HOBOmobile™ User's Guide

Onset Computer Corporation
470 MacArthur Blvd.
Bourne, MA 02532

www.onsetcomp.com

Mailing Address:
P.O. Box 3450
Pocasset, MA 02559-3450

Phone: 1-800-LOGGERS (1-800-564-4377) or 508-759-9500
Fax: 508-759-9100
Email: loggerhelp@onsetcomp.com

Technical Support Hours: 8AM to 8PM ET, Monday through Friday
Customer Service Hours: 8AM to 5PM ET, Monday through Friday

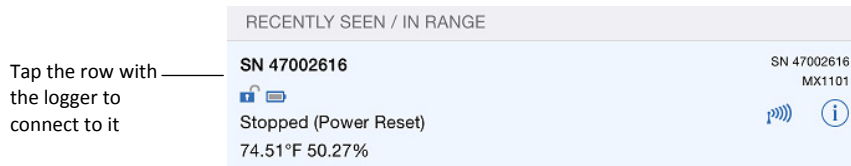# Contents

Chapter 1
Getting Started

HOBOmobile is software for iOS devices and designed for Bluetooth Smart-enabled HOBO MX series loggers. For specifications and detailed information about your logger, refer to the logger manual at www.onsetcomp.com/HOBOmobile.

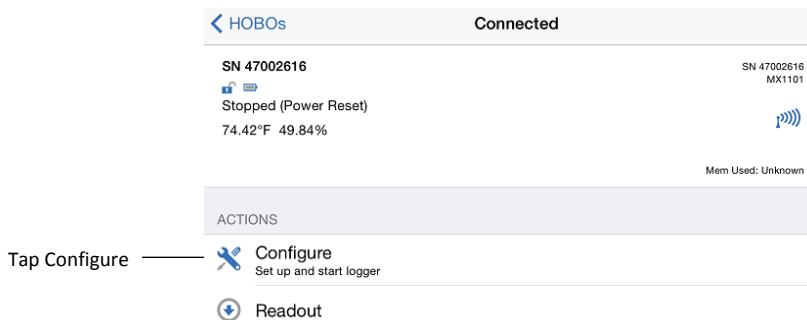To get started with HOBOmobile:

1. Download HOBOmobile to your phone or tablet.

2. Install the batteries in the logger. Open the battery door on the back of the logger and insert two AAA batteries, observing polarity. Reinsert the battery door and snap it back into place.

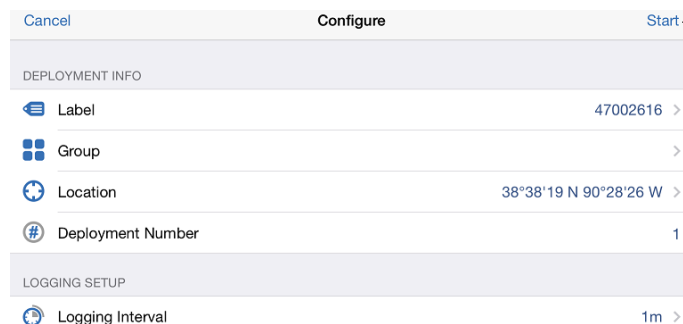3. Open HOBOmobile. Enable Bluetooth® in your device settings if prompted.

4. In HOBOmobile, tap HOBOs. The logger should appear in the list of Recently Seen/In Range devices as shown below. If the logger does not appear, make sure it is within range of your phone or tablet.

5. Tap the row in the Recently Seen/In Range list to connect to the logger.

Tap the row with the logger to connect to it

RECENTLY SEEN / IN RANGE

SN 47002616
SN 47002616
MX1101
Stopped (Power Reset)
74.51°F 50.27%

6. Once connected, tap Configure to set up and start the logger.

‹ HOBOs   Connected

SN 47002616
SN 47002616
MX1101
Stopped (Power Reset)
74.42°F 49.84%

Mem Used: Unknown

ACTIONS

Tap Configure — Configure
Set up and start logger

Readout

7. Make your selections and then tap Start in the upper right corner of the Configure screen. The logger will begin logging based on the settings you selected (see Chapter 2 for details on settings).

Cancel   Configure   Start — Tap Start after you select the logger configuration settings

DEPLOYMENT INFO

Label   47002616 ›

Group   ›

Location   38°38'19 N 90°28'26 W ›

Deployment Number   1

LOGGING SETUP

Logging Interval   1m ›

8. To offload data from the logger to your phone or tablet, connect to it as described in steps 4 and 5 then tap Readout.

Tap Readout ———
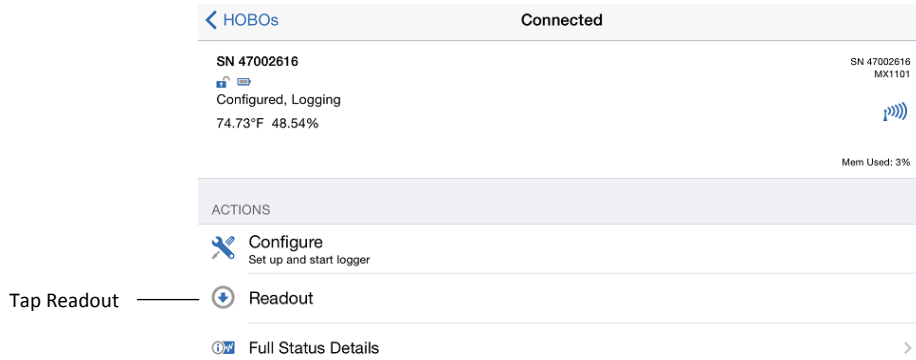
The data from the logger is saved to your phone or tablet. Tap Data Files and then tap a mini-graph to view a larger version of the graph or to share the file.

All the features within HOBOmobile are accessed through the four icons at the bottom of the screen.

Tap this icon:	Do to this:
HOBOs	View loggers within range of your phone or tablet. Connect to a logger to configure it, check the status, read out data, and more. See Chapter 2 for details.
Data Files	View logger readouts in a graph and share the data files with others. See Chapter 3 for details.
Settings	Change the app settings, including the unit type, time zone, and time-saving options. See Chapter 4 for details.
About	Get help with the app and view contact information if you have additional questions. See Chapter 4 for details.

Chapter 2
Working with Loggers

Tap the HOBOs icon to view a list of the loggers currently in communication range of your phone or tablet as well as any other loggers that had been in range within the last day. You can also search for a specific logger, find loggers within groups, or connect to any logger within range to configure it, read out data, check the status, and more.

Viewing Loggers within Range

HOBOmobile uses Bluetooth Smart to communicate with all loggers within broadcast range of your phone or tablet (refer to the logger manual for range specifications). These loggers are displayed in the Recently Seen/In Range list. Loggers that were previously within range of your phone or tablet within the last day, but are currently out of range are shown in the Others Seen in Last Day list. Swipe the screen up and down to view all loggers in both lists; pull the screen down to refresh the lists. You can also use the search tool to find a specific logger. Tap the Search field, select a search category, and then type the label, serial number (SN), or group name for the logger. **Note:** If "Show Only My Devices" is enabled in Settings, then only those loggers that your phone or tablet has connected to will be displayed in this list. Disable this setting if you want to show all loggers within range of your phone or tablet.

Tap Edit to delete a logger or group (see next page for details)

View the list of loggers within range of your phone or tablet

Tap the Search field to find a logger by its label, serial number, or group name

View the list of loggers that were in range within the past day, but are currently out of range

View loggers categorized into groups; tap a group name to view the loggers within that group (see next page for details)

Loggers are also categorized into groups to help you identify them. The default groups are:
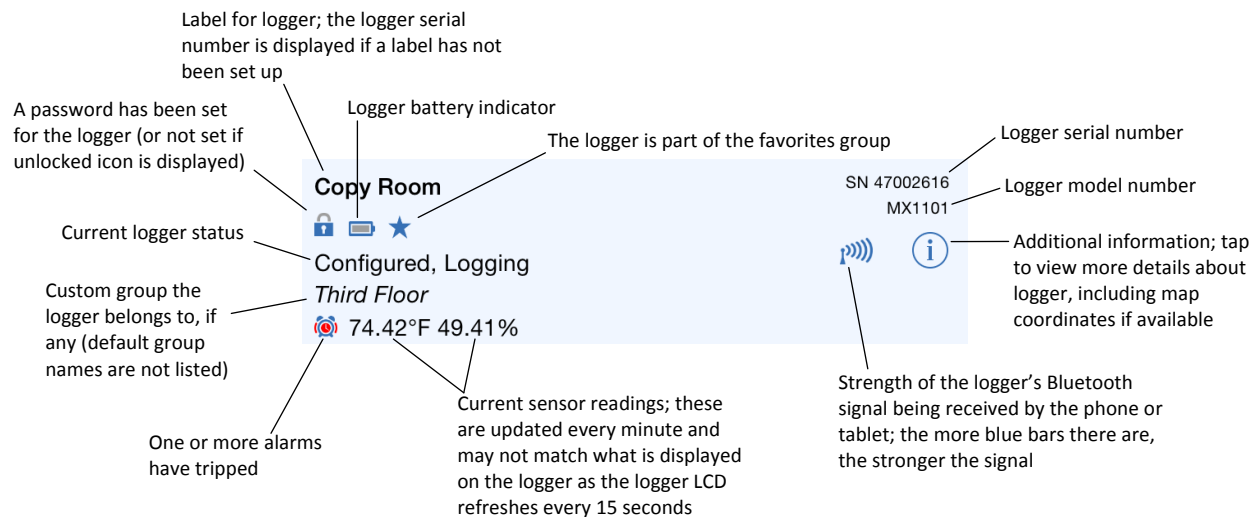
- **Favorites.** Loggers that you have tagged as favorite (see *Configuring a Logger* in this chapter for details on adding a logger to the Favorites group).

- **Ungrouped.** Loggers that have been in range of your phone or tablet within the past day, but have not been added to a custom group. See *Configuring a Logger* for details on creating a group and adding a logger to a group.

- **All.** All loggers that have been within range of your phone or tablet either today or within the past day.

Swipe to the bottom of the HOBOs screen to view the list of groups and then tap a group name to see which loggers are included in that group. Data files that are read out from the logger are also categorized within the same groups (see Chapter 3 for more details).

Tap Edit in the upper right corner to remove a row from any of the lists within the HOBOs screen. Select the row(s) you wish to remove from the view and then tap Delete at the bottom of the screen. This does not permanently delete the logger or group; it only temporarily removes the logger or group from the list. If the logger remains in range after deleting it from view or it returns within range at a future point, it will be added to the list again. Use the Show Only My Devices option in Settings to hide loggers that you are not connecting to with your mobile device.

Checking Logger Information

The following key information about each logger is shown in the HOBOs screen. To check full status details for a logger such as how much memory has been used or the settings used to configure the logger, you must connect to it as described in the next section. **Note:** Current sensor readings are displayed in the HOBOs screen even if the logger is not logging.

Label for logger; the logger serial number is displayed if a label has not been set up

A password has been set for the logger (or not set if unlocked icon is displayed)

Logger battery indicator

The logger is part of the favorites group

Logger serial number

Copy Room

SN 47002616
MX1101

Logger model number

Current logger status

Configured, Logging
Third Floor
74.42°F 49.41%

Additional information; tap to view more details about logger, including map coordinates if available

Custom group the logger belongs to, if any (default group names are not listed)

Strength of the logger's Bluetooth signal being received by the phone or tablet; the more blue bars there are, the stronger the signal

One or more alarms have tripped

Current sensor readings; these are updated every minute and may not match what is displayed on the logger as the logger LCD refreshes every 15 seconds

Connecting to a Logger

A logger must be within range of the phone or tablet to connect to it (refer to the logger manual for range specifications). Tips for connecting to the logger:

- Make sure Bluetooth is enabled for your device.

- Check the signal strength icon as shown in the previous section to see if the logger is within range of the phone or tablet and move closer if necessary. Only one or two blue bars indicates the Bluetooth signal is weak while indicates that a signal is no longer found (all details for that logger will also be gray). **Note:** You can pull down the Recently Seen/In Range list to refresh the loggers shown in the HOBOs screen. This will move any grayed devices to the Others Seen in Last Day list and help you identify which loggers are within range.

To connect to a logger:

1. Tap **HOBOs**.

2. Find the logger you want the device to connect to in the Recently Seen/In Range list or in the groups listed at the bottom of the HOBOs screen. You can also search for a specific logger with the Search field.

3. Tap the row in the Recently Seen/In Range list, in the Search Results on the HOBOs screen, or within a group to connect to a specific logger.

Once connected, additional details about the logger are displayed at the top of the Connected screen, including its logging status and memory used (if applicable). **Note:** The logging status shown in this screen can show more detail than the status displayed in the Recently Seen/In Range list. While both screens can show a status of configured, logging, stopped, stopped due to a power reset, or awaiting a delayed or button start, the logging status in the Connected screen can also indicate whether the logger memory has wrapped, is awaiting a button restart, or is full.
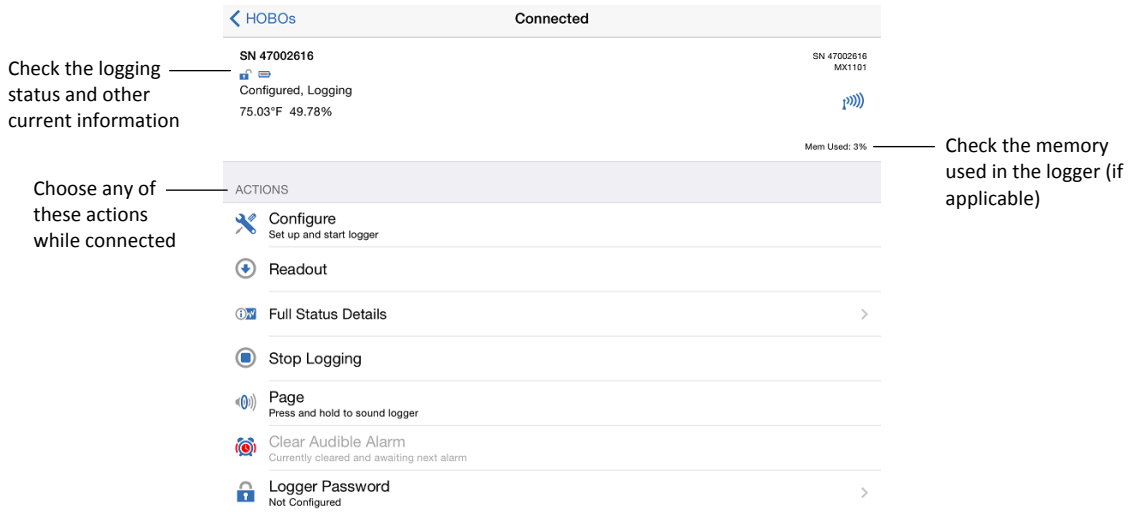
You can perform the following actions while the logger is connected to your phone or tablet.

Icon	Action	Description
	Configure	Tap Configure to set up the logger and start logging. See the next section *Configuring a Logger* for details.
	Readout	Tap Readout to offload logged data from the logger to your phone or tablet. Once the readout is complete, tap Data Files at the bottom of the screen to view the graph and share the data (see Chapter 3 for details).
	Full Status Details	Tap Full Status Details to view the configuration settings currently selected for the logger, including the logging interval, any alarm settings, and logging mode. See *Checking Logger Status* later in this chapter for details.
	Start Logging or Restart Logging	These options will appear depending on the Start and Stop Logging settings selected as described in the next section. If the logger was configured to start logging On Button Push, then you can either tap Start Logging or press and hold the Start/Stop button on the logger for 3 seconds. Start Logging may also be disabled when the logger is awaiting a start at a specific date and time or interval or if the logger was stopped.

Restart Logging may appear if the logger was configured to stop logging On Button Push and to "Allow Button Restart." Tap Restart Logging or press and hold the Start/Stop button on the logger for 3 seconds to resume logging. |
| | Stop Logging | Tap Stop Logging to force the logger to stop recording data. This will override any stop logging settings that may have been configured for the logger. |

Icon	Action	Description
	Page	Use Page to locate the logger. Tap Page and the logger will beep one time. Press and hold Page and the logger will continue beeping.
	Clear Audible Alarm	If the Audible Alarms setting has been enabled (described later in this chapter), Clear Audible Alarm is added to the list of available actions. If an audible alarm has sounded and is waiting to be cleared, tap Clear Audible Alarm to stop the beeping on the logger. If an audible alarm is not currently tripped or sounding, then this option is disabled in the Actions list.
	Logger Password	Tap Logger Password to create a password for the logger that will be required if another phone or tablet running HOBOmobile attempts to connect to it. This is recommended to ensure that a deployed logger is not mistakenly stopped or purposely altered by others. Type a password up to 10 characters, and tap Done. Only the phone or tablet used to set the password can then connect to the logger without entering a password; all other mobile devices will be required to enter the password. For example, if you set the password for the logger with your iPad and then try to connect to the device later with your iPhone, you will be required to enter the password on the iPhone but not with your iPad. Similarly, if someone else attempts to connect to the logger with a different iPad, then they would also be required to enter the password. To reset a password, simultaneously press both the Start/Stop button and the Alarm/Stats button on the top of the logger for 3 seconds or tap Reset to Factory Default on the Set Logger Password screen.
	Update Firmware	If new logger firmware is available for the logger, Update Firmware is added to list of available actions. Tap Update Firmware and follow the onscreen instructions. Note that if there is a communication failure during the firmware update process, the logger will revert to the previous firmware.
		Important: Before updating the firmware on the logger, always read out the logger first. Check the remaining battery level by selecting Full Status Details and make sure it is no less than 30%. Make sure you have the time to complete the entire update, which requires that your device remains within range of the logger during the update process. Do not switch to another app, turn off Bluetooth, or disturb the logger while the update is underway.
	Force Offload	If there is a problem when loading configure settings, Force Offload is added to the list of available actions. A message will also appear above the actions indicating that an error was found in logger configuration. It is recommended that you tap Force Offload any time it appears in the list to ensure you have saved all data currently stored in the logger. Note that "Data Error" will be displayed on the Data Files screen above any graphs that resulted from a Force Offload action. To correct a logger that has encountered an error, repeat the configuration steps described in the next section.

Configuring a Logger

When your phone or tablet is connected to a logger, you can configure the logger with your desired logging settings, including the logging interval, when to start and stop logging, which sensors should record data, sensor alarm limits, and the logging mode.

To configure a logger:

1. Tap **HOBOs**. Find the logger you wish to configure and tap it to connect to it.

2. Tap Configure on the Connected screen.

3. From the Configure screen, you can view the currently selected options and change them for the next logger deployment. Tap an option (described in the table in this section), make any changes as desired, and tap Done.

4. When you are finished making selections in the Configure screen, tap Start in the upper right corner.
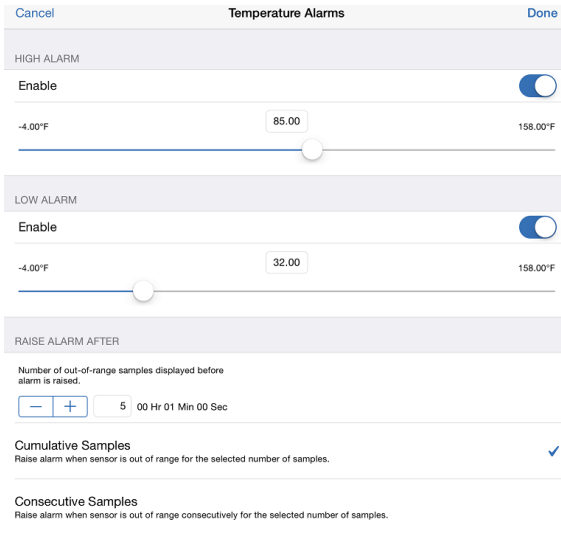
Cancel   Configure   Start

DEPLOYMENT INFO

Label   47002616 >

Group   >

Location   38°38'19 N 90°28'26 W >

Deployment Number   1

LOGGING SETUP

Logging Interval   1m >

Tap Start to begin
logging based on
your settings

Important: If the connection is lost between the logger and your phone or tablet before tapping Start, you will need to reconnect and reconfigure the logger. Configure settings are not loaded onto the logger until you tap Start.

The following settings are available when configuring a logger. **Note:** There are time-saving options available for configuring the logger; go to Settings to change these options. When Previous Configuration is selected as one of the time-saving options, this will be noted at the bottom of the Configure screen.

Icon	Setting	Description
	Label	The default label for the logger is the serial number, but you can change this to better identify the logger in the HOBOs screen. The label is also used for the data file name and the graph title. To change the label, tap Label, type a label name up to 20 characters, and then tap Done.
	Group	Loggers can be sorted into groups to help identify them and their resulting data files. For example, if you have loggers deployed on three floors of a building, you can create a group for each of the three floors and then add each of the loggers to the appropriate group. Tap Group and then: • Tap Add to Favorites to add the logger to the Favorites group. • Tap Create New Group, type a group name up to 20 characters, and then tap Done. The logger is automatically added to the new group. **Note:** When you add a logger to a custom group, it is removed from the default Ungrouped category. • Tap an existing group name to add or remove the logger from that group. • Swipe a group name and then tap Delete to delete the group. Any loggers and data files previously assigned to the deleted group will be added to the Ungrouped category.
	Location	This displays the map coordinates for the mobile device. Tap the coordinates to view the location on the map (if Location services are enabled on your device and enabled for HOBOmobile under Settings > Privacy > Location Services). The location is detected automatically and cannot be changed.
	Deployment Number	This is how many times the logger has been deployed, or configured. A new deployment begins when you tap Start and the settings from the Configure screen are loaded onto the logger.
	Logging Interval	This is how often the logger will record data unless operating in burst logging mode (described later in this section). Tap Logging Interval and then choose a rate from 1 second to 18 hours keeping in mind that the faster the logging interval, the greater the impact on battery life and the shorter the logging duration. Tap Done.
	Logging Duration	This is the approximate time it will take to fill the logger memory based on the logging interval, logging mode, and sensors currently selected. This is an estimate only; battery life and other factors, such as the number of readouts performed, audible alarms, and paging, will also affect the deployment.
	Start Logging	This controls when logging will begin. Tap Start Logging, choose one of the following, and then tap Done:

Icon	Setting	Description
		• **Now**. Logging will begin immediately after tapping Start in the Configure screen.
		• **On Next Logging Interval.** Logging will begin at the next even interval as determined by the selected logging interval. This is useful if you want the logger to start and then subsequently log data on an even minute.
		• **On Button Push.** Logging will begin once you press the Start/Stop logging button on the logger for 3 seconds or tap Start Logging within HOBOmobile.
		• **On Date/Time.** Logging will begin on the date and time you specify. Select the date and time and tap Done.

Stop Logging

This controls when logging should end. To set the Stop Logging options:

1. Tap Stop Logging.

2. Choose one of two memory options for stop logging:

   • **When Memory Fills.** The logger will continue recording data until the memory is full.

   • **Never (Wrap When Full).** The logger will continue recording data indefinitely, with newest data overwriting the oldest. This option is not available if the logging mode is set to Burst (described later in this section).

3. Select On Button Push if you want to be able to stop logging by pushing the Start/Stop button on the logger for 3 seconds. Note that if you also select On Button Push for the Start Logging setting, then you will not be able to stop logging with the Start/Stop button until 30 seconds after logging begins.

   If you select the On Button Push setting for Stop Logging, then you also have the option to select Allow Button Restart. This allows you to stop and then restart logging during the deployment by pushing the Start/Stop button on the logger for 3 seconds.

   > **Important:** When Allow Button Restart is selected and you use the Start/Stop button, logging will restart on the next even logging interval. For example, a logger started logging at 7:00 AM with a logging interval set to 1 hour. If you press the Start/Stop button to stop the logger at 8:45 AM and then press the button again at 10:15 AM, logging will not begin immediately at 10:15 AM. Instead, logging will begin again at 11:00 AM, which is the next even interval time based on your 1-hour logging interval. Therefore, depending on the logging interval, the gap between the time you press the button to resume logging and the time actual logging begins could be significant. The faster the logging interval, the less time will elapse before logging resumes.

4. Select one of the following time options for when to stop logging:

   • **Never.** Select this if you do not want the logger to stop at any predetermined time frame.

   • **On Date/Time.** Select this if you want the logger to stop logging on a specific date and time. Select the date and time and then tap Done.

   • **After.** Select this if you want to control how long the logger should continue logging once it starts. Choose the amount of time you want the logger to log data and then tap Done. For example, select 30 days if you want the logger to log data for 30 days after logging begins.

   Note: Regardless of the options you select for Stop Logging, you can stop the logger at any time by connecting to it and then selecting Stop Logging from the Connected screen. This will override all Stop Logging settings set up from the Configure screen.

5. Tap Done.

Sensor & Alarm Setup

Select the sensors that will be logged. By default, all sensors are enabled. Even if only one sensor is enabled, HOBOmobile will display current readings for all sensors. **Note:** If Temperature and RH measurements are being logged, then a dew point series will also be calculated and available in the data file upon readout.

You can also set alarms to trip on enabled sensors when a sensor reading rises above or falls below a specified value. To set up a sensor alarm:

1. Tap an enabled sensor.

Icon	Setting	Description

2. Enable the High Alarm if you want an alarm to trip when the sensor reading rises above the high alarm value. Drag the slider to the reading that will trip the alarm or tap the value field and type a specific reading. In the example on the next page, an alarm will trip when the temperature rises above 85°F.

3. Enable the Low Alarm if you want an alarm to trip when the sensor reading falls below the low alarm value. Drag the slider to the reading that will trip the alarm or tap the value field and type a specific reading. In the example on the next page, an alarm is configured to trip when the temperature falls below 32°F.

Note: The actual values for the high and low alarm limits are set to the closest value supported by the logger.

4. Under Raise Alarm After, select how many out-of-range samples are needed to trigger the alarm. For example, if Raise Alarm After is set to 5 as shown above, then there needs to be 5 sensor readings above 85°F or below 32°F before the alarm will trip. The time displayed next to the sample number indicates how long it would take for the alarm to trip based on the number of samples you entered and the fixed 15-second LCD refresh interval.

5. Select either Cumulative Samples or Consecutive Samples. If you select Cumulative Samples, then the alarm will trip after a specific number of samples are outside the limits at any point during deployment. If you select Consecutive Samples, then the alarm will trip after a specific number of samples outside the limits are displayed on the LCD in a row. For example, if there are 5 readings in a row above 85°F, then an alarm will trip. However, if Cumulative Samples was selected instead, then the 5 readings could have taken place at any time during the deployment for the alarm to trip.

6. Tap Done. Repeat the steps for another sensor if desired.

Alarm limits are checked when the logger's LCD screen refreshes every 15 seconds. The alarm icon will be illuminated on the logger LCD when the alarm trips. You can also press the Alarms/Stats button on the logger to view the value that triggered the alarm. The LCD displays the farthest out-of-range sample during the deployment.

Icon	Setting	Description
	Audible Alarms	This controls whether an audible alarm beeps on the logger when a sensor alarm trips (available only if a sensor alarm has been configured). If you enable this setting, then the logger will beep once every 30 seconds when an alarm trips until one of the following happens (whichever occurs first):

- The alarm is cleared from HOBOmobile (connect to the logger and then tap Clear Audible Alarm).

- Either button on the top of the logger is pressed.

Icon	Setting	Description

- Seven days have passed.

Once cleared, an audible alarm will start beeping again if the sensor values go out of the normal range. Even if an audible alarm is cleared, a visual alarm may remain on the logger LCD and in HOBOmobile depending on the settings selected for maintaining visual alarms or because the alarm condition may still be in effect. In addition, an audible alarm will continue beeping when the sensor values have returned to the normal range until it is cleared as described above.

It is recommended that you only enable this feature if you have regular access to the logger so that you can easily turn off the beeping. Note that battery life will be slightly reduced each time the audible alarm sounds.

Icon	Setting	Description
	Maintain Visual Alarms Until	If a sensor alarm is configured, select one of the following options to determine how long the alarm icon will remain illuminated on the logger LCD screen after an alarm trips:

- **Logger Reconfigured.** The alarm icon will remain visible on the LCD until the next time the logger is reconfigured (by connecting to a logger, tapping Configure, selecting settings, and tapping Start).
- **Sensor in Limits.** The alarm icon will remain visible on the LCD until the sensor reading returns to the normal range between any configured high and low alarm limits.
- **Alarm Button Pressed.** The alarm icon will remain visible until you press the Alarm/Stats button on the logger.

Note: Although an audible alarm and a visual alarm can occur at the same time when a sensor alarm is tripped, they are cleared in different ways. The audible alarm can be cleared as described on the previous page. Meanwhile, a visual alarm is cleared as determined by the three settings above. You may clear a beeping audible alarm, but the visual alarm remains on the LCD and in HOBOmobile until the logger is reconfigured, the sensor is in limits, or the alarm button is pressed--whichever setting you selected. If the logger was configured to stop logging with a button push, any tripped alarms will be cleared automatically when logging is stopped and no Alarm Cleared event will be logged in the data file. This ensures that the logger will start checking for alarm conditions when logging resumes (if the logger was configured with Allow Button Restart selected).

Icon	Setting	Description
	Logging Mode	There are two logging modes:

- **Fixed Interval Logging.** The logger records data for enabled sensors and/or selected statistics at the logging interval selected. (Statistics are calculated at a sampling rate you specify with the results recorded at each logging interval.)
- **Burst Logging.** The logger records data for enabled sensors at the normal logging interval until the readings rise above or fall below specific limits, at which time the logger switches to a faster burst logging rate until the readings return to normal (burst limits are checked every 15 seconds, which is the rate the logger LCD refreshes). For example, the logger is configured with a logging interval of 5 minutes and burst logging is configured to log every 30 seconds when the temperature rises above 85°F (the high limit) or falls below 32°F (the low limit). This means the logger will record data every 5 minutes as long as the temperature remains between 32°F and 85°F. Once the temperature rises above 85°F, for example, the logger will switch to the faster logging rate and record data every 30 seconds until the temperature falls back to 85°F. At that time, logging then resumes every minute at the normal logging interval. Similarly, if the temperature falls below 32°F, for example, then the logger would switch to burst logging mode again and record data every 30 seconds. Once the temperature rises back to 32°F, the logger will then return to normal mode, logging every 5 minutes. **Note:** Sensor alarms, statistics, and the Stop Logging option Wrap When Full are not available in burst logging mode.

To configure a logging mode, tap Logging Mode and select Fixed Interval Logging or Burst Logging, any applicable settings as described below, and then tap Done.

If you select Fixed Interval Logging:

1. Select Normal to record the current reading for each enabled sensor at the logging interval shown at the top of the screen. Do not select this if you *only* want to log

Icon	Setting	Description

statistics.

2. Select the statistics you want the logger to record at each logging interval:

- Maximum, the highest value from the sampling period (as determined by the statistics sampling interval).

- Minimum, the lowest value from the sampling period (as determined by the statistics sampling interval).

- Average, the mean of all values from during the sampling period (as determined by the statistics sampling interval).

- Standard deviation from the average for all sampled values (requires average).

  Note that the selected statistics will be logged for all enabled sensors.

3. Tap Statistics Sampling Interval and select the rate to use for calculating statistics. The rate must be less than, and a factor of, the logging interval. For example, if the logging interval is 1 minute and you select 5 seconds for the sampling rate, then the logger will take 12 sample readings between each logging interval (one sample every 5 seconds for a minute) and use the 12 samples to record the resulting statistics at each 1-minute logging interval. Note that the more frequent the sampling rate, the greater the impact on battery life.

4. Tap Done.

5. Tap Done again to return to the Configure screen. Once the logger is logging, you can press the Alarm/Stats button on the logger to cycle through the current reading and statistics, if applicable. (The logger will always display the current sensor readings in HOBOmobile even if they are not being logged.)

 If you select Burst Logging:

1. Tap a sensor under Burst Sensor Limits.

2. Enable High Limit if you want burst logging to occur when the sensor reading rises above a specific reading. Drag the slider to the reading that will trigger burst logging or tap the value field and type a specific reading. In this example, the logger will switch to burst logging when the temperature rises above 85°F.

3. Enable Low Limit if you want burst logging to occur when the sensor reading falls below a specific reading. Drag the slider to the reading that will trigger burst logging or tap the value field and type a specific reading. In this example, the logger will switch to burst logging when the temperature falls below 32°F.

   Note: The actual values for the high and low burst limits are set to the closest value supported by the logger.

4. Tap Done.

5. Repeat steps 1–4 for another sensor if desired.

Icon	Setting	Description
		6. Tap Burst Logging Interval.
		7. Select an interval faster than the logging interval and then tap Done.
		8. Tap Done to exit the Logging Mode screen.
		Notes:
		• Once the logger is configured, the high and low burst logging limits are only checked when the logger's LCD screen refreshes once every 15 seconds. Therefore, if you set the logging interval to less than 15 seconds and the sensor reading falls outside the limits, the burst logging will not begin until the next 15-second refresh cycle.
		• Once the high or low condition clears, the logging interval time will be calculated using the last recorded data point in burst logging mode, not the last data point recorded in normal mode. For example, a logger has a 10-minute logging interval and logged a data point at 9:05. Then, the high level was surpassed and burst logging began at 9:06. Burst logging then continued until 9:12 when the sensor reading fell back below the high level. Now back in normal mode, the next logging interval will be 10 minutes from the last burst logging point, or 9:22 in this case. If burst logging had not occurred, the next data point would have been at 9:15.
		• If the logger is stopped with a button push while in burst logging mode, then a New Interval event is automatically logged and the burst condition is cleared, even if the actual high or low condition has not cleared. The logger will check the high and low conditions when logging resumes (if the logger was configured with Allow Button Restart selected).
	Show LCD	This setting controls whether the LCD on the logger will remain illuminated while the logger is logging. If you disable Show LCD, the LCD on the logger will not show the current reading, status, or other information while the logger is logging. If this setting is enabled, you can still temporarily turn the LCD screen on by pressing the Start/Stop button on the logger for 1 second. The LCD will then remain on for 10 minutes. In addition, you can always view the status of any in-range logger on your phone or tablet regardless of the logger's LCD setting.

Checking Logger Status

You can view the current sensor readings and other basic information about the logger in the HOBOs screen as described under Checking Logger Information earlier in this chapter. To get more detailed status information, connect to a logger and tap Full Status Details. You can then view the following information in the Status Details screen:

- **Configuration Information.** Tap Current Configuration to see the settings selected when the logger was last configured, including Logging Interval, Start Logging and Stop Logging settings, Logging Mode, and any Alarm Limits or Burst Logging Limits as applicable. (When finished viewing the configuration information, tap Status Details at the top left of the Current Configuration screen to return to the Status Details screen.)

- **Current Readings.** These are the current sensor readings. Note that even if sensor data is not being logged, the current readings are still displayed.

- **Device Identification.** This information includes the logger model, serial number, and firmware version.

- **Device Details.** This shows the current battery level, the percentage of memory used (if applicable), and the current status of the logger (e.g. Configured, Logging or Stopped).

Tap Connected at the top left of the Status Details screen to return to the Connected screen when done. You can also check logger status on the logger LCD, which refreshes every 15 seconds. If the LCD has been disabled, press the Start/Stop button on the logger for 1 second to temporarily turn on the LCD. Note that the logger LCD displays current readings for enabled sensors only while HOBOmobile displays readings for all sensors regardless of whether data is being logged.

Chapter 3
Working with Data Files

Data Files

Tap the Data Files icon to view data that has been read out from the logger in a graph. You can see details about a data file, including the settings used to configure the logger, view logged data points, and share the file in multiple formats for analysis in other software.

Reading Out the Logger and Finding Data Files
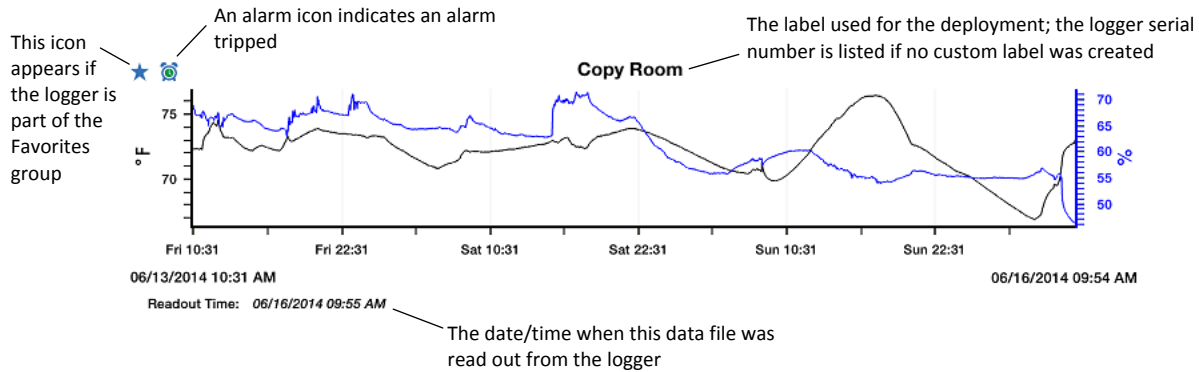
Logger data files are created by reading out, or offloading, the data recorded by the logger to your phone or tablet. To read out the logger:

1. Tap **HOBOs** and select a logger to connect to it.

2. From the Connected screen, tap Readout. The data from the logger is offloaded to your device. A message displays when the readout is complete and a number appears on the **Data Files** icon indicating a new file is available for viewing.

3. Tap **Data Files**. The data that was read out from the logger is displayed in a mini-graph in the Recent Data Files list. The 10 most recent data files are shown in this list and the data file with the most recent readout time is at the top. Data files can also be sorted by groups. Tap a group name to view a list of the data files associated with the loggers in that group. Tap All to see all data files available. You can also search for a specific data file. Tap the Search field, select a search category, and then type the label, serial number, or group name for the logger that has the data file you want to find.
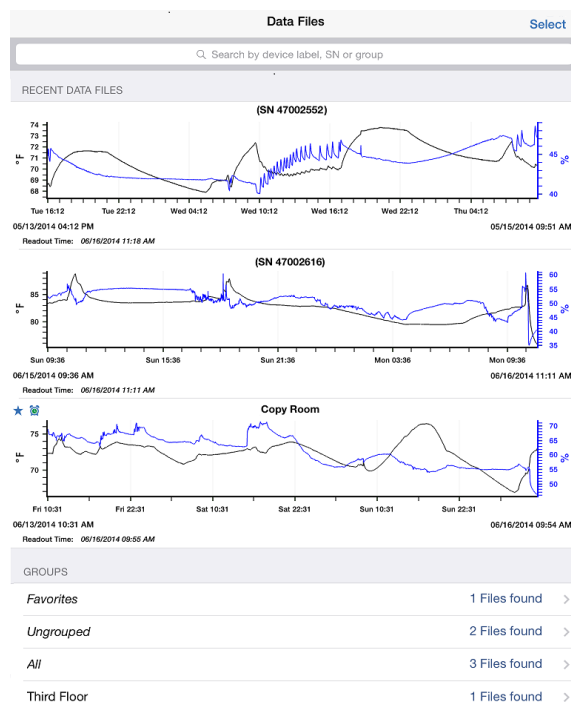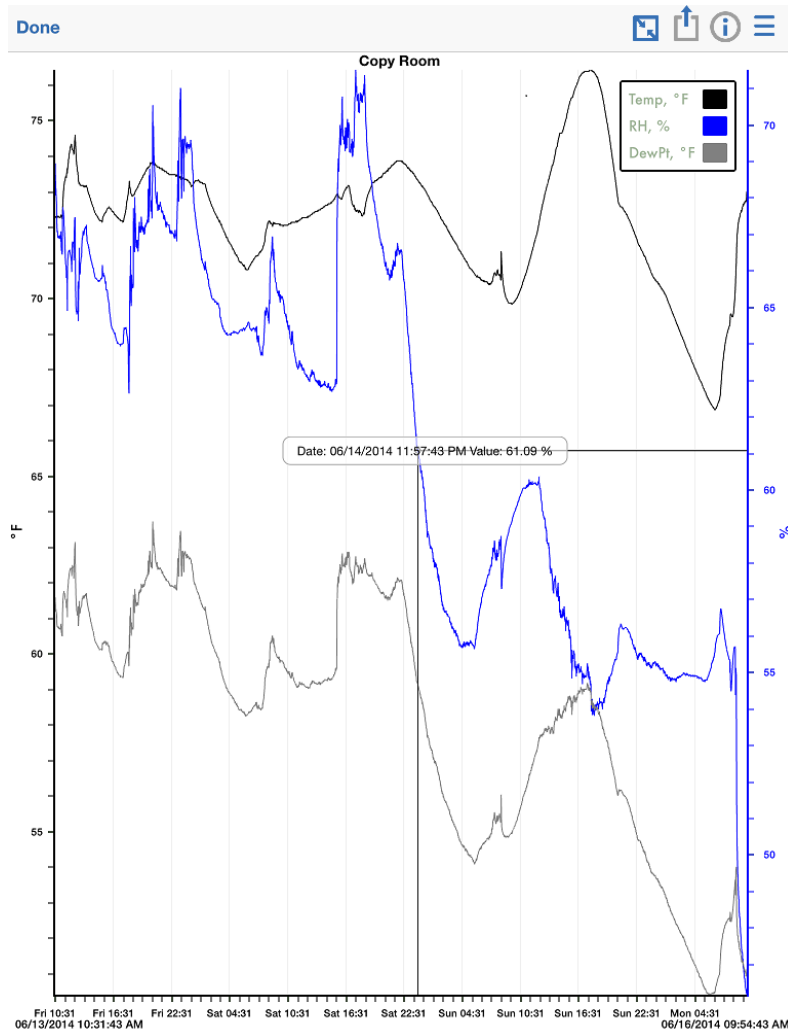
Viewing Data in Graphs

A mini-graph is displayed for each data file saved on your device in the Data Files screen. The mini-graph provides a snapshot of the logged data for enabled sensors and also includes the following information:

This icon appears if the logger is part of the Favorites group

An alarm icon indicates an alarm tripped

The label used for the deployment; the logger serial number is listed if no custom label was created

The date/time when this data file was read out from the logger

Tap a mini-graph to open a larger version of the graph like this example:

When viewing a large graph, you can:

- Swipe up and down anywhere on the graph to scroll up and down along the Y axis.

- Swipe left and right anywhere on the graph to scroll left and right along the X axis.

- Stretch or spread the plotted series to zoom in to a particular date or time. Pinch the series to zoom out.

- Press and hold anywhere on a series to view the sensor data point logged at that particular date/time at the intersection of two crosshairs (as shown in the example above).

- Tap the ⊡ icon at the top of the graph to restore the graph to its original view.

The large graph displays the label used for the deployment at the top of the graph and a legend if more than one series is displayed. By default, logger events (such as Alarm Tripped or Alarm Cleared), derived series (such as dew point), and statistics are not displayed on the graph. To show or hide different sensors, events, or statistic series on the graph, tap ☰ and select the sensors or events you want to include or exclude and then tap ☰ again. The large graph is updated to show the sensors and events that you selected. Note that this does not change the view of the mini-graphs in the Data Files screen or the data included in shared files.

Viewing Logged Data and Sharing Files

You can view the individual logged data points and share, or export, data files and graph images for analysis in other software.

To view data or share data files:

1. Tap Data Files.

2. To share a single file, tap the mini-graph that has the data you wish to view or share and then tap ⬆ at the top of the large graph.

   To share multiple files, tap Select at the top right corner of the Data Files screen. Tap each mini-graph you want to share or tap a group name to share all the files within that group, or tap a mix of both individual files and groups. Once you have selected all the files you want, tap Share at the bottom left corner of the Data Files screen.

3. In the Share screen, select a data file or graph format as described in the following table. Note that the options available for sharing depend on the apps installed on your mobile device.

Icon	Data File	Description
XLSX	**XLSX** Microsoft® Excel® file	Tap XLSX to generate an Excel file with data, logger events, and details, including information about the file and each data series. Mail or copy the file, or open it in a supported app. Tap Quick Look to see a preview of the data, events, and details.
CSV	**CSV** comma-separated values file	Tap CSV to generate a comma-separated values file with data and logger events. Mail or copy the file, or open it in a supported app. Tap Quick Look to see a preview of the data and events.
TXT	**Text** plain text file	Tap TEXT to generate a text file with data and logger events. Mail or copy the file, or open it in a supported app. Tap Quick Look to see a preview of the data and events.
HOBO	**HOBO** HOBOware® file	Tap HOBO to generate a HOBOware file with data, logger events, and details, including information about the file and each data series. Mail or copy the file and open it in HOBOware.
Image	**Image** .png file	Tap Image to create a screen shot of the large graph. Mail, message, copy, print, or save the image to your photos. Tap Quick Look to see a preview of the image. **Note:** This option is only available when sharing a single file; it is not available if you have selected multiple files.

You can also copy files to iTunes®. Select all the files and format as described above and then connect your device to the computer and sync it with iTunes. The files generated will be available in the Apps section under File Sharing.

Note that the generated files are only available in HOBOmobile while the Share screen in which you select a file type is open. Once you exit that screen, any generated files are deleted. Repeat the steps in this section to regenerate the files as needed.

Viewing Data File Details

To see information about a data file, such as the settings used to configure the logger:

1. Tap **Data Files**.

2. Tap the mini-graph that has the data you wish to view or share.

3. Tap ⓘ at the top right corner of the graph.

4. In the Data Files Details screen, the logger part number, serial number, and firmware version is listed. Tap Logger Configuration to see the following settings that were in place when the logger was started:

   - **Label.** The custom name entered for the logger or the serial number if no name was entered.

   - **Group.** The name of the custom group the logger belongs to, if any.

   - **Location (if enabled).** The map coordinates saved to the logger from the mobile device during configuration.

   - **Config Date.** The date and time the logger was configured (this may be different than the time logging began depending on the Start Logging settings in place).

   - **Deployment Number.** The number of times the logger has started logging as configured by the software. **Note:** If the logger was stopped and restarted during the deployment, the deployment number will remain unchanged. Only reconfiguring the logger will change the deployment number.

   - **Logging Interval.** The rate at which the logger was recording data during fixed interval logging.

   - **Logging Duration.** The approximate length of time the logger could have continued logging given the configuration settings in place (does not indicate the actual time the logger was logging).

   - **Start Logging.** The option used to begin logging.

   - **Stop Logging.** The options used to end logging.

   - **Sensor & Alarm Setup.** The sensors enabled and any associated alarms or burst logging limits. If alarms were configured, the settings selected for Maintaining Visual Alarms and Audible Alarms are also listed.

   - **Logging Mode.** The type of logging used during deployment.

   - **Show LCD.** An indication of whether the LCD was enabled or disabled during the deployment.

   - **Statistics.** The statistics that were logged during the deployment and the sampling rate used (if applicable).

   - **Burst Logging Interval.** The interval used during burst logging mode (if applicable).

Deleting Data Files

There are two ways to delete a data file:

1. Tap **Data Files**.

2. Find the file you want to delete and swipe it to the left.

3. Tap Delete and confirm that you want to delete the file when prompted.

Or:

1. Tap **Data Files**.

2. Tap Select at the top right corner of the Data Files screen.

3. Scroll to the file you want to delete. Tap it to select it.

4. Tap Delete at the bottom right of the Data Files screen and confirm that you want to delete the file when prompted.

Chapter 4
Settings, Support, and FAQs

Changing Settings

Tap Settings to change the following settings in HOBOmobile:

- **Time-Saving Options.** Use this setting to select several time-saving options for configuring and starting loggers. Enable Configure if you want to use these options and then tap Configure to make changes. The following options are available:

  - **When Starting.** This option controls what happens after you tap Configure when the logger is connected to your device.

    – Select Show Configure Screen to set up the logger using the Configure screen.

    – Select Automatically Start to bypass the Configure screen and allow the logger to automatically begin logging as defined by the Default Start Type.

  - **Fill Configure Screen with Contents of.** This option controls the default settings that are displayed in the Configure screen (which is only viewable if Show Configure Screen is selected as the option under When Starting).

    – Select Current Logger to display the settings for the currently connected logger.

    – Select Previous Configuration to display the settings used with the last configured logger of the same model.

  - **Default Start Type.** This option is available when Previous Configuration is selected for the "Fill Configure Screen with Contents of" option. This option set the default start type displayed in the Configure screen (if Show Configure Screen is selected under When Starting) or used to start the logger (if Automatically Start is selected under When Starting).

    – Select Previous Option if you want the logger to start using the same setting from the last configured logger of the same model.

    – Select Now for logging to begin immediately.

    – Select On Next Logging Interval for logging to begin on the next even interval

    – Select On Button Push for logging to begin when you press the Start/Stop logging button on the logger for 3 seconds or tap Start Logging within HOBOmobile.

    – Select On Date/Time for logging to begin on a date and time you specify (tap On Date/Time, select a date and time, and tap Save).

  - **Default Label.** This option controls the label used for the logger by default.

    – Select Current Logger Label to use the label of the currently connected logger.

    – Select Serial Number to use the logger's serial number.

- **Units.** Switch between US and SI units. Readouts that take place after changing the units will automatically use the new units. The units displayed on existing mini-graphs will not be updated; mini-graphs will continue to display the units in place at the time of the readout. Large graphs, however, will

display the unit change (tap the mini-graph to view the large graph with the new units). Shared data in existing data files will also display the unit change. The units displayed on the logger LCD will be updated the next time the logger is configured.

- **Time Zone for Data.** This setting controls the time zone used in the graphs and for shared data files. Select Set Automatically if you want HOBOmobile to use the same time zone as your phone or tablet. If you want HOBOmobile to use a different time zone than your device, disable Set Automatically and then select the desired time zone. Readouts that take place after changing the time zone will automatically use the new time zone. The time zone displayed on existing mini-graphs will not be updated; mini-graphs will continue to display the time zone in place during the readout. Large graphs, however, will display the time zone change (tap the mini-graph to view the large graph with the new time zone). Time zone changes are updated for all data file types except .hobo files. You can adjust the time zone for .hobo files within HOBOware. Note that the time listed with the Config Date for a file (which can viewed in the Full Status Details and Data File Details screens) and the Configure Time in an .xlsx file (viewable from the Details tab) will retain the time zone used while configuring the logger.

- **Show Only My Devices.** This setting determines which loggers are displayed in the Recently Seen/In Range list in the HOBOs screen. Enable the setting if you only want to display the loggers that your phone or tablet has connected to in the list. Disable this setting if you want all loggers within range of the phone or tablet to be displayed regardless of whether your device has connected to them. **Note:** This setting must be disabled to edit the Recently Seen/In Range list.

- **Diagnostics & Troubleshooting.** These settings control the information that is gathered and shared with Onset.

  - **Share Diagnostics with Onset.** Enable this to share information about the software for troubleshooting and for future enhancements.

  - **Enable Logging.** Only turn on this setting when directed by Onset Technical Support. When you enable this setting, the View and Share Log option is available. Select View and Share Log as directed by Onset Technical Support.

Support

Tap About to check the software version, access manuals that you can open in iBooks while offline, and get support information.

Frequently Asked Questions

The following questions can help with troubleshooting issues with the software. For additional help, contact Onset Technical Support at 1-800-LOGGERS or 508-759-9500 or at loggerhelp@onsetcomp.com.

Why isn't my logger appearing in the Recently Seen/In Range list on the HOBOs screen?

- The logger may need new batteries. Symbols will appear on the logger LCD if the batteries have enough voltage remaining and are installed properly.

- The logger is not within range of the phone or tablet or something is obstructing the communication. Move closer to the logger. The range for successful wireless communication is approximately 30.5 m (100 ft) with full line-of-sight.

- Make sure Bluetooth is enabled in your phone or tablet's settings.

- Try disabling the "Show Only My Devices" setting if necessary.

I see my logger in the Recently Seen/In Range list, but I can't connect to it. What can I do?

- Close HOBOmobile and then reopen it.

- Power cycle the mobile device and try connecting again.

My logger is listed in the wrong group. How can I change that?

Connect to the logger, tap Configure, and then tap Group. Select a group for the logger or create a new group. If you do not want the logger to be listed in any group, then remove it from all groups (no checkmark should be displayed next to any group name). Tap Add to Favorites if you want the logger to be in the Favorites group. Tap Start when you are done. The logger needs to be reconfigured for any group changes to take effect.

I was setting up my logger and then I lost the connection. Will my logger still start?

If you did not tap Start before the connection was lost, then the logger will not start logging. Connect to the logger again, finish choosing your settings, and then tap Start.

When my device connected to the logger and I tapped Configure, the logger automatically started logging instead of showing the Configure screen. How can I change the logger configuration settings?

Tap Settings and then tap Configure under Configure Time-Saving Options. Select Show Configure Screen instead of Automatically Start.

Can I check how much battery power is remaining or whether the logger is logging or stopped with HOBOmobile instead of checking the logger LCD?

If your device is within range of the logger, you can view the logging status in the Recently Seen/In Range List on the HOBOs screen. You can also connect to the logger and tap Full Status Details to see remaining battery power and check configure settings.

How do I lock my logger so that no one else can configure it?

Connect to the logger and tap Logger Password. Enter a password up to 10 characters. The password will then be required any time another mobile device attempts to connect to the logger. The device that configured the logger, however, will automatically retain the password so you do not have to type in a password each time that device connects to the logger.

How do I reset the password on a logger?

Simultaneously press both the Start/Stop button and the Alarm/Stats button on the top of the logger for 3 seconds or tap Reset to Factory Default on the Set Logger Password screen.

An alarm was tripped on the logger. How do I clear it?

Visual alarms are cleared based on the settings selected under "Maintain Visual Alarms Until" when configuring the logger. This means the visual alarm will clear when the logger is reconfigured, when the sensor is back within limits, or when the alarm button on the logger is pressed depending on which option you selected.

If an audible alarm is sounding, press any button on the logger to stop it or connect to the logger and tap the Clear Audible Alarm action.

How do I offload my logger?

Connect to the logger and tap Readout. Once the readout is complete, tap the Data Files icon to view the offloaded data.

It is taking more than a minute to read out my logger. Is this normal?

A logger with a full memory should take a minute or less to read out. If the readout is taking longer than a minute, move the mobile device closer to the logger, within a few feet if possible. The further away the mobile device is from the logger, the longer the readout can take.

I zoomed in on a graph. How do I get it back to the original view?

Tap at the top of the graph. If you have activated the crosshair tool while zoomed out on a graph, it is possible that this button will not restore the graph to its original scale. Tap Done and then tap the mini-graph again to resume viewing the graph at its original scale.

How do I view the individual data points in a list instead of a graph?

Tap ⬆ at the top of the graph, select CSV or TEXT to view the data points, or select XLSX and then tap Quick Look. Open the files in a spreadsheet or text editor for more analysis.

My graph is blank. What happened?
Viewing the graph of a full data file or adding more sensors to the view of a graph (through the sensor selector) may occasionally draw a blank graph. Try doing a small pinch to refresh the plot and correctly draw all series. If this does not work, try hiding sensors (tap ☰ at the top of the graph) to see if the plot redraws correctly. You can also tap Done and then tap the mini-graph again to see if this corrects the issue. If not, restart the app and try viewing the graph again.

How do I add or remove series or events from the graph?
Tap ☰ at the top of the graph and then enable or disable the sensors, statistics, and events you wish to show or hide on the graph. Tap ☰ again when you are done.

How can I print a graph?

Tap a mini-graph in the Data Files screen to view the larger version of the graph. Tap ⬆ and tap Image and then tap Print.

I don't have email set up on my mobile device. What should I do if I want to email my data?
If you would like to email data files or images from HOBOmobile, set up your mail account information before attempting to share these files. Go to Settings > Mail, Contacts, Calendars in your device to set up an account.

Can I use AirDrop® for sharing .hobo files?
If you would like to AirDrop a .hobo file, consider using the AirSharing app, which allows sharing of this file type.

Is there a way to copy all my data files to my computer?

Yes, you can use iTunes. Tap Data Files and tap Select at the upper right corner of the screen. Select the "All" group, which will select all data files on the device. Tap Share at the bottom left corner of the screen and select the file type. After all files are generated, connect the device to a computer and sync it with iTunes. In the Apps section of iTunes, go to File Sharing to access the files generated in HOBOmobile. Note that files are only available for copying while the Share screen in which you select the file type is open in the app. Once you exit that screen, generated files are deleted.

Can I change the groups for the data files?
Group names are set when the logger is configured and retained with any data files read out from the logger. As a result, you cannot change the group in which the data file is categorized.

I changed the units in Settings. Why is the logger still displaying the old units?
The units displayed on the logger LCD can only be changed if the logger is reconfigured. To change the units on the logger LCD, select the desired units in Settings, connect to the logger, tap Configure, choose any settings as desired, and tap Start in the upper right corner. The new units will be displayed on the LCD when logging restarts.

I changed the units in Settings, but the mini-graphs still show the old units. Can the mini-graphs show the new units?
Mini-graphs from readouts that occurred before changing the settings will always display the units in place at the time of the readout. However, you can tap the mini-graph and see the new units on the large graph.

I changed the time zone in Settings, but the mini-graphs still show the old time zone. Can the mini-graphs show the new time zone?

Mini-graphs from readouts that occurred before changing the settings will always display the time zone in place during the readout. However, you can tap the mini-graph and see the new time zone on the large graph.

I switched to another app and when I returned to HOBOmobile, the HOBOs screen was blank. What should I do?

Switch to another screen in HOBOmobile (tap Data Files for example) and then tap HOBOs. The screen should then appear again as normal.

My device is showing too many loggers. How can I view only the loggers that I configured?

Tap Settings and then enable Show Only My Devices. The Recently Seen/In Range List on the HOBOs screen will now show only the devices configured with your phone or tablet.

I need to configure multiple loggers with the same settings. Is there a way to do this automatically?

You can use the Configure Time-Saving Options. First, configure one logger with the settings you want to use. Tap Settings and then enable Configure. Select Previous Configuration and the default label. Each logger will then be configured with the same settings as the first one. You can also select Automatically Start to bypass the Configure screen altogether and allow the logger to start according to the previous start type upon tapping Configure when the logger is connected.