



## HOBO<sup>®</sup> MX2203 Data Logger

### TidbiT MX Temperature 400' Data Logger

The HOBO MX2203 TidbiT waterproof temperature logger leverages the power of Bluetooth Low Energy (BLE) to deliver high-accuracy temperature measurements straight to your iOS or Android mobile device. Designed for durability, this rugged waterproof logger is ideal for long-term deployments in streams, lakes, and oceans (up to 400-foot depths). Data collection in the field has never been easier!

Remotely access your data in Onset's cloud-based HOBOLink software with the new MX Gateway.

#### Supported Measurements:

Temperature and Water Temperature

#### Key Advantages:

- Convenient wireless setup and download via Bluetooth Low Energy (BLE)
- Large memory stores 96,000 measurements
- Waterproof to 120 meters (400 feet)
- User-replaceable battery
- Waterproof boot protects the logger during deployment
- LED alarm notifies you when temperature exceeds set threshold
- Water detection feature conserves battery life
- Works with Onset's free HOBOMobile app
- $\pm 0.2^{\circ}\text{C}$  ( $\pm 0.36^{\circ}\text{F}$ ) accuracy



## HOBO MX2203 Data Logger Specifications

<b>Temperature Sensor (MX2203)</b>	
<b>Range</b>	MX2203: -20° to 70°C (-4° to 158°F) in air; -20° to 50°C (-4° to 122°F) in water
<b>Accuracy</b>	±0.25°C from -20° to 0°C (±.45°F from -4° to 32°F) ±0.2°C from 0° to 70°C (±0.36°F from 32° to 158°F)
<b>Resolution</b>	0.01°C (0.018°F)
<b>Drift</b>	<0.1°C (0.18°F) per year
<b>Response Time</b>	MX2203: 17 minutes typical to 90% in air moving 1 m/s, unmounted; 7 minutes typical to 90% in stirred water, unmounted
<b>Logger</b>	
<b>Radio Power</b>	1 mW (0 dBm)
<b>Transmission Range</b>	Approximately 30.5 m (100 ft) line-of-sight
<b>Wireless Data Standard</b>	Bluetooth Smart (Bluetooth Low Energy, Bluetooth 4.0)
<b>Logger Operating Range</b>	-20° to 70°C (-4° to 158°F)
<b>Logging Rate</b>	1 second to 18 hours
<b>Buoyancy (Fresh Water)</b>	MX2203: 3.1 g (0.11 oz) negative
<b>Waterproof</b>	MX2203: To 122 m (400 ft)
<b>Water Detection</b>	Water conductivity level of 100 µS/cm or greater 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).
<b>Memory</b>	96,000 measurements
<b>Battery</b>	CR2477 3V lithium, user replaceable in MX2203, non-replaceable in MX2204
<b>Battery Life</b>	3 years, typical at 25°C (77°F) with logging interval of 1 minute and Bluetooth Always On in software. 5 years, typical at 25°C (77°F) with logging interval of 1 minute and Bluetooth Always Off or Bluetooth Off Water Detect in software. Faster logging intervals and statistics sampling intervals, burst logging, remaining connected with the app, excessive downloads, and paging may impact battery life. To ensure proper battery installation, see Battery Information for detailed instructions on replacing the battery in the MX2203 logger.
<b>Time Accuracy</b>	± 1 minute per month at 25°C (77°F)
<b>Full Memory Dowload</b>	Approximately 45 seconds; may take longer the farther the device is from the logger
<b>Wetted Materials</b>	MX2203: Polypropylene case, EPDM O-ring, stainless steel screws, Santoprene® (TPE) boot
<b>Dimensions</b>	MX2203: 4.45 x 7.32 x 3.58 cm (1.75 x 2.88 x 1.41 inches)
<b>Weight</b>	MX2203: 36.2 g (1.28 oz)
<b>Environmental Rating</b>	IP68

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

## Contact Us

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

- ▶ Email [sales@onsetcomp.com](mailto:sales@onsetcomp.com)
- ▶ Call 1-508-759-9500
- ▶ In U.S. toll free 1-800-564-4377
- ▶ Fax 1-508-759-9100

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

- ▶ Contact Product Support [www.onsetcomp.com/support/contact](http://www.onsetcomp.com/support/contact)
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## HOBO<sup>®</sup> MX2204 Data Logger

### TidbiT MX Temperature 5000' Data Logger

The HOBO MX2204 TidbiT waterproof temperature logger leverages the power of Bluetooth Low Energy (BLE) to deliver high-accuracy temperature measurements straight to your iOS or Android mobile device. Designed for durability, this rugged waterproof logger is ideal for long-term deployments in streams, lakes, and oceans. Data collection in the field has never been easier!

Remotely access your data in Onset's cloud-based HOBOLink software with the new MX Gateway.

#### Supported Measurements:

Temperature and Water Temperature

#### Key Advantages:

- Convenient wireless setup and download via Bluetooth Low Energy (BLE)
- Large memory stores 96,000 measurements
- Waterproof to 1500 meters (5000 feet)
- Waterproof boot protects the logger during deployment
- LED alarm notifies you when temperature exceeds set threshold
- Water detection feature conserves battery life
- Works with Onset's free HOBOMobile app
- $\pm 0.2^{\circ}\text{C}$  ( $\pm 0.36^{\circ}\text{F}$ ) accuracy



## HOBO MX2204 Data Logger Specifications

<b>Temperature Sensor (MX2203 and MX2204)</b>	
<b>Range</b>	MX2203: -20° to 70°C (-4° to 158°F) in air; -20° to 50°C (-4° to 122°F) in water MX2204: -20° to 70°C (-4° to 158°F) in air; -20° to 50°C (-4° to 122°F) in water, maximum sustained temperature in water 30°C (86°F)
<b>Accuracy</b>	±0.25°C from -20° to 0°C (±.45°F from -4° to 32°F) ±0.2°C from 0° to 70°C (±0.36°F from 32° to 158°F)
<b>Resolution</b>	0.01°C (0.018°F)
<b>Drift</b>	<0.1°C (0.18°F) per year
<b>Response Time</b>	MX2203: 17 minutes typical to 90% in air moving 1 m/s, unmounted; 7 minutes typical to 90% in stirred water, unmounted MX2204: 15 minutes typical to 90% in air moving 1 m/s, unmounted; 4 minutes typical to 90% in stirred water, unmounted
<b>Logger</b>	
<b>Radio Power</b>	1 mW (0 dBm)
<b>Transmission Range</b>	Approximately 30.5 m (100 ft) line-of-sight
<b>Wireless Data Standard</b>	Bluetooth Smart (Bluetooth Low Energy, Bluetooth 4.0)
<b>Logger Operating Range</b>	-20° to 70°C (-4° to 158°F)
<b>Logging Rate</b>	1 second to 18 hours
<b>Buoyancy (Fresh Water)</b>	MX2203: 3.1 g (0.11 oz) negative MX2204: 7.6 g (0.27 oz) negative
<b>Waterproof</b>	MX2203: To 122 m (400 ft) MX2204: To 1,524 m (5,000 ft)
<b>Water Detection</b>	Water conductivity level of 100 µS/cm or greater 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).
<b>Memory</b>	96,000 measurements
<b>Battery</b>	CR2477 3V lithium, user replaceable in MX2203, non-replaceable in MX2204
<b>Battery Life</b>	3 years, typical at 25°C (77°F) with logging interval of 1 minute and Bluetooth Always On in software. 5 years, typical at 25°C (77°F) with logging interval of 1 minute and Bluetooth Always Off or Bluetooth Off Water Detect in software. Faster logging intervals and statistics sampling intervals, burst logging, remaining connected with the app, excessive downloads, and paging may impact battery life. To ensure proper battery installation, see Battery Information for detailed instructions on replacing the battery in the MX2204 logger.
<b>Time Accuracy</b>	± 1 minute per month at 25°C (77°F)
<b>Full Memory Dowload</b>	Approximately 45 seconds; may take longer the farther the device is from the logger
<b>Wetted Materials</b>	MX2203: Polypropylene case, EPDM O-ring, stainless steel screws, Santoprene® (TPE) boot MX2204: Epoxy case, Santoprene (TPE) boot
<b>Dimensions</b>	MX2203: 4.45 x 7.32 x 3.58 cm (1.75 x 2.88 x 1.41 inches) MX2204: 4.06 x 6.99 x 3.51 cm (1.6 x 2.75 x 1.38 inches)
<b>Weight</b>	MX2203: 36.2 g (1.28 oz) MX2204: 32.8 g (1.16 oz)
<b>Environmental Rating</b>	IP68

The CE Marking identifies this product as complying with all relevant directives in the European Union (EU). This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

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