



Barometric Compensation Assistant

For HOBOWare® Pro Software

User's Guide

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About Data Assistants

Data assistants are plug-in utilities for HOBOWare. They let you create new data series by combining data recorded by the logger with additional data that you enter before you display the plot.

If your logger or datafile contains data that supports a data assistant, you will see a Data Assistants section at the bottom of the Plot Setup dialog. Select an assistant and click **Process** to continue.

For information about installing and managing data assistants, refer to the following page at the Onset web site:

<http://www.onsetcomp.com/dataAssistants>

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Introduction

The Barometric Compensation Assistant uses water pressure data from a HOBO U20 Water Level Logger and additional information from you to compensate for barometric pressure and create a water level or sensor depth series.

After you use the assistant and display the plot, you may apply filters to the new series.

Using the Barometric Compensation Assistant

To create a water level or sensor depth series:

1. Read out a logger or open a datafile that contains water pressure data from a U20 Water Level Logger.
2. From the Plot Setup dialog, select **Barometric Compensation Assistant** and click **Process**. The Barometric Compensation Assistant dialog will appear.

Barometric Compensation Assistant

Fluid Density

☐ Fresh Water (62.428 lb/ft³)

☐ Salt Water (63.989 lb/ft³)

☐ Brackish Water (63.052 lb/ft³)

☐ Manual Input 60.000 lb/ft³

☒ Derived From Temp. Channel, assuming fresh water

Barometric Compensation Parameters

☒ Use a Reference Water Level

Reference Water Level: 50.000 Feet

Reference Time: 12/30/04 3:25:59 PM GMT-05:00 [Pres = 21.152 psi]

Use Barometric Datafile

Barometric Datafile: /Well_Log_Baro.hobo Choose...

Use Constant Barometric Pressure When using a reference water level, there is no need to enter a constant barometric pressure

Constant Barometric Pressure: 0.000 psi

Resultant Series Name: Water Level

User Notes:

? Cancel Create New Series

3. Provide **Fluid Density** information by choosing a water type (fresh, salt, or brackish), entering a specific constant value, or using the temperature series (if logged) to use temperature-compensated density assuming fresh water.

4. To enter a reference water level, check the **Use a Reference Water Level** box, enter the water level, and indicate whether it is in feet or meters.
 - Enter the water level as a *positive number* if it is measured upward from a reference point below the water's surface, such as the water's height above sea level.
 - Enter the water level as a *negative number* if it is measured downward from a reference point above the water's surface, such as a well cap.

Then, from the drop-down, select the logged time and value that is closest to the time when you measured the water level.

When selecting a logged value and time to link to the reference level, make sure the logger readings have stabilized. When a logger is first deployed in water, it takes some time for its temperature to reach equilibrium. You will get the best accuracy if you link your reference reading to a stabilized logger reading.

When using a reference water level, the resulting series data will contain water level values relative to this reference level. If you do not use a reference water level, the resulting series data will contain values for absolute sensor depth.

5. You can either use a barometric data file from another source, or enter a fixed barometric pressure. For the most accurate water level results, use a reference water level and a barometric data file. The barometric data can come from another HOBOWare U20 Water Level Logger in air; a HOBOWare Weather Station, HOBOWare Micro Station, HOBOWare U30, or HOBOWare Energy Logger Pro; or a text file from another source.
 - To use another file to provide barometric information, click the **Use Barometric Datafile** button and enter (or browse to) the name of a .hobo, .hsec, .dtf, .dsec, or .txt file that contains a barometric pressure series from an overlapping time period. You will have the option to display this series on the plot.

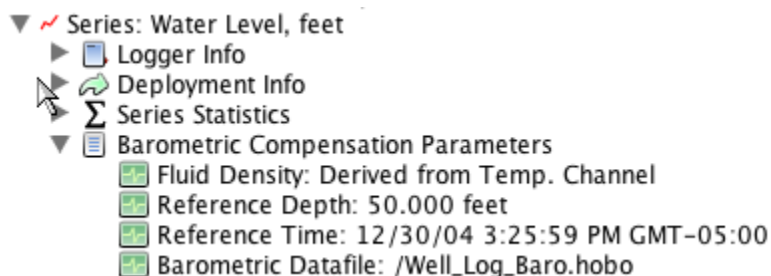
Important: To use a .txt file, refer to the *HOBOWare Pro User's Guide* for information on how this file must be formatted.

- To use a constant pressure value, click the **Use Constant Barometric Pressure** button. Enter the constant value and indicate whether it is in psi or kPa. (You cannot use a constant pressure value in combination with a reference water level.)

6. Keep the default **Resultant Series Name**, or enter a new one. You may also enter **User Notes** concerning the series you are creating.

NOTE: Your settings are retained, so you do not need to re-select your density and barometric file each time you use the Barometric Compensation Assistant as long as they still apply to the water level data.

7. Click **Create New Series**. The new series is listed and selected in the Plot Setup dialog.
8. You can click **Process** on the Plot Setup dialog again to create another series using different barometric compensation parameters.
9. Click the **Plot** button. The settings you entered will be displayed in the Details pane of the plot.



Available Filters

After the plot is displayed, you may apply minimum, maximum, and average filters to the new water level or sensor depth series as you would for any sensor data series in HOBOWare Pro.

Software Updates

If you have an Internet connection, HOBOWare Pro can periodically ask if you would like it to check the Onset website for software updates. This includes updates to your data assistants.

The default is to check once per week, but you can configure HOBOWare Pro to check daily or monthly. In Preferences, go to the General pane. **Check for HOBOWare updates** is located under the Startup heading.

You may check for updates manually at any time. Choose **Check for Updates** from the Help menu.