



## HOBO<sup>®</sup> MX2301A Data Logger

### Temperature/RH Data Logger

The HOBO MX2301 is a weatherproof data logger with built-in temperature and relative humidity sensors. Leveraging Bluetooth Low Energy, the logger enables easy, fast setup and data download directly from your mobile device with Onset's free HOBObconnect app. The MX2301 provides high-accuracy measurements in harsh outdoor environments.

Add the MX Gateway for remote access to your data in Onset's cloud-based HOBOLink software.

You can download the HOBObconnect app here:



#### 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 HOBObconnect app
- Share downloaded data easily from your mobile device
- Accuracy: +/- 0.2C° and +/- 2.5% RH

## HOBO MX2301A Data Logger Specifications

<b>Temperature Sensor</b>			
Range	MX2301A and MX2305 internal sensors: -40 to 70°C (-40 to 158°F) MX2302A 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	MX2301A and MX2302A: 0.02°C (0.036°F) MX2303, MX2304, and MX2305: 0.04°C (0.072°F)		
Drift	<0.01°C (0.018°F) per year		
<b>Relative Humidity Sensor* (MX2301A, MX2302A only)</b>			
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	0.01%		
Drift	<1% per year typical		
<b>Response Time (typical, to 90% of change)</b>			
Temperature	Without Solar Radiation Shield	With RS1/M-RSA Solar Radiation Shield	With RS3-B Solar Radiation Shield
MX2301A internal sensor	17 minutes in air moving 1 m/sec	24 minutes in air moving 1 m/sec	NA
MX2302A external sensor	3 minutes, 45 seconds in air moving 1 m/sec	7 minutes, 45 seconds in air moving 1 m/sec	6 minutes, 30 seconds 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	NA
RH	Without Solar Radiation Shield	With RS1/M-RSA Solar Radiation Shield	With RS3-B Solar Radiation Shield
MX2301A internal sensor	30 seconds in air moving 1 m/sec	40 seconds in air moving 1 m/sec	NA
MX2302A external sensor	15 seconds in air moving 1 m/sec	30 seconds in air moving 1 m/sec	30 seconds in air moving 1 m/sec
<b>Logger</b>			
Operating Range	-40° to 70°C (-40° to 158°F)		
Radio Power	1 mW (0 dBm)		
Transmission Range	Approximately 30.5 m (100 ft) line-of-sight		
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 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 Bluetooth Always On enabled; 5 years, typical with logging interval of 1 minute and Bluetooth Always On disabled. Faster logging intervals and statistics sampling intervals, burst logging, remaining connected with the app, excessive downloads, and paging may impact battery life.

**Memory** MX2301A and MX2302A: 128 KB (63,488 measurements, maximum)  
MX2303, MX2304, and MX2305: 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).



\*Per RH sensor manufacturer data sheet

## 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 6pm ET, Monday through Friday)

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