data offload quick and easy. A guided pH calibration process on the HOBOconnect 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.)

You can download the HOBOconnect app here:

Key Advantages:

- 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 Low Energy (BLE) 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 ±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	
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	
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 Typical Minimum Life	6 months in sample with ionic strength ≥ 100 µS/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)
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).
FC	

For more information, visit
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