



## HOBO<sup>®</sup> MX1104-TEMP-06

### Temp/RH/Light/Ext-Temp Kit

The HOBO MX Temp/RH/Light/Ex-Temp Kit makes it easy to monitor four measurements with one versatile logger. The kit includes the HOBO MX1104 logger with integrated sensors for temperature, humidity, and light, plus an external temperature sensor with a 6' cable. This is a great addition to your toolbox for troubleshooting, equipment scheduling, building commissioning, HVAC performance monitoring, and more! The external input provides the flexibility to connect a wide range of sensors, expanding monitoring capabilities.

This self-contained 4-channel logger leverages Bluetooth technology for easy wireless configuration and data offload using Onset's free HOBObconnect app for mobile devices and Windows computers. The 100' wireless range is especially handy when deploying these loggers in hard-to-access locations. And, if used with the MX Gateway, you can access data in Onset's cloud-based HOBOLink software - from anywhere!

You can download the HOBObconnect app here:

#### Key Advantages:

- Bluetooth communication for wireless data offload
- HOBObconnect for logger configuration, data readout, viewing data in graphs, viewing logger status, configuring alarms, and sharing data files
- IP54 splashproof rating for use in harsh industrial environments
- LCD display for convenient viewing of current conditions and alarm notifications
- High accuracy measurements with 16-bit resolution
- External input for use with sensors with analog outputs or Onset's Self-Describing sensors for easy configuration



## HOBO MX1104-TEMP-06 Specifications

### Air/Water/Soil Temperature Probe (SD-TEMP-xx)

|                                |                                                                             |
|--------------------------------|-----------------------------------------------------------------------------|
| Measurement Range              | -40° to 50°C (-40° to 122°F) in water; -40° to 100°C (-40° to 212°F) in air |
| Accuracy                       | ±0.15°C from 0° to 50°C ; see Plot A (0.9 inches) minimum ; see Plot A)     |
| Resolution                     | 0.002° at 25°C (0.003° at 77°F)                                             |
| Drift                          | <0.1°C per year (<0.2°F per year)                                           |
| Response Time in Air           | 2 minutes typical to 90% in air moving 1 m/s (2.2 mph)                      |
| Response Time in Stirred Water | 30 seconds typical to 90%                                                   |
| Operating Range                | Sensor tip and cable immersion in fresh water up to 50°C (122°F) for 1 year |
| Probe Housing                  | Copper-plated sensor tip                                                    |
| Probe Dimensions               | 5.1 x 33 mm (0.2 x 1.3 inches)                                              |
| Cable Length                   | 1.8 m (6 ft)                                                                |

### Temperature Sensor (MX1104)

|            |                                                     |
|------------|-----------------------------------------------------|
| Range      | -20° to 70°C (-4° to 158°F)                         |
| Accuracy   | ±0.20°C from 0° to 50°C (±0.36°F from 32° to 122°F) |
| Resolution | 0.002°C at 25°C (0.004°F at 77°F)                   |
| Drift      | <0.1°C per year (0.18°F per year)                   |

### RH Sensor\* (MX1104)

|            |                                                                                                                                                      |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range      | 0% to 100% at -20° to 70°C (-4° to 158°F); exposure to conditions above 95% 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% and above 90% ±5% typical                       |
| Resolution | 0.01%                                                                                                                                                |
| Drift      | <1% per year typical                                                                                                                                 |

### Response Time (MX1104)

|             |                                                 |
|-------------|-------------------------------------------------|
| Temperature | 11 minutes in air moving 1 m/s (2.2 mph)        |
| RH          | 30 seconds to 90% in airflow of 1 m/s (2.2 mph) |

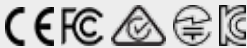
### Light Sensor (MX1104)

|          |                                                                                     |
|----------|-------------------------------------------------------------------------------------|
| Range    | 0 to 167,731 lux (15,582 lum/ft <sup>2</sup> )                                      |
| Accuracy | ±10% typical for direct sunlight (see Light Measurement on page 4 for more details) |

### Logger with Cable Type

|                   | <b>SD-MA-420 or<br/>CABLE-4-20mA</b> | <b>SD-VOLT-2.5 or<br/>CABLE-2.5-STEREO</b> | <b>SD-VOLT-05 or<br/>CABLE-ADAP5</b> | <b>SD-VOLT-10 or<br/>CABLE-ADAP10</b> | <b>SD-VOLT-24 or<br/>CABLE-ADAP24</b> |
|-------------------|--------------------------------------|--------------------------------------------|--------------------------------------|---------------------------------------|---------------------------------------|
| Measurement Range | 0 to 20.1 mA                         | 0 to 2.5 V                                 | 0 to 5.0 V                           | 0 to 10 V                             | 0 to 24 V                             |
| Accuracy          | ±0.001 mA<br>±0.2% of reading        | ±0.1 mV ±0.1% of reading                   | ±0.2 mV<br>±0.3% of reading          | ±0.4 mV ±0.3% of reading              | ±1.0 mV ±0.3% of reading              |
| Resolution        | 0.3 µA                               | 40 µV                                      | 80 µV                                | 160 µV                                | 384 µV                                |

## Logger

|                           |                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Range           | -20° to 70°C (-4° 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                                                                                                                                                                                                                                                                                                                           |
| Restart Mode              | Push button                                                                                                                                                                                                                                                                                                                                                                                         |
| Time Accuracy             | ±1 minute per month at 25°C (77°F)                                                                                                                                                                                                                                                                                                                                                                  |
| Battery Type              | Two AAA 1.5 V alkaline batteries, user replaceable                                                                                                                                                                                                                                                                                                                                                  |
| Battery Life              | 1 year, typical with logging interval of 1 minute and Bluetooth Always On enabled; 2 years, typical with logging interval of 1 minute and Bluetooth Always On disabled; and temperatures between 0° and 50°C (32° and 122°F). Faster logging intervals and statistics sampling intervals, burst logging, remaining connected with the app, excessive downloads, and paging may impact battery life. |
| Memory                    | 4 MB (1.9 million measurements, maximum)                                                                                                                                                                                                                                                                                                                                                            |
| Full Memory Download Time | Approximately 4 to 15 minutes depending on the mobile device; may take longer the further the device is from the logger                                                                                                                                                                                                                                                                             |
| LCD                       | LCD is visible from 0° to 50°C (32° to 122°F); the LCD may react slowly or go blank in temperatures outside this range                                                                                                                                                                                                                                                                              |
| Size                      | 11.28 x 5.41 x 2.92 cm (4.44 x 2.13 x 1.15 in.)                                                                                                                                                                                                                                                                                                                                                     |
| Weight                    | 123 g (4.34 oz)                                                                                                                                                                                                                                                                                                                                                                                     |
| Environmental Rating      | IP54                                                                                                                                                                                                                                                                                                                                                                                                |
| Compliance Marks          |                                                                                                                                                                                                                                                                                                                  |

\*Per RH sensor manufacturer data sheet