onset ®

Linear Scaling Assistant

For HOBOware® Pro Software

User's Guide

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About Data Assistants

Data assistants are plug-in utilities for HOBOware Pro. 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

Introduction

The Linear Scaling Assistant converts a data series from a compatible sensor to some other measurement when you enter two raw values and their corresponding measurement values. The conversion must be based on a linear relationship. Nonlinear scaling is not supported. After the data is displayed in a plot, you may apply filters to the new series.

This assistant can be run from the **Launch** window (Pre-set Parameters) or from the **Plot Setup** dialog. If you run the assistant from the **Plot Setup** dialog, you must run the assistant each time you readout the logger or open a datafile.

Pre-set Parameters

If you run the assistant from the **Launch** window, parameters are applied automatically each time you readout the logger. Once you have pre-defined a parameter set, the parameters are also used when current readings are viewed in the **Status** window. Parameter sets are stored on the logger and apply to that logger and channel configuration only.

The parameters last entered into any given Data Assistant will be the default used the next time the Data Assistant is run, unless it is being used to edit an existing parameter set. If you run a Data Assistant at Plot Setup time, and the next time you run it from the **Launch** window, the default values are the value you entered at Plot Setup time.

The Pre-set Parameters feature is available for the HOBO U30, the HOBO H21 (Weather Station and Micro Station) and the HOBO H22 (Energy Logger Pro) loggers.

Sensors

This assistant is available for the following sensors:

- CABLE-2.5-STEREO Voltage Input Cable (for U12 loggers)
- CABLE-4-20-mA Input Cable (for U12 loggers)
- S-CIA-xxxx 12-bit 4-20mA Input Adapter
- S-VIA-xxxx 12-bit Voltage Input Adapter
- S-FS-CVIA FlexSmart™ Analog Module
- S-FS-TRMSA FlexSmart TRMS Module
- U30 Analog Sensor Port
- S-FS-TRMSA (U30 TRMSA Module)
- S-LWA-xxxx Leaf Wetness
- S-SMA-xxxx Soil Moisture

The Linear Scaling Assistant can be applied only to logged data from these sensors. To avoid confusion, keep in mind the other types of scaling that are available within HOBOware Pro:

- You may use HOBOware to set up linear scaling for the CABLE-4-20-mA and CABLE-2.5-STEREO sensors on a U12 logger prior to launch. (Consult the *HOBOware User's Guide* for details.) The advantage to scaling before launch is that you can view the scaled values on the Status window, and the data will be properly scaled when you read out the logger or open the datafile. You can later rescale this scaled series using the Linear Scaling Assistant if you need to create a different measurement.

- FlexSmart modules are set up for scaling prior to launch, as part of the module configuration process. (Consult the *HOBOware User's Guide* for details.) You can later rescale these scaled series using the Linear Scaling Assistant if you need to create a different measurement.

- The Pulse Scaling Assistant is similar to the Linear Scaling Assistant, but only allows scaling of pulse data. Consult the *Pulse Scaling Assistant User's Guide* for compatible adapters.

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

Using the Linear Scaling Assistant
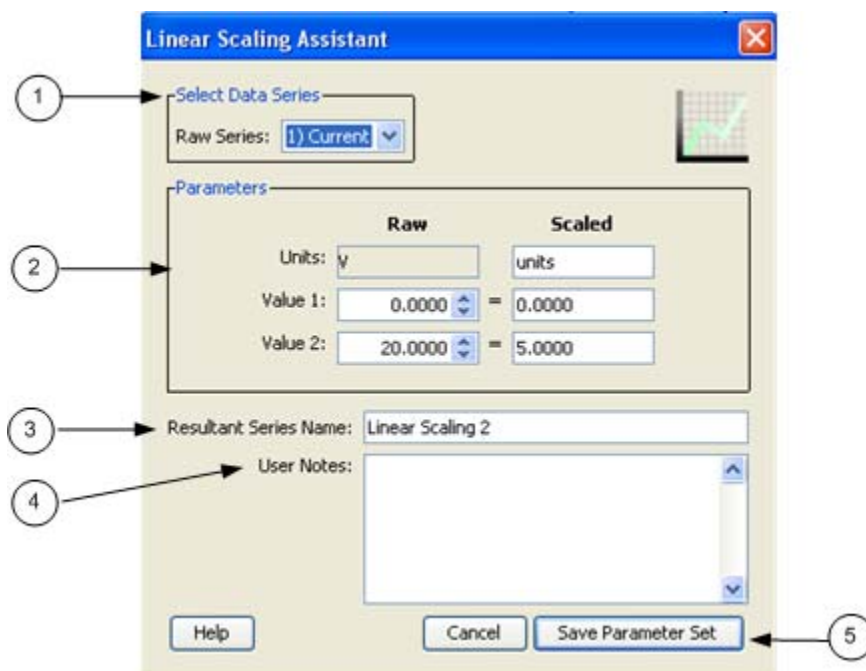
Running the Assistant

From the **Launch** window:

1. Launch a logger that has a supported Electronic Switch Pulse Input Adapter connected.
2. Click the **Data Assistant** button.
3. Double-click the assistant name or,

   select the kWh assistant name and click the **Create** button.

From the **Plot Setup** dialog:

1. Read out a logger or open a datafile that contains a Counts series from a supported Electronic Switch Pulse Input Adapter.
2. Select kWh Assistant**.**
3. Click the **Process** button.

The Linear Scaling Assistant dialog will appear.

1. Select Data Series

If your datafile includes multiple scalable series, choose the one you want to scale from the **Raw Series** drop-down list. (If your logger supports sensor locations, the location you entered will be displayed here.)

2. Parameters

In the **Scaled** column of the Parameters panel, enter the units name for the scaled series, and enter the scaled values in the **Scaled** column to correspond with the numbers in the **Raw** column. (The default values in the **Raw** column are based on the high and low values supported by the sensor, but you may use different values, as long as those values fall within the sensor's range.) These numbers establish a linear relationship between raw and scaled values.

3. Resultant Series Name

Keep the default **Resultant Series Name**, or enter a new one. You may also enter **User Notes** concerning the series you are creating. **NOTE:** All of these settings will be retained as default values the next time you access the Linear Scaling Assistant, if the logger or datafile contains data from the same type of sensor you just scaled. If you are running the Data Assistant from the **Launch** window, the **Resultant Series Name** field cannot be blank.

4. User Note

Enter any **User Notes** concerning the series you are creating (optional).

5. Save Parameter Set or Create New Series

If you are in the **Launch** window, click **Save Parameter Set**.

If you are in the **Plot Setup** dialog, click **Create New Series**.

NOTE: All of these settings will be retained as default values the next time you access the assistant.
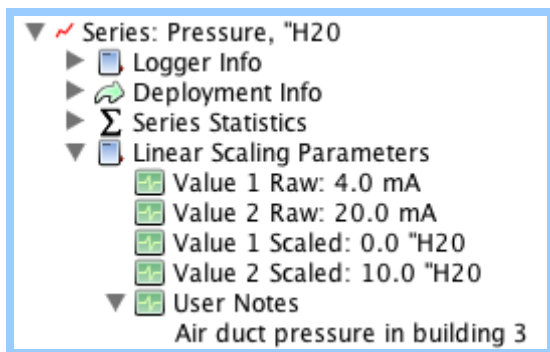
To create additional series using a different raw series or different parameters, click the **Create** button (if in the **Launch** window) or the **Process** button (if in the **Plot Setup** dialog).

Generating New Series

If you are running the assistant from the **Launch** window, the parameters will be applied each time you readout the logger. If you are running the assistant from the **Plot Setup** dialog, the new series will be generated when you click the **Plot** button.

Display

The scaled series will appear in the graph, and data will be displayed in the legend and in the **Details** pane (shown below).

Available Filters

After the plot is displayed, you may apply minimum, maximum, and average filters to the scaled 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.

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