HOBO® MX2304 Data Logger

MX2304 External Temperature Sensor Data Logger

The HOBO MX2304 is a weatherproof data logger with one external temperature sensor. Leveraging Bluetooth Low Energy, the logger enables easy, fast setup and data download directly from your mobile device, and provides high-accuracy measurements in harsh outdoor environments.

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

Supported Measurements:

Temperature

Key Advantages:

- Convenient wireless setup and download via Bluetooth Low Energy (100-foot range)
- Retrieve data in hard-to-reach locations
- Visual alarms alert you to out-of-range conditions
- Compact, weatherproof housing with built-in mounting
- View current data in real time with Onset's free HOBOmobile app
- Share downloaded data easily from your mobile device
- Accuracy: +/- 0.2C°

HOBO MX2304 Data Logger Specifications

Temperature Sensor	
Range	MX2301 and MX2305 internal sensors: -40 to 70°C (-40 to 158°F) MX2302 external temperature sensor: -40 to 70°C (-40 to 158°F) MX2303 and MX2304 external sensors: -40 to 100°C (-40 to 212°F), with tip and cable immersion in fresh water up to 50°C (122°F) for one year
Accuracy	±0.25°C from -40 to 0°C (±0.45 from -40 to 32°F) ±0.2°C from 0 to 70°C (±0.36 from 32 to 158°F) ±0.25°C from 70 to 100°C (±0.45 from 158 to 212°F), MX2303 and MX2304 only
Resolution	0.04°C (0.072°F)
Drift	<0.01°C (0.018°F) per year

RH Sensor (MX2301, MX2302 only)	
Range	0 to 100% RH, -40° to 70°C (-40° to 158°F); exposure to conditions below -20°C (-4°F) or above 95% RH may temporarily increase the maximum RH sensor error by an additional 1%
Accuracy	±2.5% from 10% to 90% (typical) to a maximum of ±3.5% including hysteresis at 25°C (77°F); below 10% RH and above 90% RH ±5% typical
Resolution	0.05%
Drift	<1% per year typical

Response Time: Temperature (typical, to 90% of change)	Without Solar Radiation Shield	With RS1/M-RSA Solar Radiation Shield	With RS3-B Solar Radiation Shield
MX2301 internal sensor	17 minutes in air moving 1 m/sec	24 minutes in air moving 1 m/sec	N/A
MX2302 external sensor	2 minutes, 30 seconds in air moving 1 m/sec	6 minutes in air moving 1 m/sec	5 minutes in air moving 1 m/sec
MX2303/MX2304 external sensors	3 minutes in air moving 1 m/sec; 20 seconds in stirred water	7 minutes in air moving 1 m/sec	4 minutes in air moving 1 m/sec
MX2305 internal sensor	17 minutes in air moving 1 m/sec	24 minutes in air moving 1 m/sec	N/A

Response Time: RH (typical, to 90% of change)	Without Solar Radiation Shield	With RS1/M-RSA Solar Radiation Shield	With RS3-B Solar Radiation Shield
MX2301 internal sensor	1 minute in air moving 1 m/sec	1 minute in air moving 1 m/sec	N/A
MX2302 external sensor	4 minutes in air moving 1 m/sec	4 minutes in air moving 1 m/sec	4 minutes in air moving 1 m/sec

Logger	
Radio Power	1 mW (0 dBm)
Transmission Range	Approximately 30.5 m (100 ft) line-of-sight
Wireless Data Standard	Bluetooth Smart (Bluetooth Low Energy, Bluetooth 4.0)
Logger Operating Range	-40° to 70°C (-40° to 158°F)
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 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	2/3 AA 3.6 Volt lithium, user replaceable
Battery Life	2 years, typical with logging interval of 1 minute and Power Saving Mode disabled; 5 years, typical with logging interval of 1 minute and Power Saving Mode enabled. Faster logging intervals and statistics sampling intervals, burst logging, remaining connected with the app, excessive downloads, and paging may impact battery life.
Memory	128 KB (84,650 measurements, maximum)
Full Memory Download Time	Approximately 60 seconds; may take longer the further the device is from the logger

Dimensions	Logger housing: 10.8 x 5.08 x 2.24 cm (4.25 x 2.0 x 0.88 in.) External temperature sensor diameter: 0.53 cm (0.21 in.) External temperature/RH sensor diameter: 1.17 cm (0.46 in.) External sensor cable length: 2 m (6.56 ft) Solar radiation shield bracket: 10.8 x 8.3 cm (4.25 X 3.25 in.)
Weight	Logger: 75.5 g (2.66 oz) Solar radiation shield bracket: 20.4 g (0.72 oz)
Materials	Acetal, silicone gasket, stainless steel screws
Environmental Rating	NEMA 6 and IP67

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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