

6

Using ASPYRE Configurator

This chapter explains how to use the ASPYRE Configurator software as an alternative to using the power controller's keypad and display for viewing and setting parameters as well as the advanced features not available via the power controller's onboard user interface.

Overview

This section describes the scope and intent of the ASPYRE Configurator software.

Typical Uses

The software may be used during commissioning to set and make a record of settings that determine how the power controller operates and performs; to copy or clone the setup of one power controller to another; on a day-to-day basis to monitor operation and power usage; if necessary, to examine performance in more detail to determine if any corrective actions are needed; or to restore the setup of the power controller.

Communicating with Power Controllers

ASPYRE Configurator software can communicate with ASPYRE power controllers via USB or RS-485. When initially commissioning the power controller it is convenient to connect a computer to the power controller via the USB port located below the control panel's display. The power controller's electronics are powered by the computer via the USB connection when the auxiliary line power is turned off. This makes it possible to examine and configure the power controller's settings prior to applying power to the panel.

USB is designed to connect consumer electronics and peripheral devices such as cameras and keyboards to computers in home and office environments; it is not an industrial communications protocol. To continue communicating once the panel door is closed and line power is on, connect the computer to the power controller via the RS-485 communications port. See "Communication Connections" on page 28.

Recipes

A *recipe* is a computer file which contains a setting for each user adjustable parameter in a power controller. A recipe can be used to configure a power controller for a particular application or job. A recipe can be used to copy the settings of one power controller to another. A recipe can be created by *uploading* the settings from a power controller to the ASPYRE Configurator software and saving it as a file on the computer. A power controller can be configured by *downloading* a saved recipe from the ASPYRE Configurator software to the power controller.

How To

This section provides step-by-step procedures for common tasks.

Communicate For the First Time

These procedures are for installing the software and establishing communications for the first time.

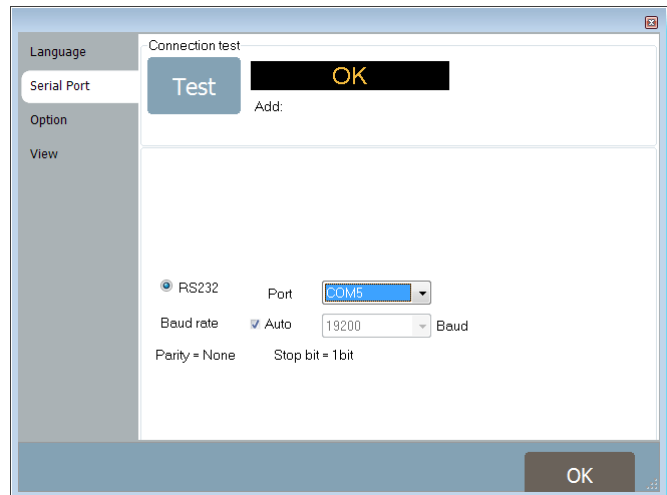
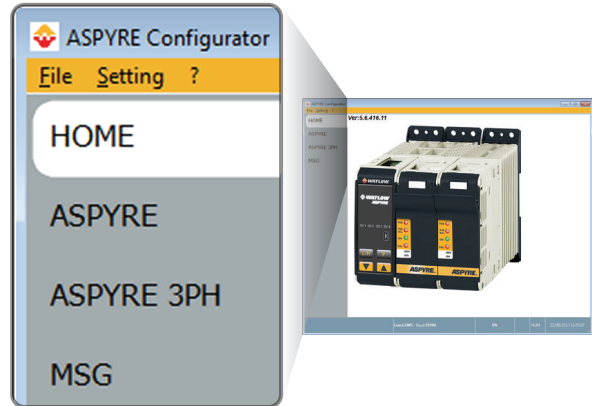
To install ASPYRE Configurator:

1. Locate the installer:
 - On www.watlow.com linked to the ASPYRE power controller product page. Download the installer to your computer
 - On the Controls Tools DVD ROM disk.

2. Double-click the installer program.
3. Follow the on-screen instructions to complete the installation.

To communicate with a power controller:

1. For the direct USB connection:
 - Connect the USB cable (Watlow p/n 0219-0480-0000) between the computer and the micro USB connector between the display and keypad on the ASPYRE power controller's control panel.
 - Wait for the USB driver to install, if necessary.
2. For an RS-485 connection:
 - Connect the computer to the ASPYRE power controller. See "Communication Connections" on page 28. For most computers a USB-to-485 converter is required (Watlow p/n 0847-0326-0000).
3. Launch the ASPYRE Configurator software.
4. Select:
 - **ASPYRE** to communicate with a single-phase power controller
 - **ASPYRE 3PH** to communicate with a three-phase power controller (two or three switched legs)
5. From the **Setting** menu, choose **Serial Port**.
6. For **Port**, select the COM port that is connected to the power controller (see the note below).
7. To verify communications, click **Test**.
8. Click **OK**.



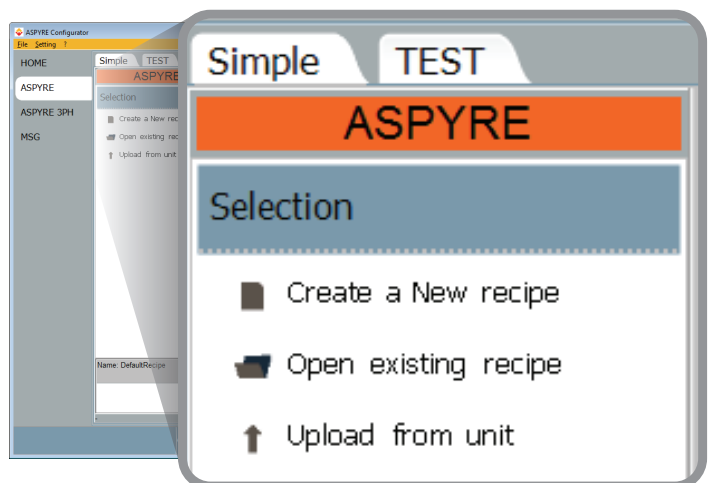
NOTE! There are several ways to determine which port is connected to the power controller. You can look in the Windows® Device Manager under Ports (COM & LPT) for the COM port named "LPC USB VCOM Port (COMx)" where x is the port number. You can also disconnect the USB cable from the computer, run ASPYRE Configurator and note the ports available in the list on the Serial Port dialog, then close ASPYRE Configurator, reconnect the USB cable and run the program again; the port that did not appear previously is the correct one.

Using ASPYRE Configurator

These procedures are for using the software once communication has been set up. They assume the software has been installed and the COM port and model type (ASPYRE or ASPYRE 3PH) have already been selected.

To view or save a power controller's settings using the Simple view:

1. Click **Simple**, if not already on the simple view.
2. Click **Upload from unit**.
3. Set the address, if necessary.
4. Click **READ**.
5. Wait for the software to read the parameter settings.
6. Click **OK**.



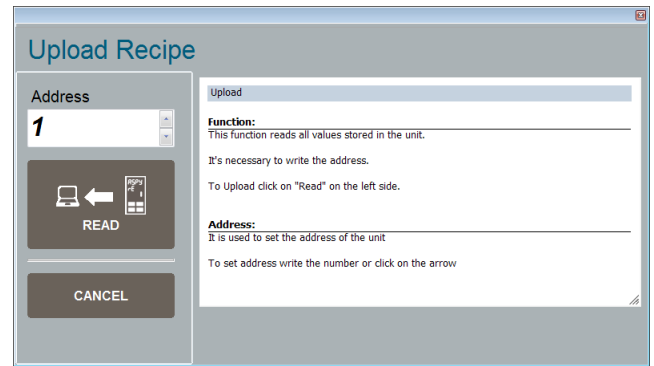
7. If desired, to save the settings in a recipe file:

- Click **Save**.
- Name the recipe.
- Click **Save**.

NOTE! In the simple view, the parameter values are only read from the power controller when the user uploads the settings. Changes to parameter values are only set in the controller when the user downloads the settings.

To edit a setting in a recipe:

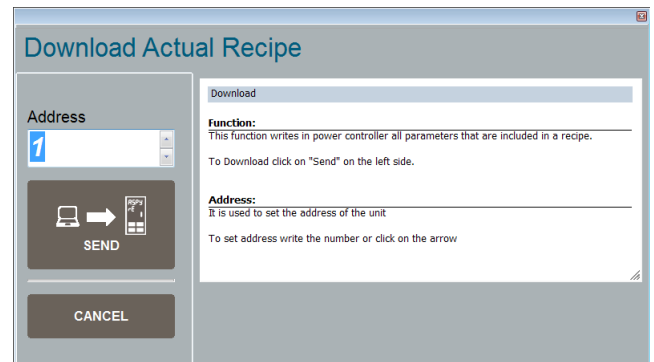
1. Click **Simple**, if not already on the simple view.
2. Click **Open** existing recipe.
3. Locate and select the recipe file and click **Open**.
4. Click **OK**.
5. Click the menu with the setting you want to change (**Setup**, **Advanced setup**, **Hardware** or **Communications**).
6. Select the value you want to change.
7. Edit the value with the increment and decrement buttons in the field or type the new value and press the Enter key.
8. Repeat steps 5 to 7 for all the changes you want to make.
9. To save the settings in a recipe file:
 - Click **Save**.
 - Name the recipe.
 - Click **Save**.



Nun	Par	Description	Value	UM	Hex
016	Out Scale	Output Scaling	100	%	00FF
017	I Lim SP	Current Limit Set Point (RMS)	84	%	035B
037	Nominal Line V	Nominal Line Voltage (RMS)	119	V	0077
038	Nominal I	Nominal Load Current (RMS)	21.4	A	00D6

To download a recipe file into a power controller:

1. Click **Simple**, if not already on the Simple view.
2. Click **Open** existing recipe.
3. Locate and select the recipe file and click **Open**.
4. Click **OK**.
5. Click **Download to unit**.
6. Set the address, if necessary.
7. Click **SEND**.
8. Wait for the software to write the parameter settings.
9. Click **OK**.

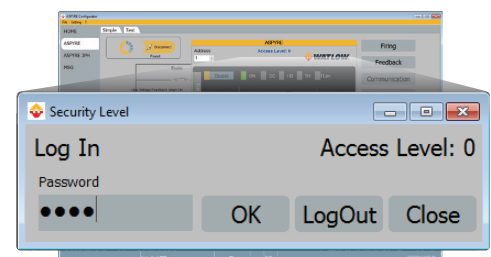


To monitor a power controller with the Test view:

1. Click **Test**, if not already on the test view.
2. Click **Connect**.

To log in on the test view to change the digital input and analog input functions:

1. Click the **Access Level** value (zero when logged out).
2. Type the password: **1111**.
3. Click **OK**.



To log out the test view:

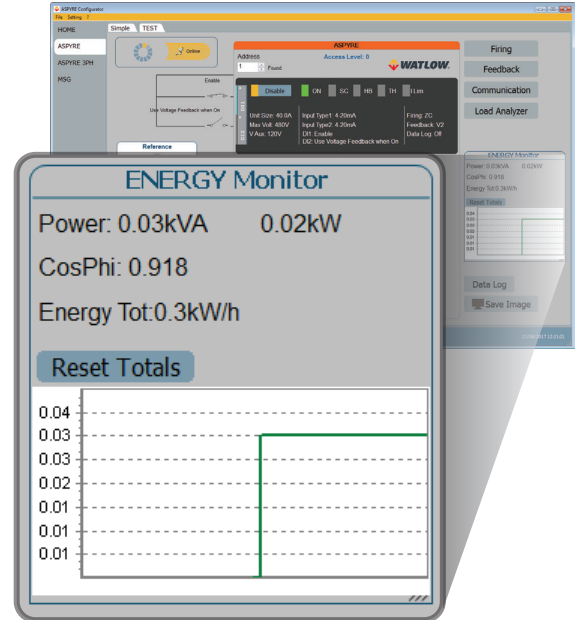
1. Click the **Access Level** value.
2. Click **Log out**.
3. Click **OK**.

To view data on the scope:

1. Click **Test**, if not already on the test view.
2. Click **Connect**.
3. Click **Load Analyzer**.
4. For each of up to three channels (Ch 1 to Ch 3):
 - With **PV1** choose the value to monitor
 - Select **Show**.
 - Click the color swatch to change the color
 - Click the button to turn the channel on.

To reset the power totals:

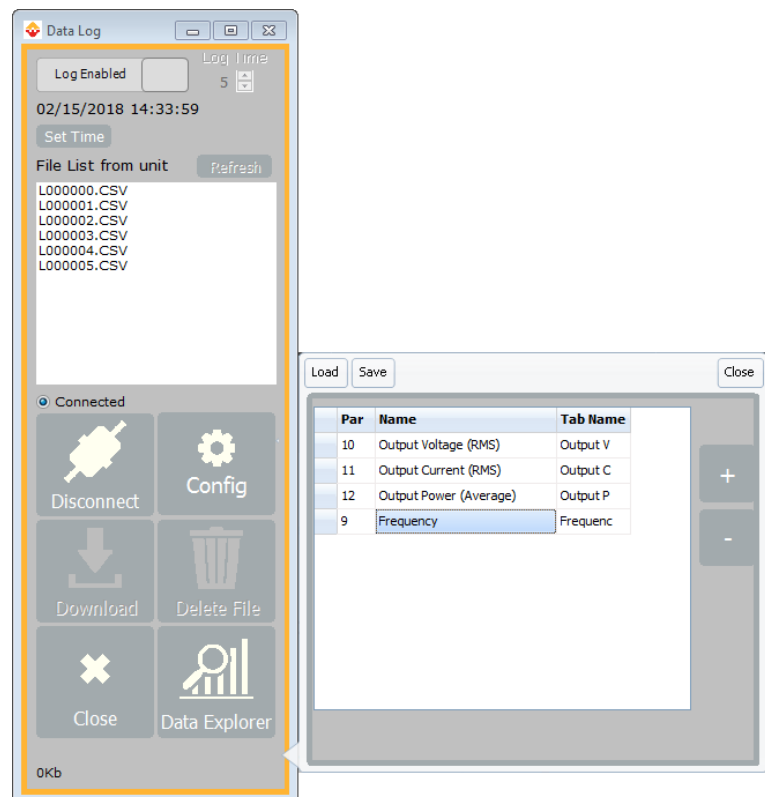
1. Click **Test**, if not already on the test view.
2. Click **Connect**.
3. Click **Reset Totals**.
4. Click **Yes**.



Setting Up and Using Data Logging

To set up data logging:

1. Click **Test**, if not already on the test view.
2. Click **Connect**.
3. Click **Data Log**.
4. In the **Data Log** window ensure the slider is set to **Log Enabled**.
5. Click **Set Time**.
6. Set the date and time and close the date/time window.
7. Set **Log Time** to the number of seconds between records.
8. Click **Connect**.
9. Click **Config**.
10. For up to ten parameters to log:
 - Click **+** to add a parameter to the list
 - In a row in the list either:
Type a parameter's Modbus® address in the **Par** field
OR
Select the parameter from the drop down list in the **Name** field
11. Click **Save** to send the parameter list to the controller
12. Click **OK** when prompted that the download is complete.
13. Click **Close**.



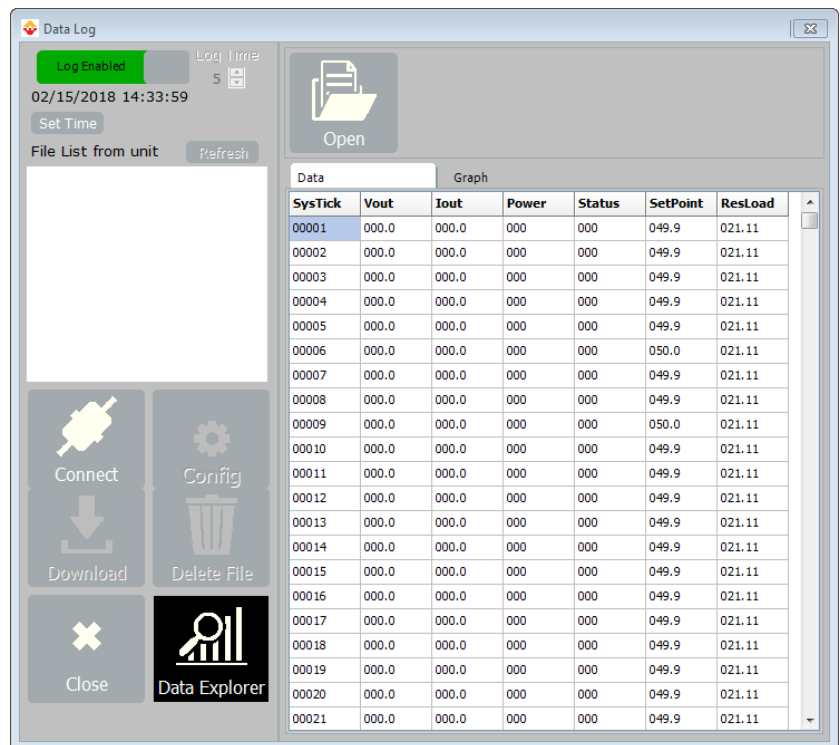
14. Click **Disconnect**.
15. Close the **Data Log** window.

To retrieve a data log file from the power controller:

1. Click **Test**, if not already on the test view.
2. Click **Connect**.
3. Click **Data Log**.
4. Click **Connect**.
5. Select a file from the list.
6. Click **Download**.
7. Select a location and click **Save**.
8. Wait for the file to download. The progress is indicated at the bottom of the **Data Log** window.
9. Click **OK** when prompted that the download is complete.
10. To delete the log file from the controller memory, if desired, click **Delete File**.
11. Click **Disconnect**.
12. Close the **Data Log** window.

To view a data log file after downloading it:

1. Click **Test**, if not already on the test view.
2. Click **Data Log**.
3. Click **Data Explorer**.
4. Click **Open**.
5. Locate and open the data log file.
6. If desired, click **Graph** to view the data on a graph.



Reference

This section provides explanations of the features found in the ASPYRE Configurator Software.

Program Window

Main Menu

Access these menus.

File menu

- **Exit**—close the program

Setting menu

- **Language**—open the Settings dialog to the language section
- **Serial Port**—open the Settings dialog to the serial port section
- **Option**—open the Settings dialog to the options section

? (Help) menu

- **Message Log**—opens the message view
- **About**—displays the About dialog with the program name and version and Watlow contact information



View selector

Select the view to use:

- **HOME**—the default view
- **ASPYRE**—access the Simple and Test views for a single-phase power controller
- **ASPYRE 3PH**—access the Simple and Test views for a three-phase power controller
- **MSG**—use the tools for monitoring and analyzing serial communication between the computer and the power controller.

Status Bar

Indicates information such as time and date, communications port and baud rate.

Simple view

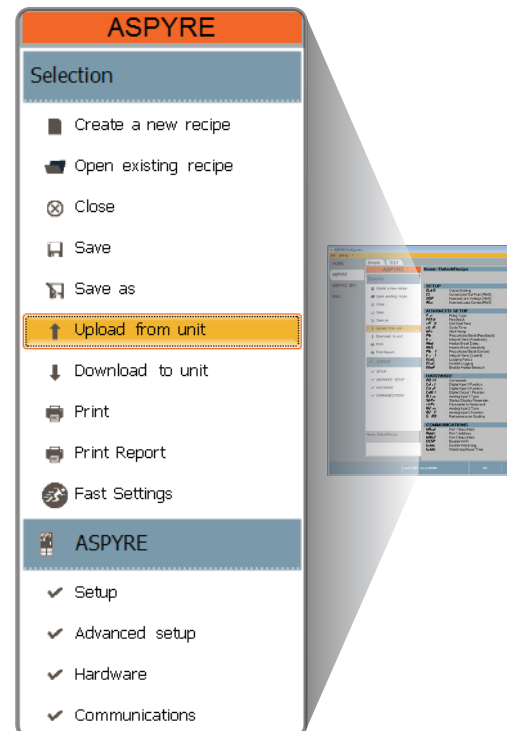
Use this view to create, save, upload and download recipes, saved sets of parameters settings. You can also use this view to see the settings in a controller.

Access this view by selecting ASPYRE for a single-phase power controller or ASPYRE 3PH for a three-phase power controller and clicking the Simple tab below the main menu, if not already selected.

NOTE! The parameter values are not updated continuously. They are read only when you upload them from the power controller.

Click one of these options to open or create a recipe:

- **Create a New recipe**—create a recipe file with the standard default settings
- **Open existing recipe**—open a previously saved recipe file
- **Upload from unit**—create a new recipe with the settings of the currently connected power controller



- **Close**—close the recipe
- **Save**—save the recipe in a file
- **Save as**—save a copy of the recipe in a file
- **Download to unit**—set the parameters in the currently connected power controller to the values in the recipe
- **Print**—print the recipe (see sample at left)
- **Print report**—print the recipe (see sample at left)
- **Fast Settings**—opens the setup wizard



⚠ NOTE! Changes to the values here affect the open recipe only. To apply these changes to the power controller settings, download them to the power controller using the Download to unit option.

[illegible]

- Communications status indicator—sweeps clockwise when the software is communicating with a power controller and data is updating continuously
- **Connect/Disconnect** button—click to start or stop communication updates with the power controller
- **Address** selector—set the address of the power controller
- **Access Level**—click the value to log in or out. Password is “1111”.
- **Fast Tune**—when logged in, click to open the **Fast Tune** window.
- **Port 2**—set whether the secondary port is used only to read data or to read and write data (does not apply to Modbus® RTU).

- Digital input states and functions—show whether each input detects an open or closed circuit and the function the input performs
- Digital Input States and Function Selectors—set the function for each digital input. Click DI1 or DI2 to expand the options.

View these indicators and fields for an overview or the configuration and status of the power controller.

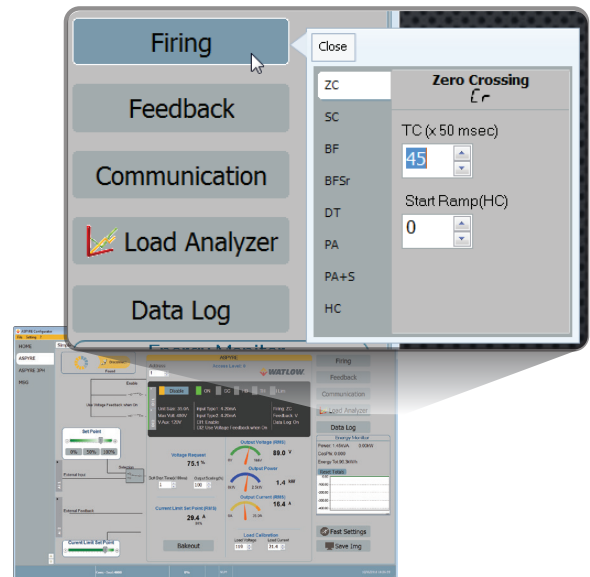
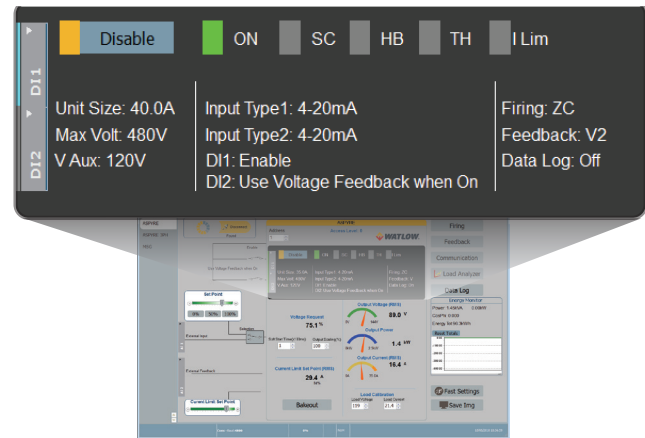
Status and Setup Indicators:

- Digital input status—illuminated when the input detects a closed circuit
- Enable indicator—illuminated when the power controller is enabled
- **Enable/Disable** button—click to enable the power controller if a digital input is not configured for this function
- **ON** indicator—illuminated when there is demand for the output to be on
- **SC** indicator—illuminated when there is a shorted SCR error
- **HB** indicator—illuminated when there is a heater break error
- **TH** indicator—illuminated when the heat sink is over temperature
- **I Lim** indicator—illuminated when the current being called for exceeds the current limit setting
- **Unit Size**—indicates the maximum rated current of the power controller
- **Max Volt**—indicates the maximum rated voltage for the power controller
- **V Aux**—indicates the voltage the auxiliary input is configured to use for powering the electronics
- **Input Type1**—indicates the type of signal analog input 1 is set to measure
- **Input Type2**—indicates the type of signal analog input 2 is set to measure
- **DI1**—indicates digital input 1's function
- **DI2**—indicates digital input 2's function
- **Firing**—indicates the firing type the power controller is set to use
- **Feedback**—indicates the type of feedback the power controller is set to use
- **Data Log**—indicates whether or not data is being logged by the power controller

NOTE! The data log indicator appears whether or not the connected power controller has the data logging option.

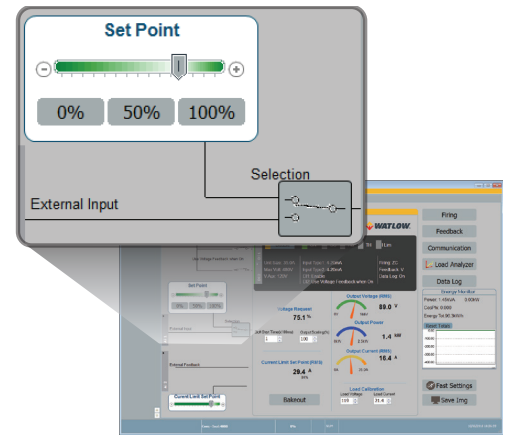
Use these buttons to access the setup options:

- **Communication**—view and set the options for the communication ports and protocols
- **Feedback**—view and set what is used for feedback
- **Firing**—view and set the firing type and the associated parameters
- **Load Analyzer**—view the graphing utility
- **Data Log**—click to open the Data Log window.



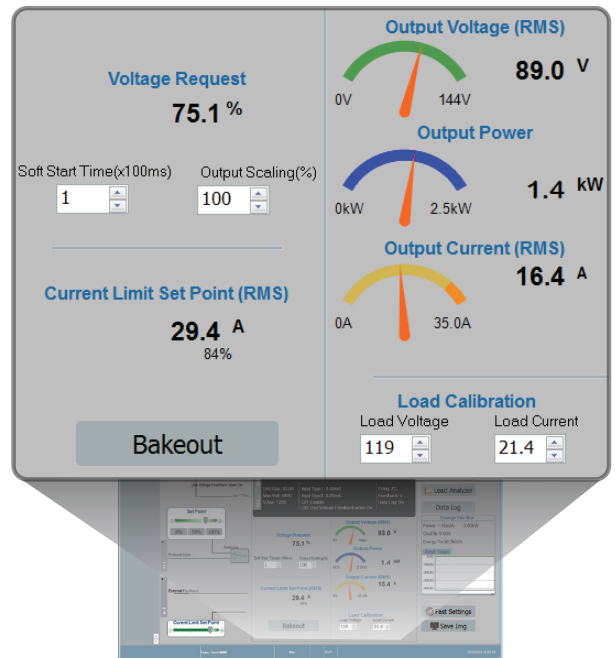
Use these features to configure and monitor the analog inputs:

- Analog Input 1—click Ai 1 to view the signal type
- **Input** button (Local/Remote set point source selector)—click to toggle between using the signal received at analog input 1 (remote) or the slider (local) to set the set point.
- **Set Point**—drag the slider, click the increment (+) or decrement (-) buttons or click one of the three percentages (0%, 50% or 100%) to set the set point when the set point source is set to local.
- Analog Input 2—click Ai 2 to view the signal type and function



Use these options to configure and monitor the power controller:

- **Power Request**—indicates the set point signal received via analog input 1 as a percent of full scale or as set with the reference slider
- **Soft Start Time**—indicates the time over which set point changes are ramped
- **Output Scaling**—indicates the scaling applied to the set point signal before it is used by the control loop
- **Output Voltage (RMS)**, **Output Power (RMS)** and **Output Current (RMS)** indicators—indicates the RMS current, RMS voltage and RMS power output by the power controller
- **Current Limit Set Point (RMS)**—indicates the current limit set point
- **Bakeout** button—click to view and set the heater bakeout feature options
- **Load Calibration**—set or view the nominal line voltage and nominal load current settings for the application.



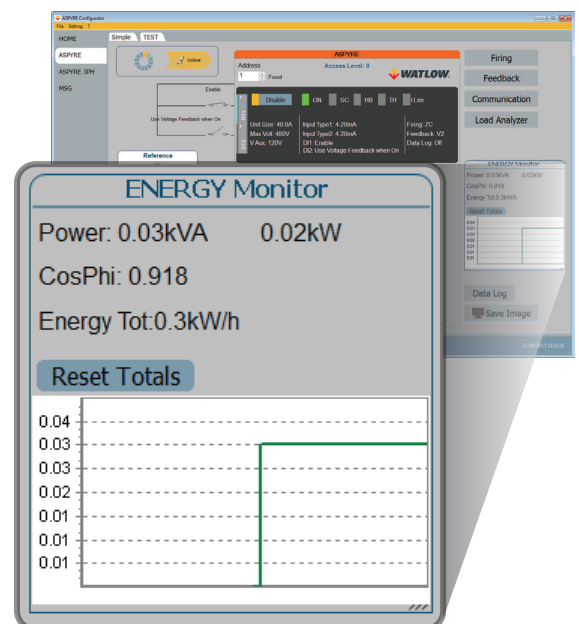
NOTE! The Load Calibration settings, Load Voltage and Load Current define 100% power for the load.

Energy Monitor—indicates power, power factor and energy usage over time which may be reset with the **Reset Totals** button.

Data Log—use to configure the data logging feature if present and retrieve data logs.

Fast Settings—opens the setup wizard.

Save Image—click to save a JPEG file with an image of the test view.



Load Analyzer (ASPYRE Scope)

Click **Load Analyzer** on the test view to open this window.

For each of up to three channels (Ch 1, Ch 2 and Ch 3) configure a pen on the graph:

- **On/Off** button—click to start trending data
- **PV**—choose the parameter to trend
- **Show**—set this option to display the trend
- **Show Mark**—set this option to display data markers along the trend in the graph area

Live!—click to view a detailed graph of the current in the Live! window.



Use the **History** options to control the movement of the chart

- Scroll left—click to move the chart left to view more recent data
- Stop/Play—click to toggle chart movement on and off
- Scroll right—click to move the chart right to view older data

Use the **Actions** to:

- **Clear**—click to clear the data from the graph
- **Save**—click to save a JPEG image of the ASPYRE Scope window with the current trends
- **Export**—click to open a window and that includes the trend graph and table with the currently displayed data that can be saved as a JPEG or exported to a CSV file.

Use the **X - Scale** settings to adjust the horizontal (time) axis:

- **Min**—set the number of minutes of data displayed
- **Sec**—set the number of seconds of data displayed
- **Filter**—set this option to filter the data

Use the **Y - Scale** settings to adjust the vertical (percent of full scale) axis

- **Max**—set the maximum value for the vertical axis
- **Reset**—click to reset the vertical axis scaling

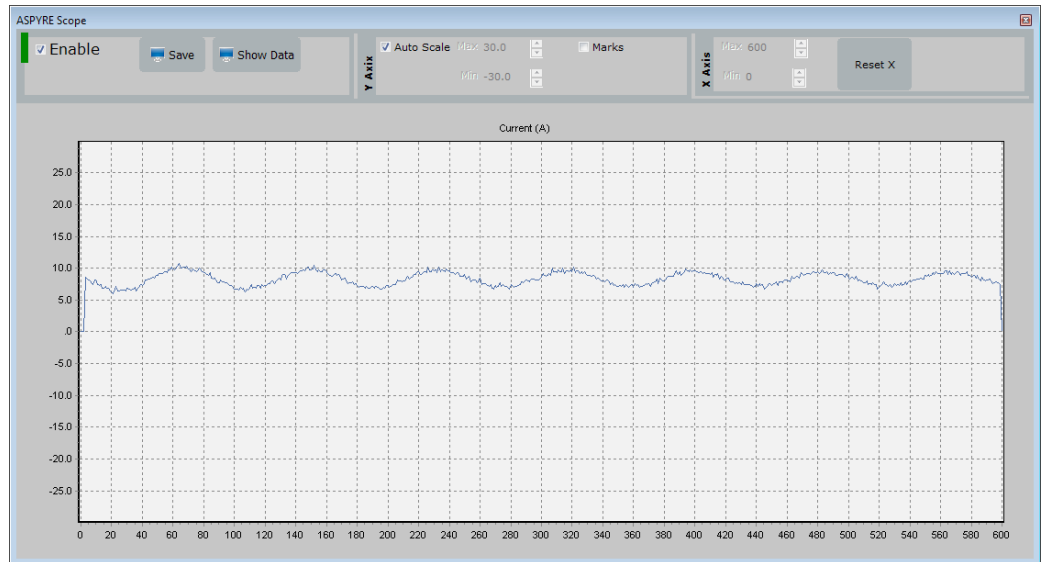
NOTE! Use the increment (up arrow) and decrement (down arrow) buttons to adjust the x and y scales. Numeric entry does not allow the full range of values to be set.

Live! Scope

This view provides a detailed graph of instantaneous current over a few sample cycles. The data updates automatically.

Use these options to configure the displayed data:

- **Enable**—set this option to view the current on the graph
- **Save**—click to save a JPEG image of the ASPYRE Scope window with the current trend
- **Show Data**—click to open the **Data** pane to the right of the graph that shows the data points for the current sample



Y Axis:

- **Auto Scale**—set this option to have ASPYRE Configurator automatically adjust the vertical and horizontal axis settings
- **Max**—set the high end of the vertical axis
- **Min**—set the low end of the vertical axis
- **Marks**—set this option to display data markers along the trend in the graph area

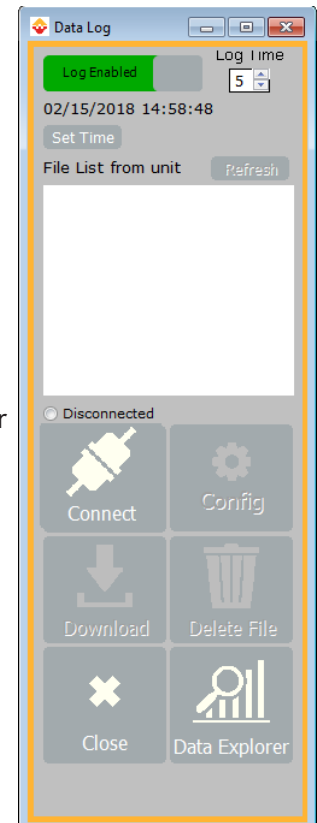
X Axis (future use):

- **Max**
- **Min**
- **Reset X**

Data Log Window

Use the data log window to set up data logging and manage the memory used for data log files in the power controller.

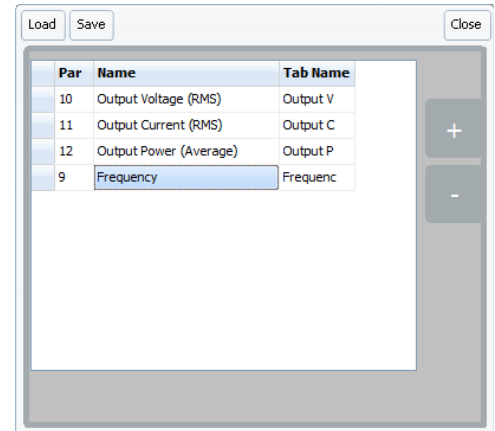
- **Log Enabled/Log Disabled** slider—starts and stops data logging. Must be set to *enabled* to configure logging or retrieve files.
- **Log Time**—the time between data log records in seconds
- **Config**—opens the data log configuration window
- **File List**—lists the data log files available in the power controller
- **Connect**—displays and allows downloading and deleting data log files in the power controller
- **Disconnect**—stops displaying data log files in the power controller
- **Download**—copies the selected file from the power controller to the computer
- **Delete File**—erases the selected file from the power controller
- **Close**—closes the **Data Log** window
- **Data Explorer**—expands the data explorer



Data Log Configuration window

Use the data log configuration window to view and set which parameters are logged.

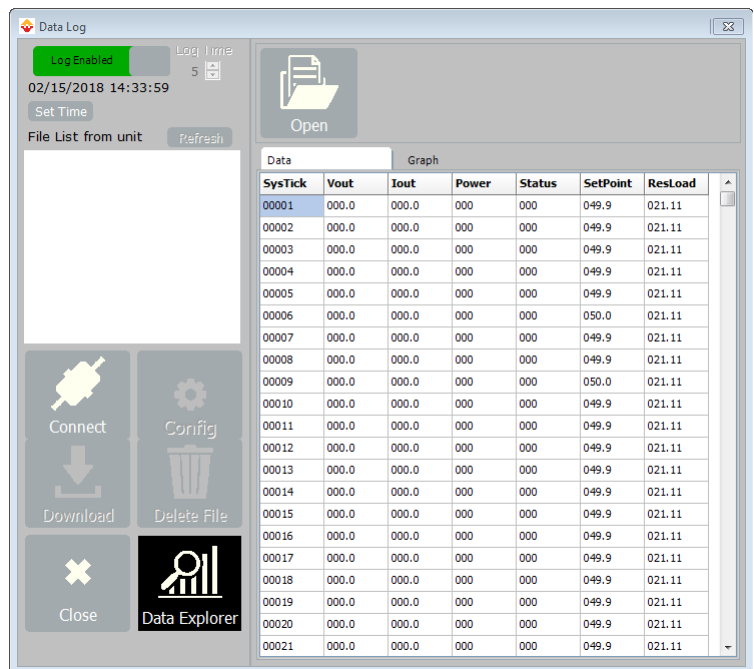
- **Close**—closes the window
- **Load**—reads and displays the list of parameters being logged
- **Logged parameters list**—the parameters being logged
- **Par**—view or enter the Modbus® address of the parameter to log
- **Name**—view or choose the name of a parameter to log
- **Tab Name**—view or enter the name of the logged parameter displayed in the log file
- **+** button—adds a row to the list
- **-** button—removes the last row from the list
- **Save**—sends the list of parameters to be logged to the controller



Data Explorer

Use the data explorer to view data logged in files that have been downloaded from the power controller.

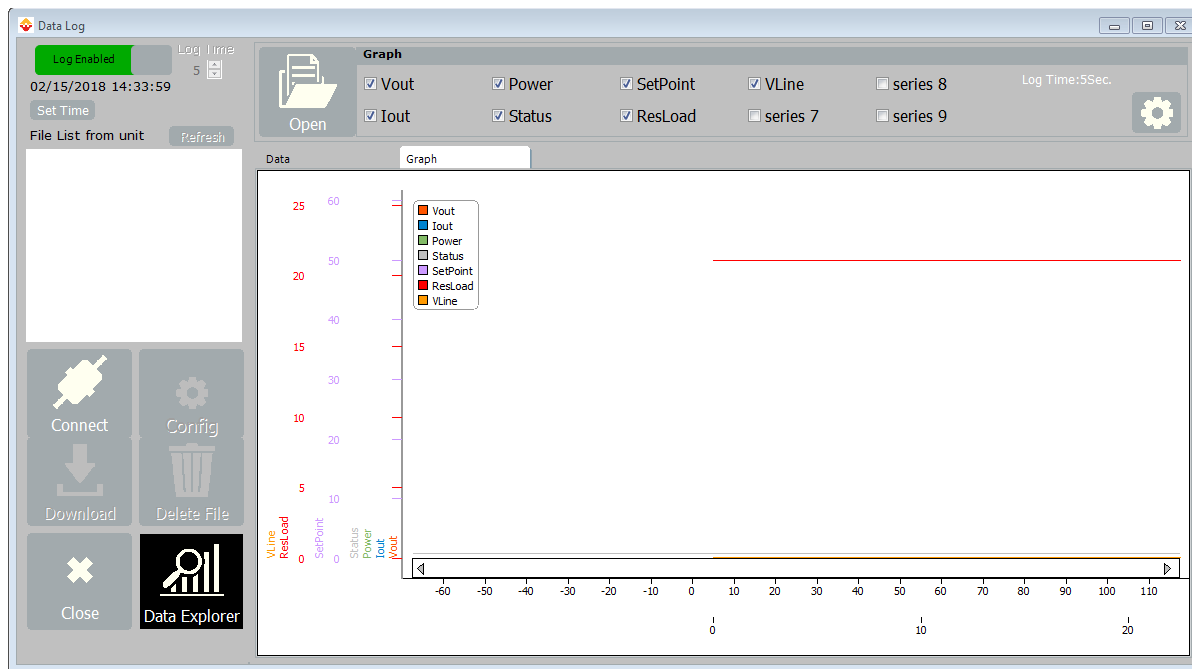
- **Open**—displays the open file dialog. Use this to open and display a data log that has been saved on the computer.
- **Data**—click to display the data from the log file in a table
- **Graph**—click to display the data from the log file in a graph
- **Data table**—displays the contents of the data log file.



Data Explorer Graph

Use the data explorer graph view data logged in files that have been downloaded from the power controller.

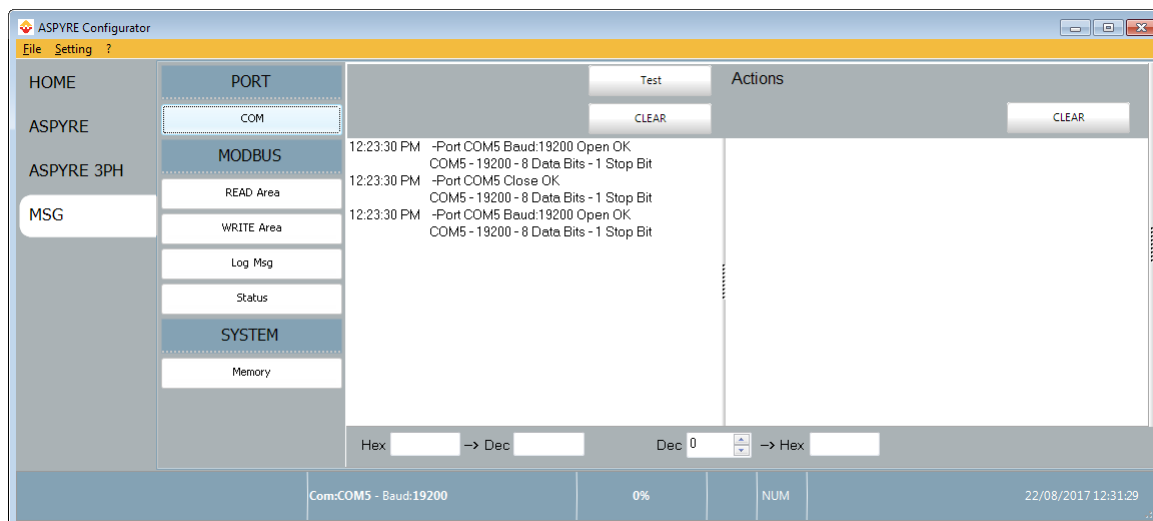
- Graph series check boxes—select the data to include on the graph.
- Settings (gear icon)—click to open the graph settings dialog to set the range of the graph and other options
- Graph—displays the contents of the data log file.



MSG view

Use the message view to monitor communication activity between the computer and the power controller.

- **PORT/COM**—view when the COM port is accessed and its settings
- **MODBUS/READ Area**—view the parameters being polled
- **MODBUS/WRITE Area**—view what parameters are being set and the values to which they are being set
- **MODBUS/Log Msg**—view the raw Modbus® messages (in hex) between ASPYRE Configurator and the power controller
- **MODBUS/Status**—view the status and settings of the COM port
- **SYSTEM/Memory**—view the memory usage of the ASPYRE Configurator program on the computer



Settings window

Use this window to choose user-settable options for the ASPYRE Configurator software. To open the Settings window, choose any of the items on the Settings menu, then select the tab you want.

Language:

- **Available Languages**—choose the language used in the program

Serial Port:

- **Test**—click to test for communication with a power controller via the selected port
- **Port**—select the computer’s COM port to use to communicate with power controllers
- **Baud rate**—select Auto to allow ASPYRE Configurator to set the baud rate for the COM port or deselect the option to set the baud rate yourself

Options:

- **List Options**—set whether or not parameter values are displayed in hexadecimal in simple view recipes
- **Directory**—set the directories in which recipes and images are saved
- **Disable Check Type**—set to allow communication with power controllers that are not precise matches for the supported types.

View:

- **Hide Tool Bar**—future use
- **Hide Status Bar**—select to hide the status bar that appears at the bottom of the program window.

