



CXC-HP Data Sharing: AC Priority AMPS HP2 as a Load on a Separately Managed DC system

Summary

All inverters should ideally have both an AC and DC input capability, and a transfer time that is minimal. When an AC power outage occurs, a correctly configured inverter will always revert to DC input (battery), regardless of whether it was setup in AC priority or DC priority. There may be varying transfer times depending upon the inverter used, in the case of the AMPS HP2 system, this transfer time is zero milliseconds.

The CXC HP controller can now measure DC current (using v6.0 or later) when connected to an AMPS HP2. The DC system can also calculate how much DC current the inverter system is expected to draw, should their AC input fail. The DC System uses both of these values to calculate the battery runtime remaining in all situations.

This MOP will detail how to simulate and anticipate the expected DC burden upon the battery in advance of an AC power outage event, and alarm based on user defined thresholds that can be easily programmed.

Safety

Review the safety instructions in the CXC HP Controller Software and Cordex HP Controller and I/O Peripherals Manuals. Disclaimer: It is assumed you are familiar with the operation of the CXC HP Controller and have authorization to do so. For more information about the operation of the CXC HP Controller, refer to the software operating manual.

Equipment or Tools Necessary

- Computer with connection to the internet
- Two CXC HP Controller with software v6.00 installed

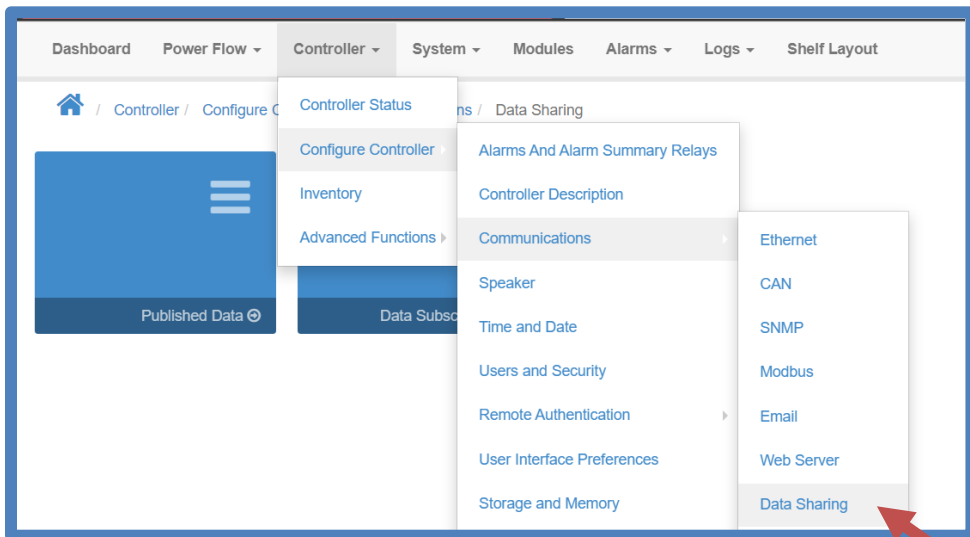
Preparation

Review CXC HP Controller Software Manual section 15.3.10 and 5.4.2. Make sure to have the IP addresses for the controllers of both systems readily available.

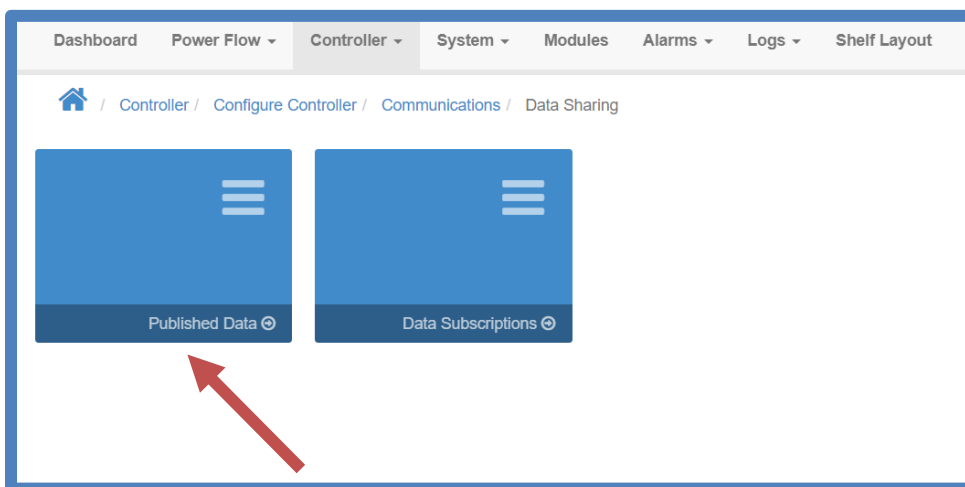
Making your AMPS Inverter System’s Data Visible to your DC System’s CXC HP Controller

When we want to share data from one controller to another, we say we are publishing the data. Data publishing is done from the **AMPS controller**.

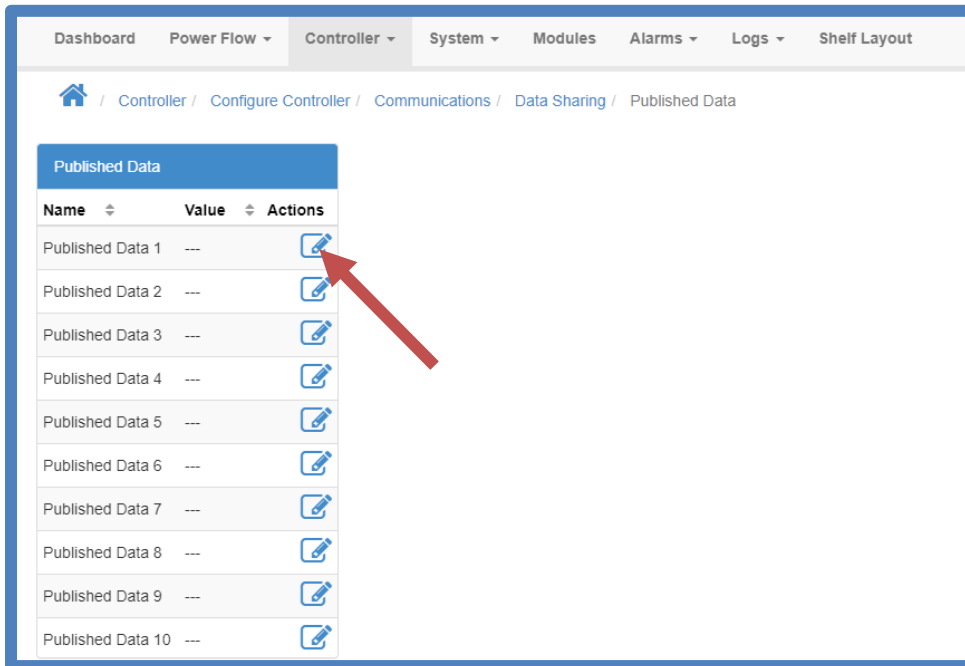
1. Go to **Controller > Configure Controller > Communications > Data Sharing**



2. Go to **Published Data**

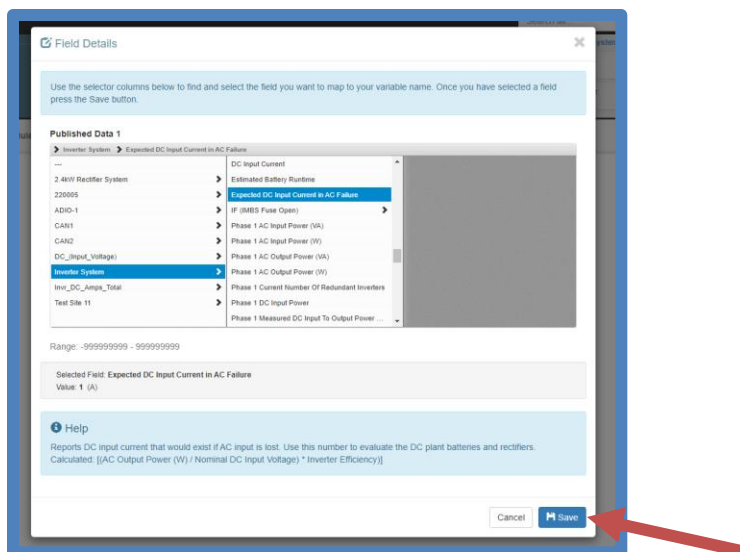


- Click on the **Edit** button to select what data you would like to **publish**



- Select what data needs to be published and click **save**.

To determine an accurate runtime prediction, go to **inverter system>Expected DC Input Current in AC Failure**



5. The **Published Data** from the **AMPS system** will appear in the label as shown:

The screenshot shows a web interface with a navigation menu at the top: Dashboard, Power Flow, Controller, System, Modules, Alarms, Logs, Shelf Layout. Below the menu is a breadcrumb trail: Home / Controller / Configure Controller / Communications / Data Sharing / Published Data. The main content area is titled 'Published Data' and contains a table with the following structure:

Name	Value	Actions
Published Data 1	Inverter System: Expected DC Input Current in AC Failure	[Edit]
Published Data 2	---	[Edit]
Published Data 3	---	[Edit]
Published Data 4	---	[Edit]
Published Data 5	---	[Edit]
Published Data 6	---	[Edit]
Published Data 7	---	[Edit]
Published Data 8	---	[Edit]
Published Data 9	---	[Edit]
Published Data 10	---	[Edit]

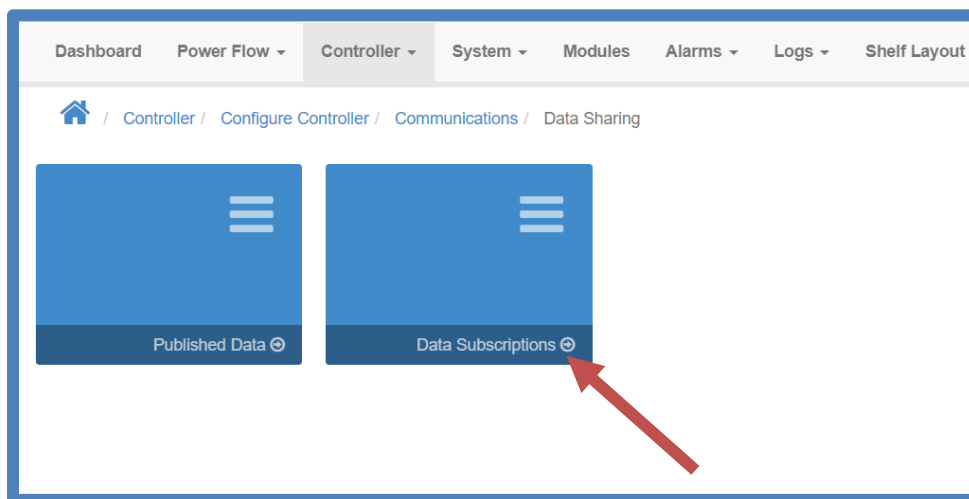
A red arrow points to the 'Actions' column of the first row.

Locating your AMPS Inverter System's data from your DC System's Controller

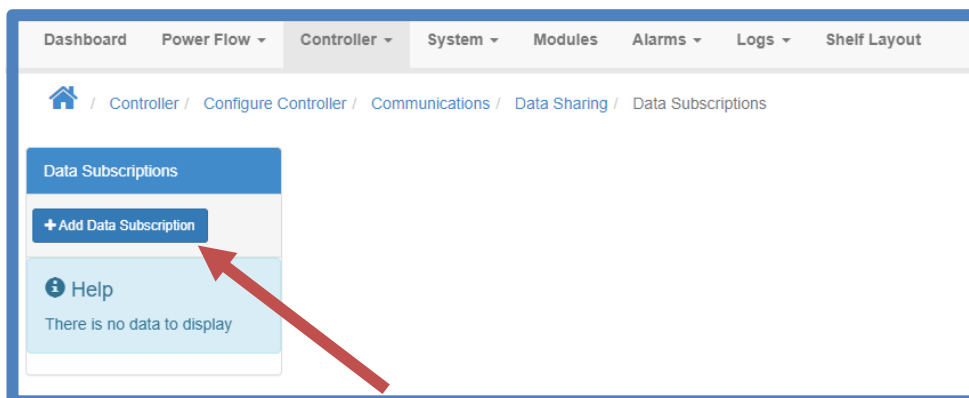
When you want to locate the data that was published from another CXC HP Controller, we say we are **subscribing** to that **published data**.

For the **AMPS – DC System** data sharing, you would **log out** of the **AMPS controller** and login to the **DC System Controller**. Data subscriptions are done from the **DC system controller**

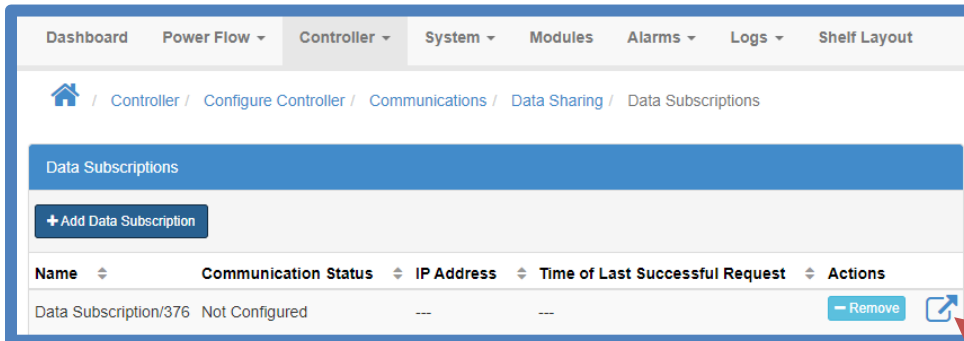
1. Click on **Data Subscriptions**



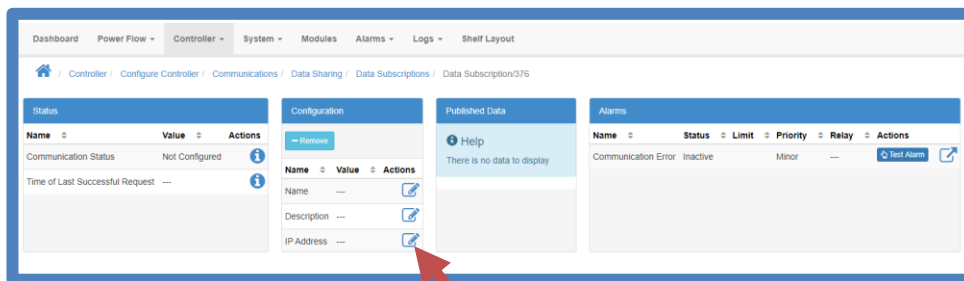
2. Click on **Add Data Subscription**



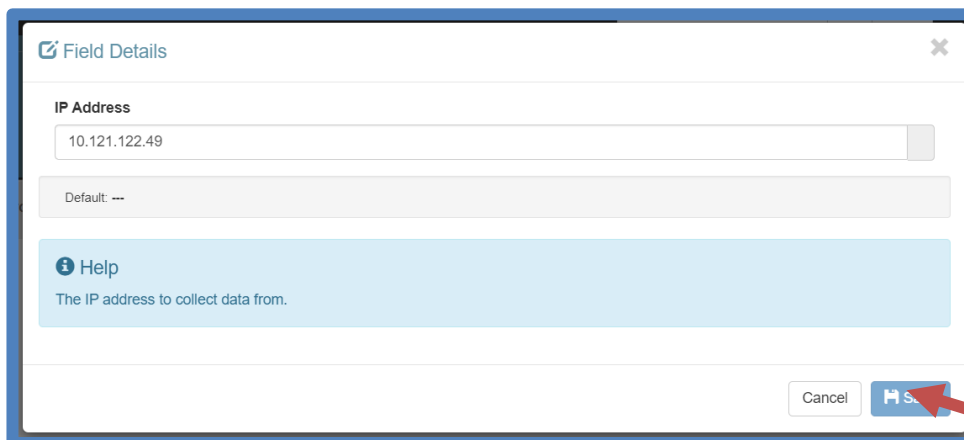
- Click on the **configure** button to subscribe to another **controller's data**



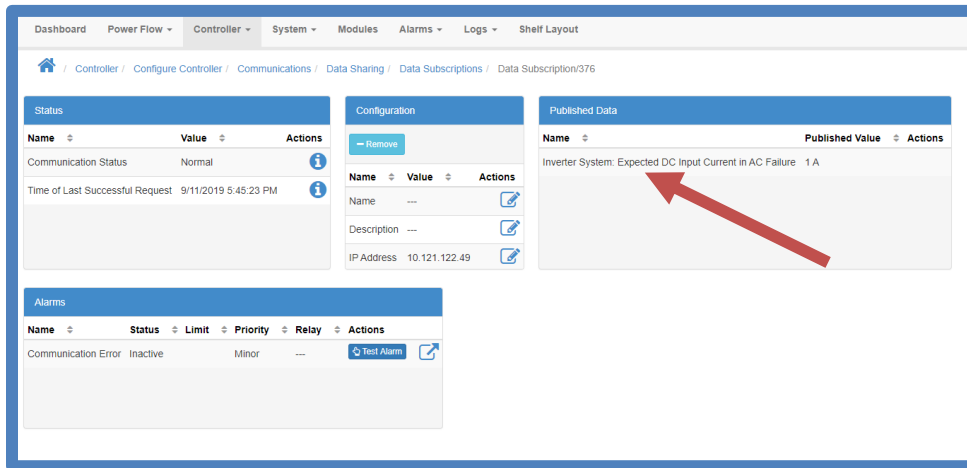
- Add the **IP Address** of the controller you want to subscribe to.
For the **AMPS – DC system** data sharing, this would be the **IP address** of the **AMPS controller**



- Type in the **IP Address** into the field and click **Save**



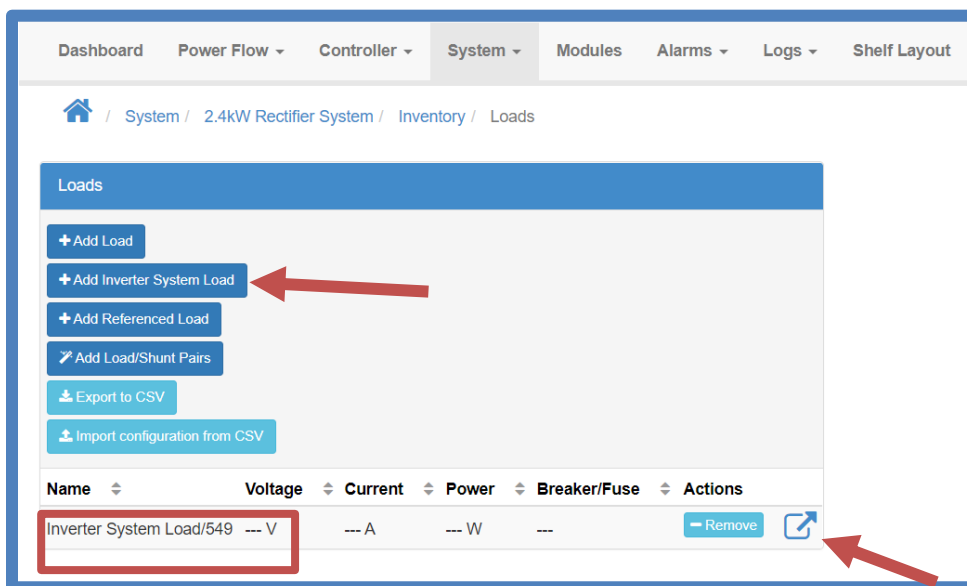
- Once you add the **IP Address**, the data published from the **AMPS controller** will appear



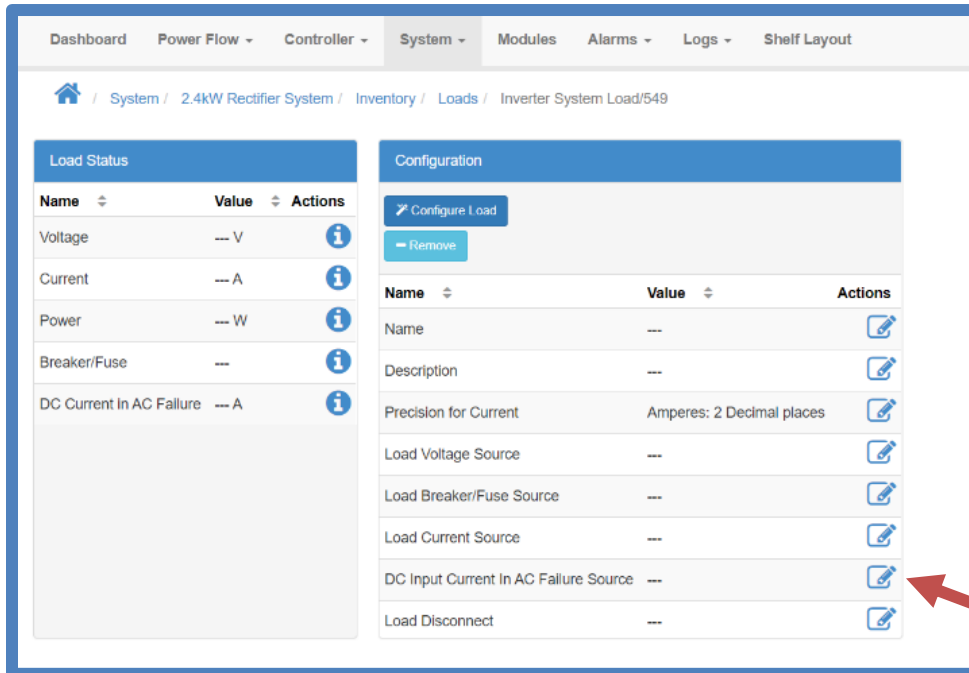
Add an inverter system load

Once the data is published from the 1st controller and the 2nd controller is subscribed to the published data, you can view the **battery runtime prediction**.

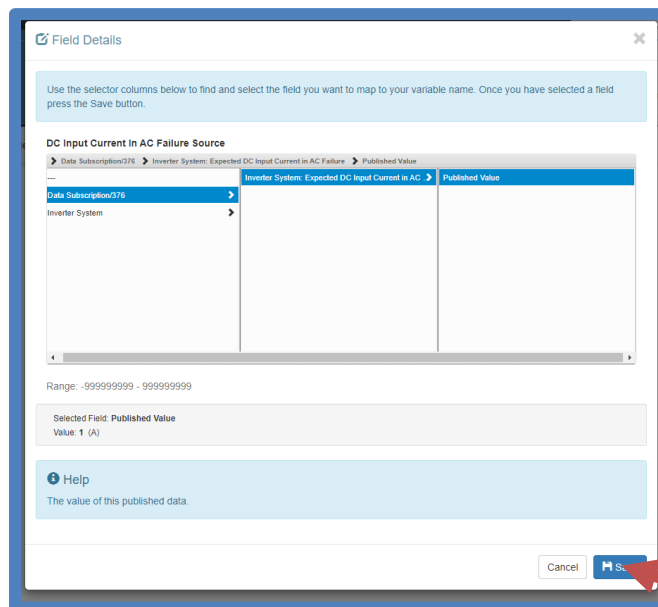
- To do this go to **System>2.4kW Rectifier System>Inventory> Loads** and click the **Add Load** button. An **Inverter System Load** will appear at the bottom of the page, click on the **config** button



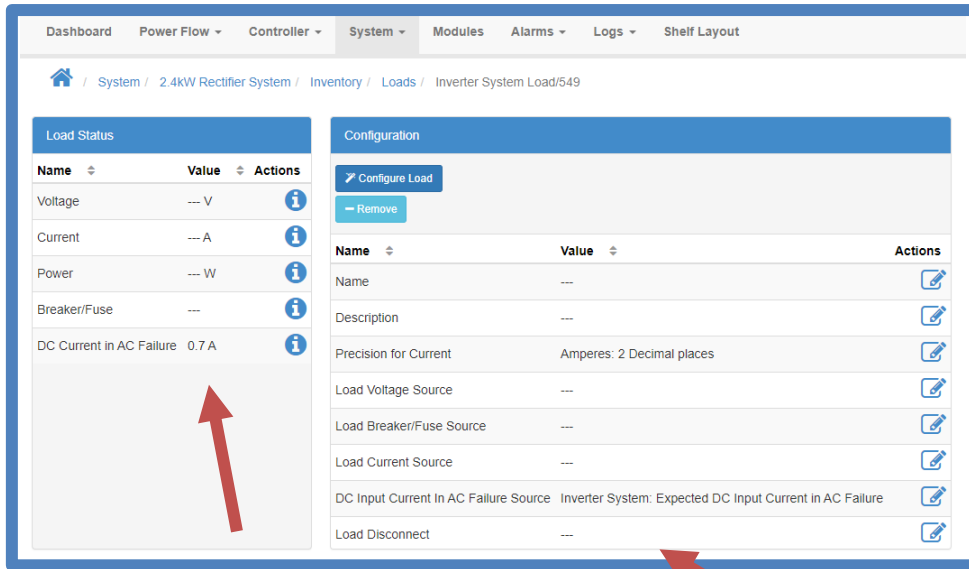
2. Click on the **Edit** button to add a **DC Input Current in AC Failure Source**



3. To use the published click on **Data Subscription/XXX>Inverter System: Expected DC Input Current in AC>Published Value** and click **Save**

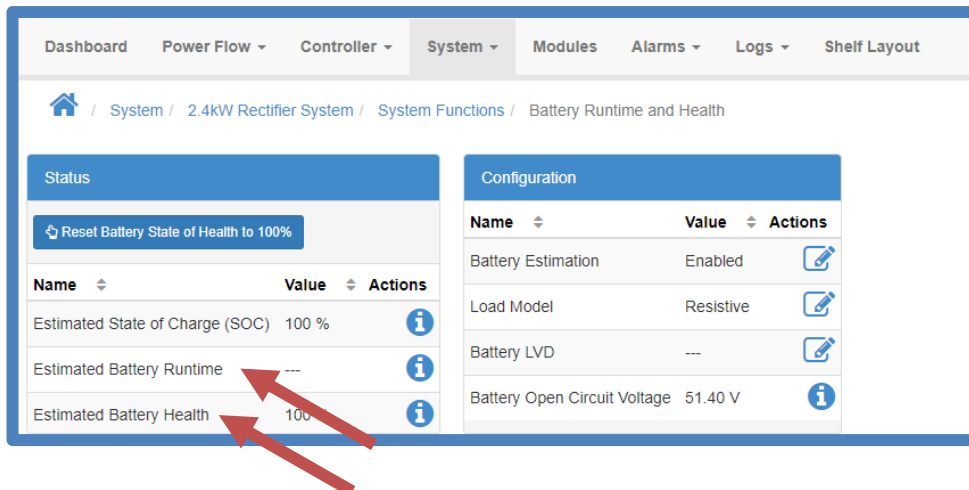


4. The **published data** and the **DC current in AC failure** will appear on the screen



5. To view the **Battery Runtime Prediction**, go to **System>2.4kW Rectifier System>System Functions>Battery Runtime and Health**

From the here you can view the **Estimated Battery Runtime** and **Estimated Battery Health**

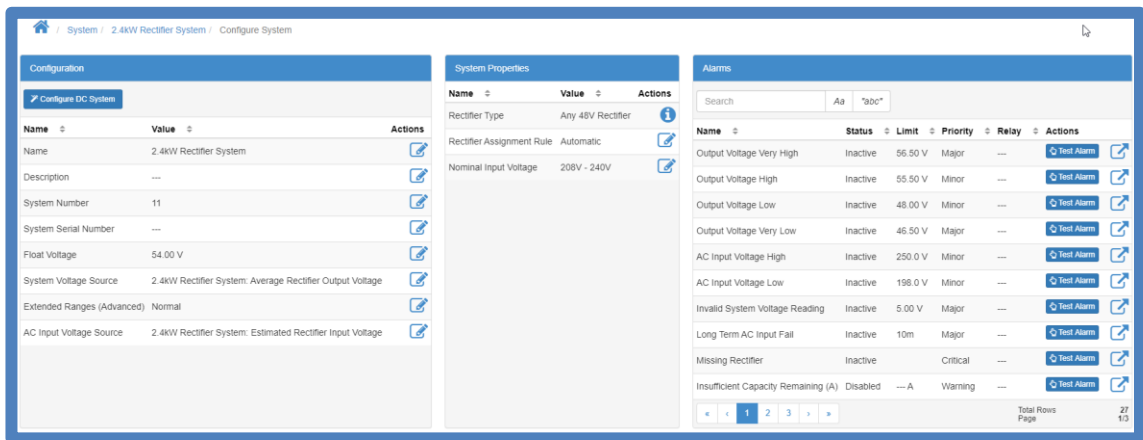


Setting minimum battery runtime threshold alarm

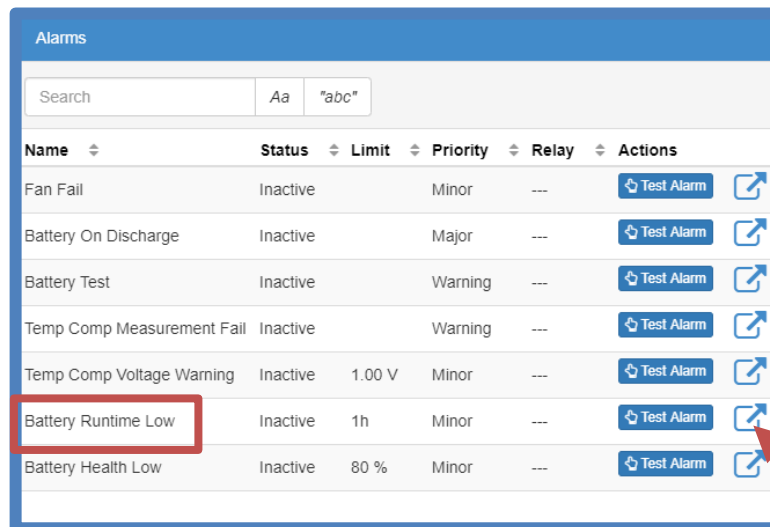
Setting a **Battery Runtime Low Alarm** is important because it enables the controller to raise an alert when the battery runtime reaches a certain point. This point is a time threshold and is customizable to the user.

It is recommended to set the alarm to activate when the battery runtime remaining is still greater than the time it takes a field service technician to reach the site. If the power outage will last longer than the batteries allow for, you can plan for an operator to arrive at the site before the battery's shutoff.

- To do this go to the **DC System Controller** and go to **System>2.4kW Rectifier System>Configure System**



- Go to the **Alarms** table and find the **Battery Runtime Low** alarm. Click on the **configure** button to customize the alarm



3. Edit the **alarm** according the requirements of your systems. Click **save** to all changes made

The screenshot shows the 'Battery Runtime Low' configuration interface. It includes a 'Test Alarm' button, a search bar, and a table of configuration items. Three callout boxes with red arrows point to specific items in the table:

- Edit Alarm priority between minor, major and critical:** Points to the 'Battery Runtime Low Priority' row, which currently has a value of 'Minor'.
- Edit battery runtime allowed before alarm activates:** Points to the 'Battery Runtime Low Limit' row, which currently has a value of '1h'.
- Edit time allowed before alarm activates:** Points to the 'Battery Runtime Low Hysteresis' row, which currently has a value of '5m'.

Name	Value	Actions
Battery Runtime Low	Inactive	
Battery Runtime Low Time of Activation	---	
Battery Runtime Low Time of Acknowledgement	---	
Battery Runtime Low Alarm Processing	Enabled	
Battery Runtime Low Priority	Minor	
Battery Runtime Low Parameter 1	---	
Battery Runtime Low Custom Name (Parameter 2)	---	
Battery Runtime Low Relay	---	
Battery Runtime Low Limit	1h	
Battery Runtime Low Hysteresis	5m	

End of Method of Procedures

For assistance, contact Alpha Technical Support:

Toll Free North America: 1-888-462-7487

International: +1-604-436-5547

Monday - Friday, 7:00 AM - 5:00 PM PST for regular inquires

24/7 for emergency support

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