

HOBO MX801 Submersible Logger Quick Start Guide

Overview

The HOBO MX801 Submersible Logger is designed to be used with compatible HOBO W-Series sensors to log water parameters such as temperature, conductivity, depth and more.

This logger must be deployed with the sensors attached, as it is not waterproof if sensors are not attached.

If you are using this logger with two sensors, you will need to use the 2-sensor adapter. See the manual that comes with that adapter for attaching the two sensors.

The following is an overview of the steps for configuring and deploying your logger:

1. Connect a Sensor
2. Calibrate the Sensor
3. Configure Your Logger
4. Deploy the Logger
5. Download Your Data
6. Process the Data



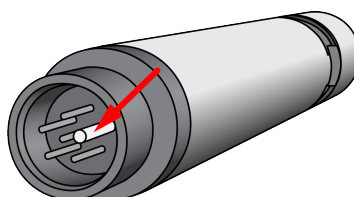
Note: If you are using either a W-CTD or W-CT sensor and it has not been in water, we recommend attaching the sensor to the MX801 logger and soaking the sensor in tap water for 24 hours before performing a conductivity calibration.

Connect a Sensor to the Logger

1. Take the rubber cap off the end of the logger.
2. Connect the sensor to the logger by aligning the alignment pin on the sensor with the hole on the logger connector. Do not force the connection because you do not want to bend any of the pins.

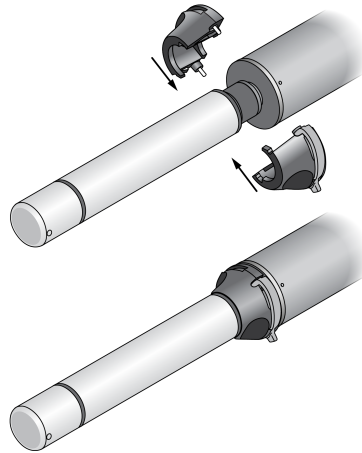


Note: When assembling the logger and the sensor, make sure the o-rings and cable connector surfaces are clear of any debris. Any contamination of these surfaces can cause leaks that lead to logger failure.



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3. Attach the tapered coupler over the connection between the sensor and the logger. To do so, ensure the magnetic fob is attached to one half of the tapered coupler. Snap one side of the coupler over the connection between the sensor and the logger with the tapered end toward the sensor. Slide the other half of the tapered coupler over the connection and press the two parts together; listen for a snap.



4. Tighten the tapered coupler screws with the allen wrench that is included with the logger. You may need to move the magnetic fob out of the way.
5. Insert the magnetic fob into its holding spot on the coupler.

Download and Open HOBObconnect

You need to use HOBObconnect with your HOBO MX Series loggers. To download HOBObconnect go to:

www.onsetcomp.com/products/software/hobobconnect

Calibrate the Sensor

If you are using conductivity, CTD, or DO sensors, calibrate them in your office or lab before configuring the loggers for deployment. The HOBObconnect app guides you through the basic calibration steps. To achieve the best calibration accuracy, refer to the sensor calibration sections in the [HOBO MX800 Series User's Guide](#).

Configure Your Logger

Logging Water Level Requires Barometric Pressure

If you are using the MX801 logger with a CTD sensor to measure water level, you should deploy a barometric pressure logger nearby (within 10 miles) to log barometric pressure changes. You can use a HOBO MX802

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logger or a HOBO MX2001 logger to log barometric pressure. These require a cable and sensor to be attached to make them weatherproof, or use a termination plug (W-PLUG) on the MX802. HOBOnnect uses the barometric pressure data in combination with the CTD pressure data to calculate water level.

Use HOBOnnect to configure the logger you will be using to record barometric pressure:

1. If you are using an MX802 logger, you may need to wake it using the magnetic fob.
2. Configure the Logging Interval and Start Logging setting to be same as what you will be using for the MX801 logger with the CTD sensor. You want this logger to continue until after you have stopped the CTD logger or downloaded its data.
3. Confirm that the Barometric Pressure channel is On.
4. Refer to the [HOBOnnect User's Guide](#) for more detail.

Configure and Start the HOBO MX801 Logger Using HOBOnnect

1. You may need to wake the MX801 logger using the magnetic fob.
2. Configure the Logging Interval and Start Logging settings to be same as what you are using for the barometric pressure logging.
3. Tap Temperature and ensure that this is set to On. If you're recording water level, you also need to have Absolute Pressure set to On. Turn the other measurement channels on or off as desired. If you want to record Specific Conductivity, select that channel and enter the temperature coefficient for the water where the logger will be deployed. This is typically different than the temperature coefficient of the calibration solutions.
4. Refer to the [HOBOnnect User's Guide](#) for more detail.



Note: The logger is able to calculate and log certain parameters without needing to log the basic measurements used to get those parameters. For example you can log salinity without having to log electrical conductivity and temperature. However, it is often a good idea to log the basic measurements in case you need those later.

Deploying Your Logger

1. Deploy the MX801 logger in water at the site. Refer to the [HOBO MX800 Series User's Guide](#) for mounting recommendations.
2. If you are logging water level, deploy your barometric pressure logger.
3. Allow the MX801 logger time to reach temperature equilibrium and take a reference water level reading. Record this along with the time it was taken in your deployment notes. You will need this reference water level reading when you post-process the data in HOBOnnect.

Download the Data

1. At the end of the deployment, we recommend taking measurements of any critical water parameters, and making notes of these values and the time they were taken. These could be useful later for data

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validation and data correction if necessary.

2. Pull up the logger from its deployment location.
3. In HOBObconnect, tap the MX801 tile and download data.
4. If you are redeploying the logger, clean the sensor if needed, before you deploy it again.
5. If you have also deployed a logger to record barometric pressure, download that data now using the same device for downloading data from both loggers. Process the data after you are done.

Processing Your Data

1. Select the Data tab.
2. Open the MX801 data file that you just downloaded.

To derive water level, follow steps 3-9.

3. Click the Reference Water Level icon. The Water Level Assistant opens.
4. Select one of the Water Densities that are listed or enter one manually.
5. Select the Use Reference Water Level check box.
6. Enter the Reference Water Level that you recorded earlier when you deployed the logger.
7. Select the date and time closest to the time you took the Reference Water Level measurement.
8. Select the file you are using with the barometric pressure data (or enter a fixed pressure).
9. Once you have entered the information on the screen, click Proceed. HOBObconnect will calculate the water level data channel. To save this water level data and the barometric pressure data used, you must export the data file.

You can choose to export and share the file. Share is available only on the mobile app.

You can process your dissolved oxygen (DO) data with data from a nearby conductivity logger to get salinity-adjusted DO or get DO in percent saturation using barometric pressure data from a nearby logger. For more information, refer to the [HOBO MX800 Series User's Guide](#).