

MX2301A

HOBO Temperature/RH Data Logger

Bluetooth

A weatherproof data logger with built-in temperature and relative humidity sensors, leveraging Bluetooth for easy setup and data download.

Important Information

Requires a compatible mobile device or Windows computer and the HOBObconnect app. System requirements for the app can be found at the bottom of the HOBObconnect software page.



Compatible with
HOBObconnect[®] Monitoring App



Supported Measurements

Dew Point, Relative Humidity, Temperature

Features

Contact Us

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

- Email 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 5pm ET, Monday through Friday)

- Contact Product Support www.onsetcomp.com/support/contact
- Call 1-508-759-9500
- In U.S. toll free 1-877-564-4377

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HOBO Temperature/RH Data Logger (MX2301A) Specifications

Temperature Sensor

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

Relative Humidity Sensor* (MX2301A, MX2302A 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	0.01%
Drift	<1% per year typical

Response Time (typical, to 90% of change)

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

Logger

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

*Per RH sensor manufacturer data sheet

