SAVANT

# Savant Power Storage App Setup Guide

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- This document guides the installer through the process of comissioning a Savant Power Storage System using the **Savant Power Storage (SPS) app**.
- This document supports the Savant Power Storage (SPS) app version 3.0.5 and higher and Savant Power Storage inverters running firmware version 1.4.8 and higher.

⚠ **IMPORTANT:** As part of initial system deployment, installers must contact Savant Support for assistance with Power Storage Inverter firmware upgrade.


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# 1. App Setup

## Download App

The Savant Power Storage inverter app can be downloaded directly from the Apple App Store or Google Play Store. Search for **Savant Power Storage** or scan the QR Codes to the right.

**Savant Power Storage App (Apple App Store)**

**Savant Power Storage App (Google Play Store)**

## Create Account

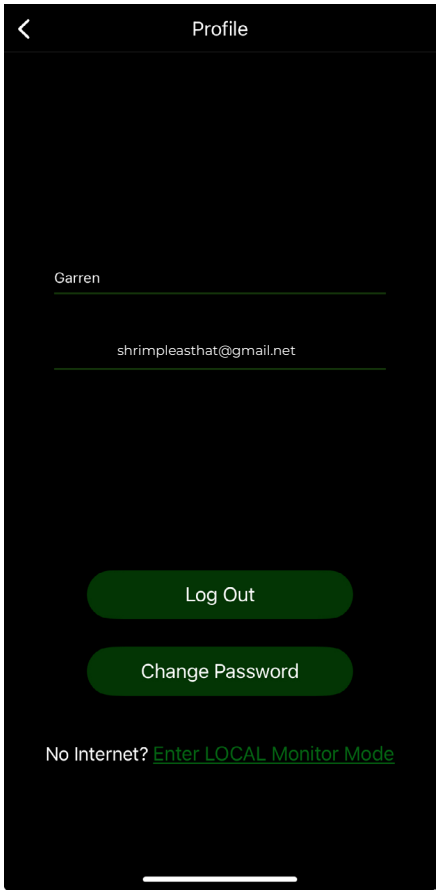
**IMPORTANT:** This guide assumes the first person to begin deployment and access the Savant Power Storage Inverter using the Savant Power Storage app is the installer.

Upon downloading the app, new users will need to create an account. By default, users are given limited permissions within the app. Contact Savant Support to obtain installer level privileges, which enable full configuration capabilities when deploying a system.

**NOTES:**

- Additional accounts created may not have sufficient permissions to be able to access all settings listed in this guide
- A maximum of 5 accounts can be associated to a Savant Power Storage system

**HELPFUL TIP:** Savant recommends configuring the installer app account before traveling to site to avoid downtime while waiting for account privileges to be granted





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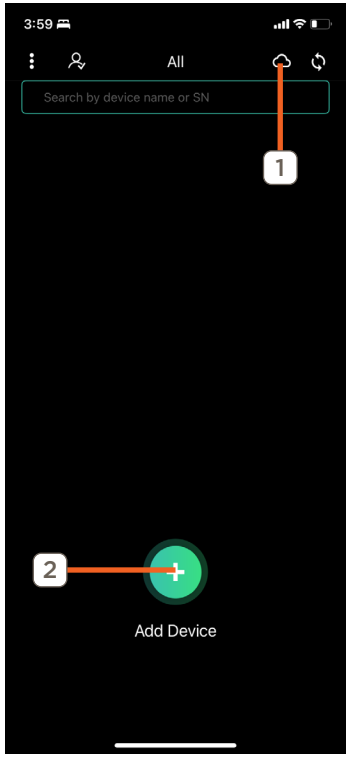
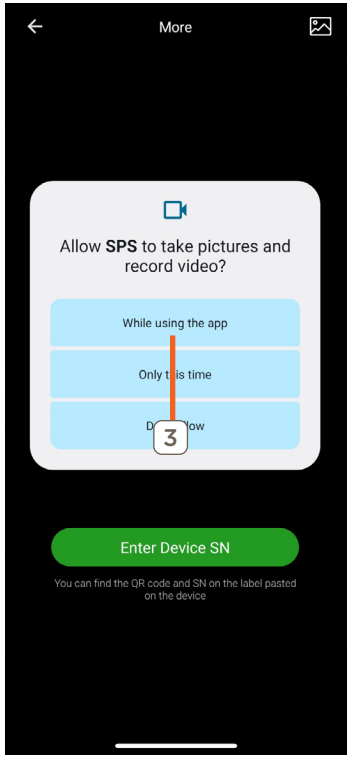
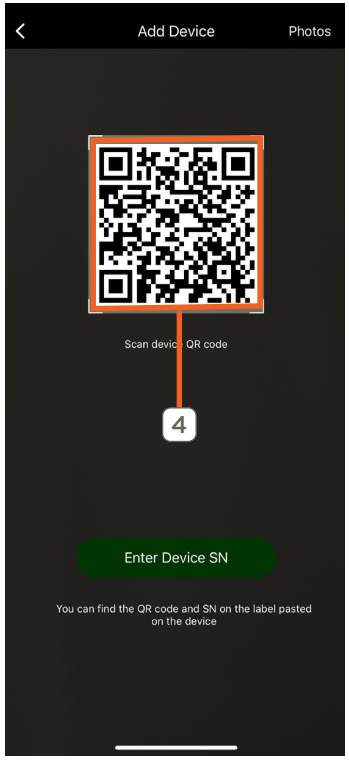
## 1.1. Add Device

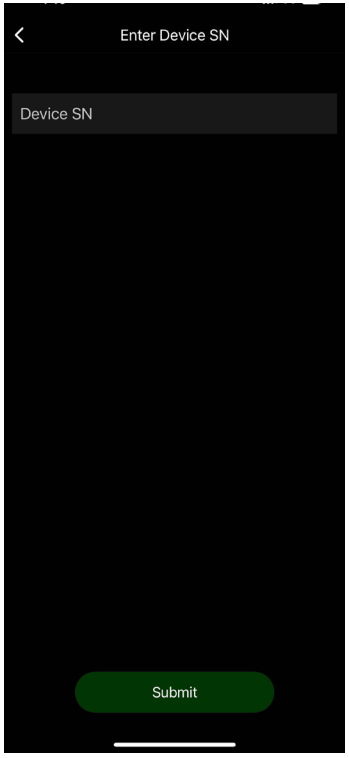
Each Savant Power Storage inverter must be added as a device within the Savant Power Storage inverter app.




OR




1 **WIFI ONLY:** Toggle The Cloud icon to Local Area Network

2 Select **Add Device**

3 Allow the SPS app camera permissions

4 Scan serial number QR Code on the side of the Power Storage Inverter

OR

Enter Device Serial Number (S/N) located on the right side and select Submit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# 2. Network Configuration

The Savant Power Storage System requires a connection from the inverter to a local area network with access to the internet to recieve **Over-The-Air** (OTA) updates.

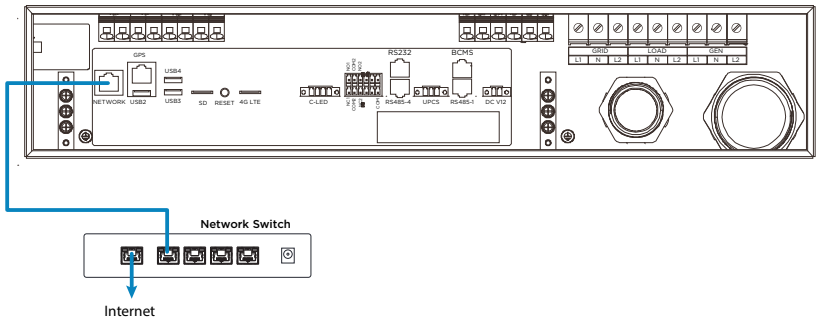
1. Start the Savant Power Storage System according to the system boot sequence in the installation manual.
2. Wait until the network indicator on the inverter turns green.
3. Follow the **Wired** section below or the Wireless section on the next page to configure the relevant network connection type.

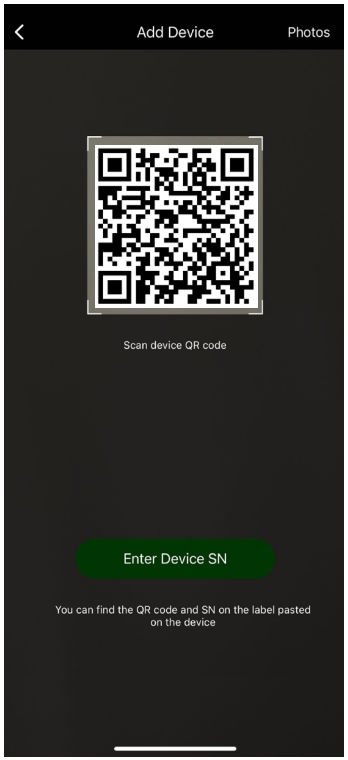
## 2.1. Wired (Recommended)

1. Connect a LAN port of the router to the network port of the Savant Power Storage inverter using an ethernet cable.
2. Scan the QR Code on the right side of the Savant Power Storage inverter.
3. Select **Wired/Other.**

### Savant Power Storage Inverter

1




2 Scan the QR Code on the left of the Savant Power Storage unit




3 Select Wired/Other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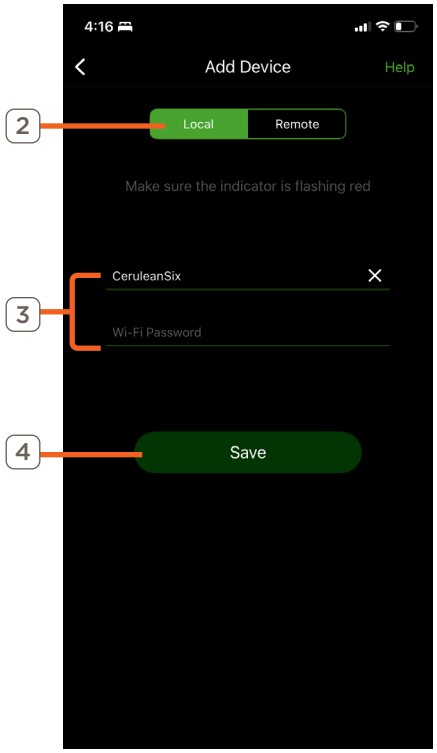
## 2.2. Wireless (Not Recommended)

Press the **RESET** button on the left side of the system for 5 seconds until indicator flashes red to reset the system before beginning wireless configuration.



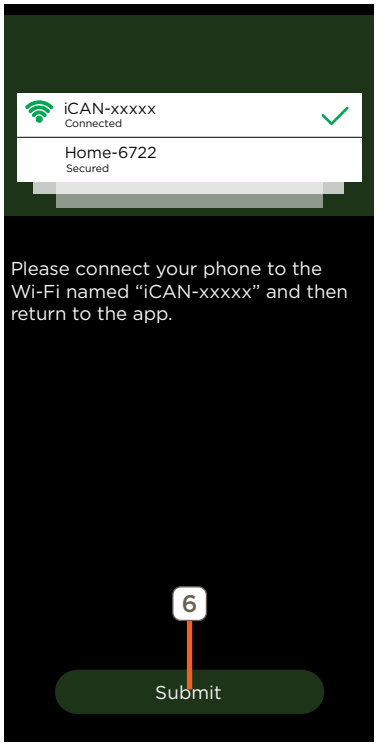

1 Select **Wi-Fi**




2 Toggle **Local** for Local Areal Network credentials or **Remote** for Remote Access network credentials

3 Enter network credentials

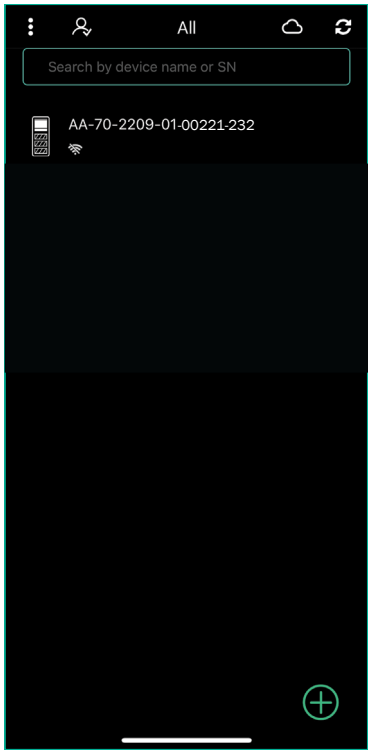
4 Select **Save**




4 Minimize the Savant Power Storage app

5 Connect the mobile devce’s Wi-Fi to the network titled **ICAN-xxxxx**

6 Reopen the SPS app and select **Submit**




7 The inverter serial number appears on the Associated Devices screen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# 3. Configuration Steps


1. Configure System Information ☐
2. Parallel System Configuration (Multiple Inverters Only) ☐
3. Battery Operation ☐
4. Applicable Power Sources ☐
   - 4.1 DC Coupled Solar ☐
   - 4.2 Generator ☐
   - 4.3 AC Coupled Solar ☐
   - 4.4 Smart Rectifier ☐
5. Interconnection Settings ☐
   - 5.1 Grid Settings ☐
   - 5.2 PCS Control System Settings ☐
   - 5.3 Panel Limit ☐




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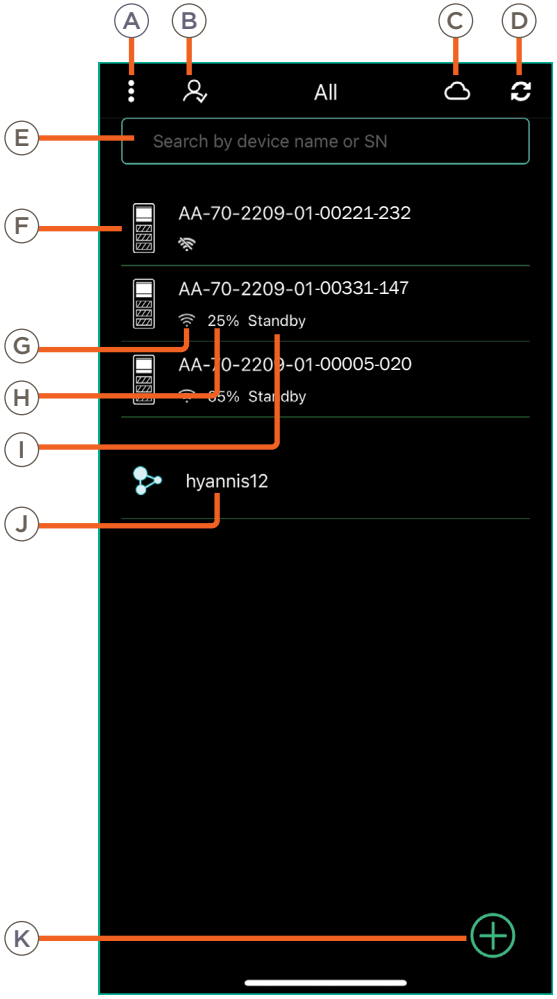
# 4. Associated Devices Overview

Associated Devices displays all Savant Power Storage systems, sorted by inverter, the account has access to. The table below describes the information displayed on this screen




| | Setting | Description |
|---|---|---|
| A | More | Access more information about the Savant Power Storage inverter app, including:<br>- Messages<br>- Create Groups<br>- Feedback<br>- Account Deletion<br>- About |
| B | Profiles | - Log Out<br>- Change Password |
| C | Connection Mode | Toggle between connection modes:<br>- : **Internet Access Mode**: Both the Power Storage and the iOS or Android device must have an internet connection<br>- : **Local Area Network Mode**: Both the Power Storage and the iOS or Android device are on the same local area network |
| D | Refresh | Re-discover inverters |
| E | Search Bar | Search through inverters by name or serial number |
| F | Device ID | Inverter Serial Number |
| G | Connection | Inverter connection status |
| H | Battery SOC | Battery State of Charge (SOC) |
| I | Battery Status | Charging, discharging, or standby |
| J | Group | Custom grouping of systems |
| K | Add Device | Add a Savant Power Storage inverter |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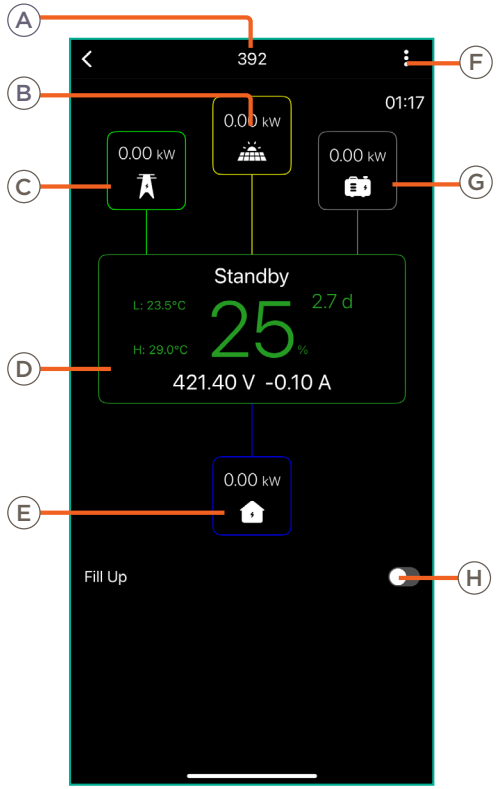
## 4.1. Power Overview

The Power Overview screen displays realtime power import and export statistics sorted by source.

**IMPORTANT:** All information and settings listed here are relevant to the individual inverter




| | Setting | Description |
|---|---|---|
| A | Device Name | Name of the inverter |
| B | Solar Production (DC) | Realtime solar production |
| C | Grid Consumption | Total energy consumption of all loads from the grid in kW |
| D | Current Battery State | **Charging or Discharging** - Whether the battery is currently charging or discharging |
| | | **State of Charge** - Remaining battery capacity in percentage |
| | | **Time** - Approximate time left until battery reaches 0% SOC<br>Note: this may change depending on load conditions |
| | | **V & A** - Battery voltage and amperage |
| E | Load Consumption | Total energy consumption for all loads in kW |
| F | Settings | Savant Power Storage Inverter Settings<br>**HELPFUL!:** All further configuration is done within this menu |
| G | Generator Input | Realtime generator power production in kW |
| H | Fill Up | Enable to manually force the Savant Power Storage inverter to charge the batteries to 100%<br>**IMPORTANT:** Review the site utilities interconnection agreement before enabling. Charging the battery using grid power may be prohibited |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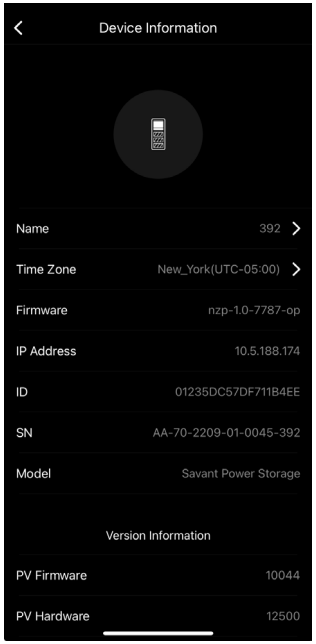
# 5. System Information

## 5.1. Device Information

To access Device Information, navigate to **Settings > System Information > Device Information**. Device Information contains important information such as the following:

- Device Name
- Time zone
- Serial number
- IP Address
- Battery Cycles

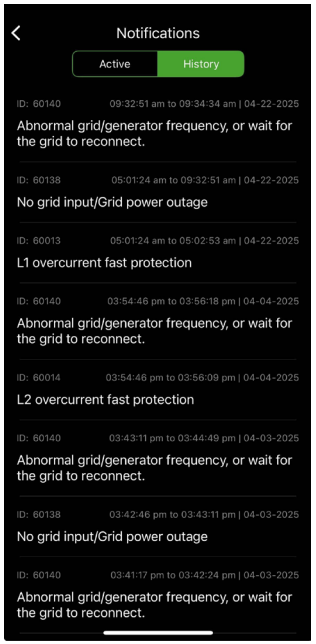
⚠ **IMPORTANT: Device Name** and **Time Zone** must both be set before continuing.




## 5.2. Notifications

The Savant Power Storage app monitors the system status and reports changes in behaviors as **Notifications**. Notifications are divided into **Active** and **History** sub menus.

- Toggle to **Active** to display all active real time notifications.
- Toggle to **History** to display all changes in behavior in reverse chronological order. Scroll down to see older notifications.





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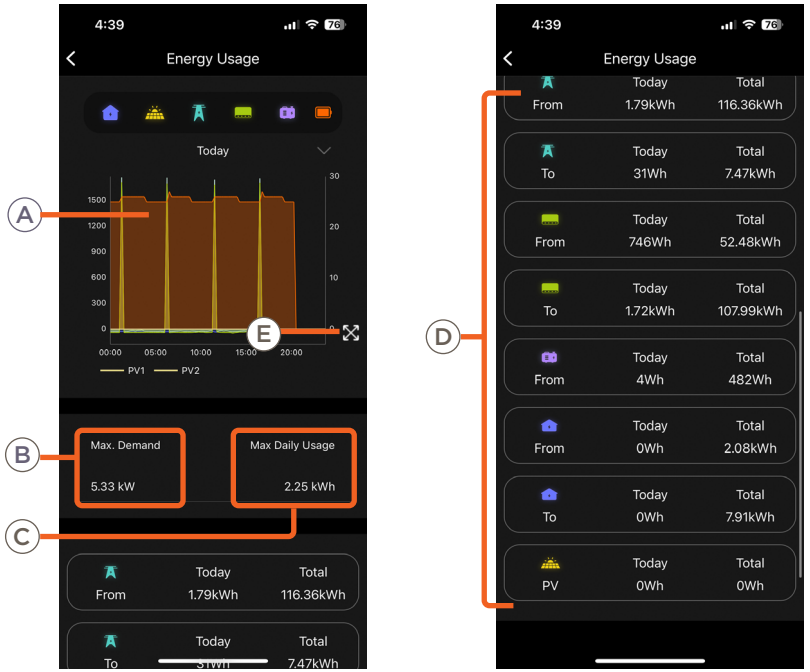
## 5.3. Energy Usage

Energy Usage displays system production and consumption data for all power sources connected to the Savant Power Storage inverter.

| | Setting | Description |
|---|---|---|
| A | Energy Usage Graph | All energy sources and consumption over time.<br>Toggle individual power source visibility on the energy usage graph using Power Source icons |
| B | Max Demand | Highest total load consumption recorded, in kW |
| C | Daily Usage | Average total load consumption per day in kWh |
| D | Summary | Detailed total and energy transactions for all power sources |
| E | Expand | Click the ⤢ icon to view the graph in full screen |



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# 6. Parallel & Shared Battery

Enabling Parallel System Configuration allows multiple Savant Power Storage Inverters to function in parallel. A parellel system always has one Leader inverter and may have several Follower inverters. Shared Battery configuration allows two inverters to share a single battery stack. To access this menu, navigate to **Settings > Parallel & Shared Battery**. Then configure according to inverter hierarchy as described below.

**IMPORTANT NOTES:**

- Parallel & Shared Battery settings are not translated to other inverters automatically. Complete these steps for each inverter in sequence.
- Inverters must be connected to each other using the Parallel System port on the left side with termination connectors at each end.

## 6.1. Leader Inverter

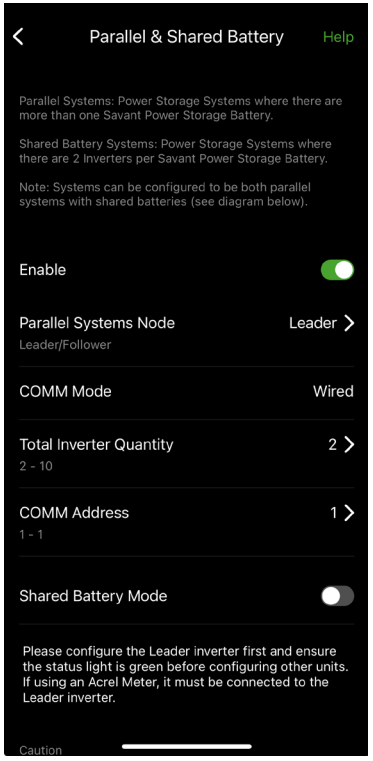
Program the leader inverter first. It is most commonly the first or last inverter in the parallel chain, and is connected to the acrel meter. See the relevant Savant Power Storage (20/50) Installation Manual for more details.

1. Enable **Parallel System**.
2. Set the Control Mode to **Leader**. This will set the COMM Address to 1.
3. Set the COMM Mode to **Wired**.
4. Set the **Total Inverter Quantity** to the number of paralleled inverters.
5. If two Savant Power Storage inverters share a battery stack, enable **Shared Battery Mode.** Shared Battery Mode automatically controls the rate at which the inverters will charge the shared battery.

   Refer to the table below for charge rates per-inverter:

| | Power Storage 20 | Power Storage 50 |
|---|---|---|
| One Inverter per Battery Stack | 6.5kW | 25kW |
| Two Inverters per Battery Stack | 3.25kW | 12.5kW |

Once all follower units have been configured, the leader unit will display each configured follower at the bottom of the screen.





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## 6.2. Follower Inverters.

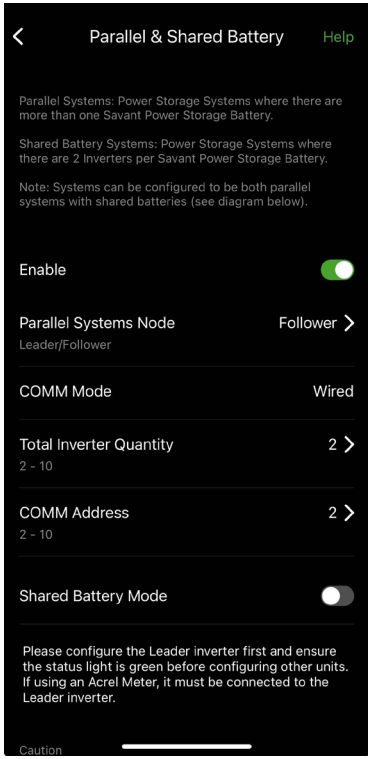
1. Enable **Parallel System.**
2. Set the Control Mode to **Follower**. This will set the COMM Address to 2 or higher, according to the number of inverters in parallel. Each inverter must have a unique COMM address.

   **NOTE**: When using Shared Battery Mode in parallel, the COMM Address should increment in pairs; i.e. inverters 1&2 share one battery stack, 3&4 share the second battery stack, etc.

3. Set the COMM Mode to **Wired**
4. Set the **Total Inverter Quantity** to the number of paralleled inverters
5. If two Savant Power Storage inverter units share a battery stack, enable **Shared Battery Mode.** This mode controls the charge rate if the inverter shares the connected battery stack with another inverter

| | Power Storage 20 | Power Storage 50 |
|---|---|---|
| One Inverter per Battery Stack | 6.5kW | 25kW |
| Two Inverters per Battery Stack | 3.25kW | 12.5kW |

Once all follower units have been configured, the leader unit will display each configured follower at the bottom of the screen.





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# 7. Battery Operation

**Battery Operation** is used to configure system operating parameters according to site usage goals and utility rate plans. From the **Power Overview** menu, select **Settings > Battery Operation**.

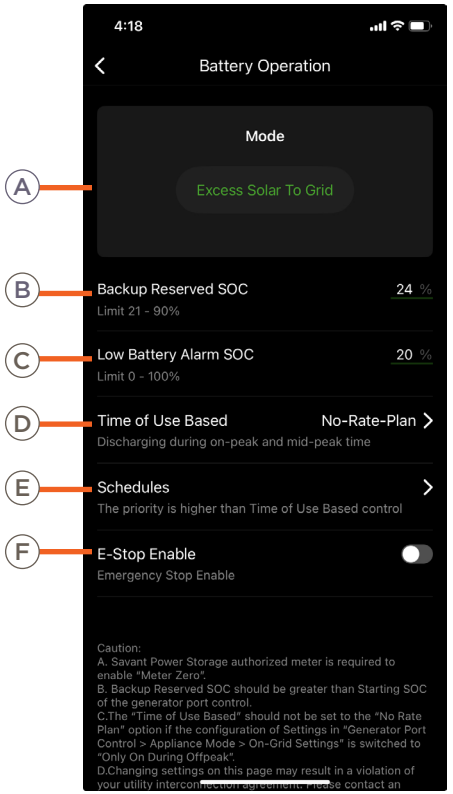
**IMPORTANT:** The Power Storage System will use the following priority to power connected loads. The system will prioritize using solar to offset loads before charging the battery:

## Powering Loads

1. DC Coupled Solar
2. Battery Power (until Backup Reserved is met)
3. Utility Power

**NOTE:** If sufficient solar is available, batteries will charge to 100% before exporting (if applicable), and discharge to the Backup Reserved State of Charge.

| | Setting | Description |
|---|---|---|
| A | Power Modes | See Power Modes. |
| B | Backup Reserved SOC | User-configured minimum State of Charge (SOC) the Savant Power Storage System will discharge to when operating on grid. This controls the following behavior:<br>– **On Grid:** When sufficient solar power is not available, the battery offsets loads until the Backup Reserved SOC is met. Loads are then powered by utility power. The battery will attempt to charge when sufficient solar power becomes available.<br>– **Off Grid:** The battery will continue to power loads until 0%. Backup Reserved SOC is not utilized in this use case.<br>– **Grid Outage:** The battery will continue to power loads until 0%. When utility power returns, the battery will charge up to the Backup Reserved SOC. The battery will finish charging to maximum battery SOC using solar energy if available.<br>**NOTE:** Certain features, such as Storm Watch, disregard the Backup Reserved SOC setting and will prioritize charging the battery to 100%. |
| C | Low Battery Alarm SOC | The battery SOC at which the Power Overview Current Battery State color will change to indicate low battery charge. |
| D | Time of Use Based | Configure system Time of Use (ToU) settings for battery useage. If the desired rate plan is not listed, multiple generic options exist under the **OTHER** category. Contact Savant Support for assistance if setting a ToU plan. |
| E | Schedules | Configure battery use according to schedules. Schedules override TOU settings. If none of the options meet system requirements, contact Savant Support to build a custom schedule using the Schedules tool. |




**IMPORTANT!:** Contact Savant Support if the site requires more advanced charging and discharging logic.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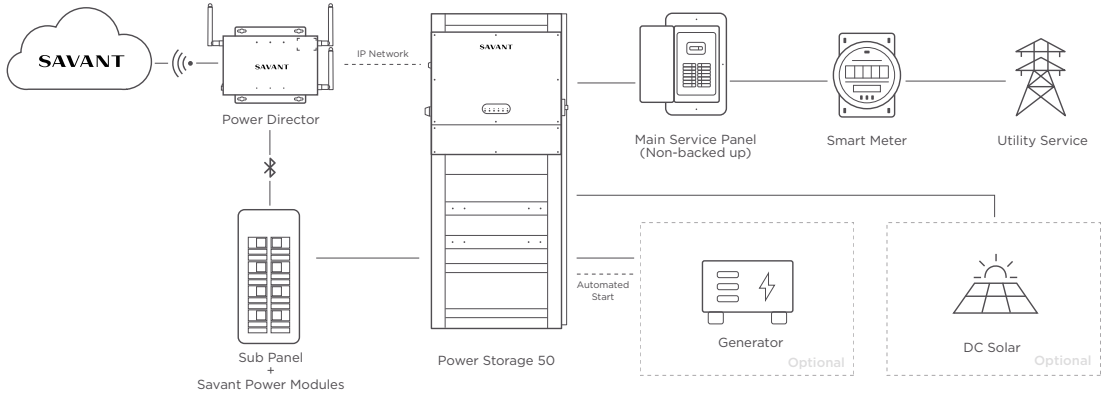
## 7.1. Power Modes

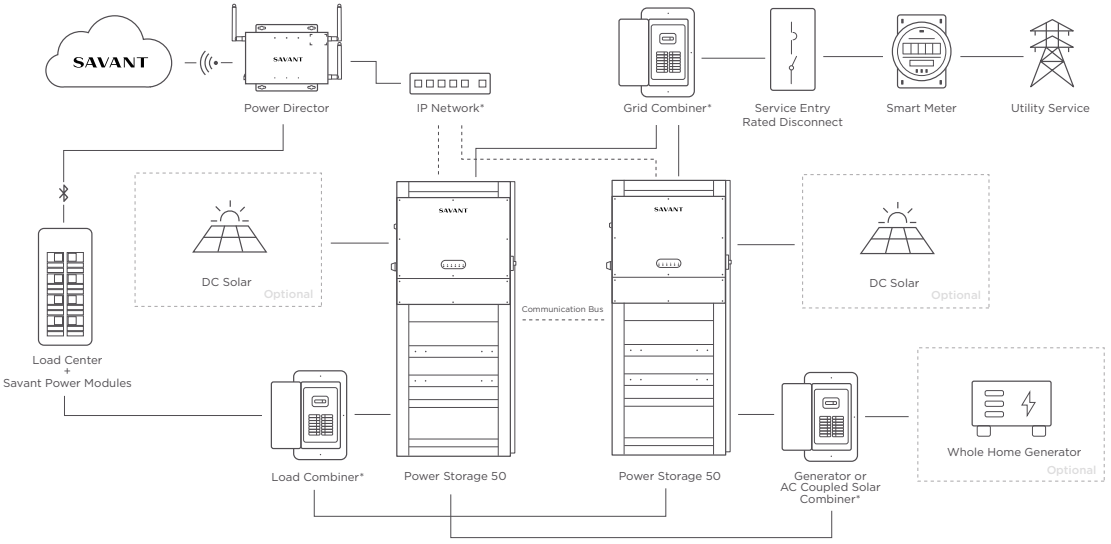
Power Modes control inverter and battery behavior while on grid to optimize efficiency and cost savings.

| Mode | Description |
|---|---|
| Self Sufficiency | Prioritizes powering backed up loads with solar and battery. If battery falls below Back up Reserved SOC, loads are offset by utility power.<br>Battery will charge when solar production is greater than backed up loads. Excess DC coupled solar will not be sold back to grid.<br>**NOTE:** Self Sufficiency Mode can be used with an Acrel meter to power non backed up loads |
| Meter Zero | Prioritizes powering backed up and non backed up loads with solar and battery. If battery falls below Back up Reserved SoC, loads are offset by utility power.<br>Battery will charge when solar production is greater than backed up loads. Excess DC coupled solar will not be sold back to grid.<br>AC coupled solar can not be controlled in Meter Zero and may be exported to the grid.<br>⚠ **IMPORTANT:** Requires the use of an **Acrel AGF-AE-D/200** meter. See the applicable **Savant Power Storage 20/50 Installation Manual** for further instruction. |
| Excess Solar to Grid | Prioritizes powering backed up loads with solar and battery. If battery falls below Back up Reserved SoC, loads are offset by utility power.<br>When DC coupled solar production exceeds demand of loads and battery consumption, excess energy is exported to the grid. |

PARTIAL HOME BACKUP / SINGLE UNIT APPLICATION




WHOLE HOME BACKUP / STACKED APPLICATION





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# 8. Power Sources

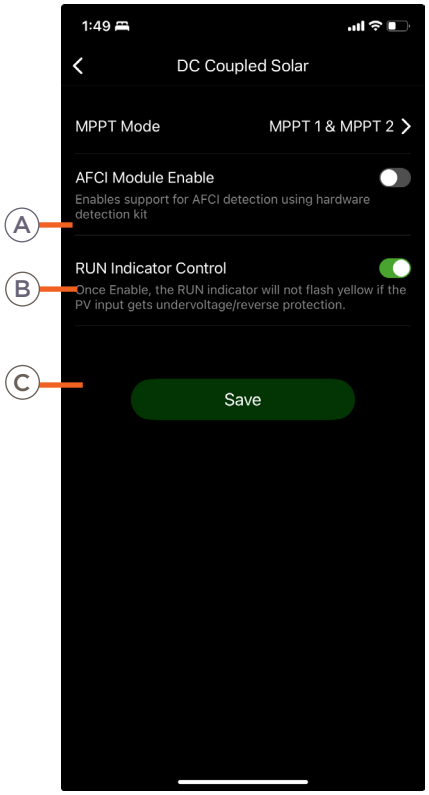
Enable the power sources under the **Settings > Connected Power Sources** submenu matching the power sources installed onsite.

**IMPORTANT:** Read and follow all relevant documentation and installation guides before continuing.

## 8.1. DC Coupled Solar

DC Coupled Solar settings are configured under **Settings > Connected Power Sources > DC Coupled Solar**

| | Setting | Description |
|---|---|---|
| A | MPPT Mode | Choose which MPPTs are used |
| B | AFCI Module | Toggle to indicate whether AFCI Modules are installed<br>**NOTE**: Refer to relevant installation manual for further information on AFCI operation |
| C | RUN Indicator Control | When disabled, the inverter RUN indicator will flash when PV is undervoltage or offline<br>**NOTE**: It is recommended that this setting remain enabled |





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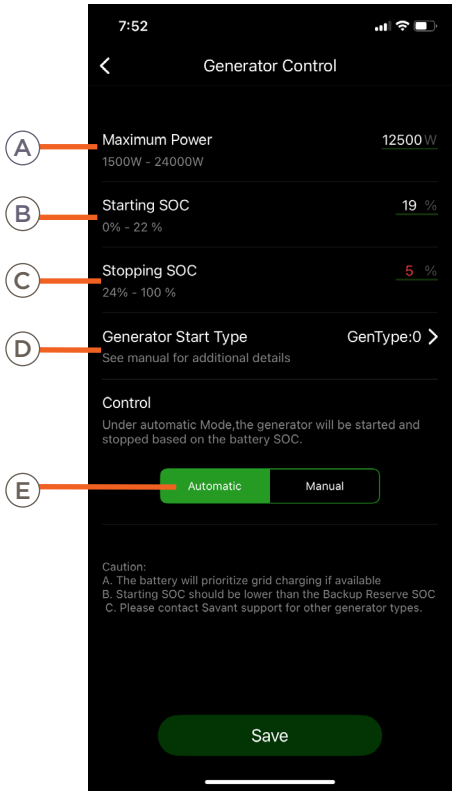
## 8.2. Generator Port Control

Navigate to **Settings > Connected Power Sources > Generator Control** to configure generator settings.

**IMPORTANT:** Refer to the relevant **Savant Power Storage 20/50 Installation Guide** for instructions on wiring a generator before continuing. All generator manufacturer requirements must be met during the installation process.

| | Setting | Description |
|---|---|---|
| A | Maximum Power | The maximum output of the generator based on continuous current draw from generator, up to 100A |
| B | Starting SOC (Automatic Only) | The battery state of charge at which the Savant Power System commands the generator to start |
| C | Stopping SOC (Automatic Only) | The battery state of charge at which the Savant Power System commands the generator to stop |
| D | Generator Start Type (Read Only) | The Savant Power Storage inverter supports 2-wire start generators. See the applicable **Savant Power Storage Inverter Installation Guide** for more information |
| E | Control | **Automatic -** (Off Grid Only) Automatically send start and stop commands to the generator based on battery SOC |
| | | **Manual -** (Off Grid Only) Manually start the generator. For diagnostic purposes only |




**IMPORTANT NOTES:**

- Do not exceed the output power rated for the generator
- Follow all generator manufacturer's guidelines
- Generator operation is only supported for off grid use
- Adjusting the SOC setting in this menu will impact and automatically adjust the **Backup Reserved SOC** parameter in the **Battery Operation** menu - the Backup Reserved SOC must be higher than or equal to the Generator Starting SOC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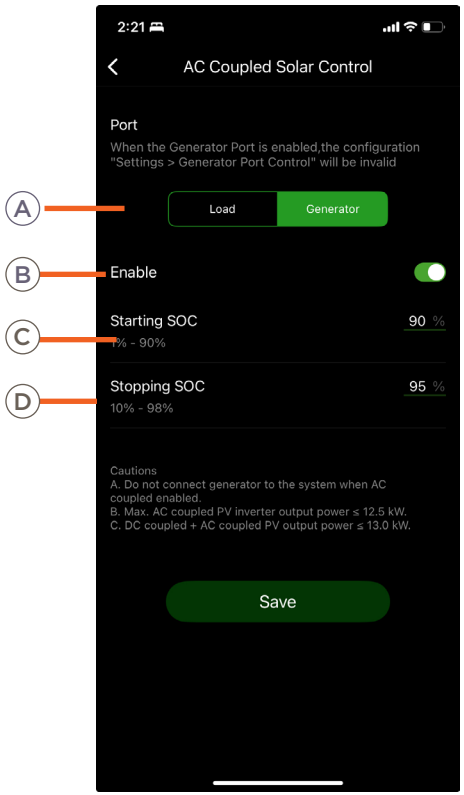
## 8.3. AC Coupled Solar Control

⚠ **IMPORTANT!:** Complete all AC solar wiring listed in the applicable **Savant Power Storage Installation Guide** before enabling AC Coupled Solar Control.

Configure the fields below to control AC solar behavior.

| | Setting | Description |
|---|---|---|
| Ⓐ | Load or Generator | Select Load or Generator port for AC Solar input<br>**NOTE**: AC coupled solar is only supported on the Load port in single-inverter installations |
| Ⓑ | Enable | Enable or Disable AC solar input |
| Ⓒ | Starting SOC | The SOC threshold the battery must reach before the inverter starts charging the battery using AC solar |
| Ⓓ | Stopping SOC | The SOC threshold the battery must reach before the inverter stops charging the battery using AC solar |




**IMPORTANT NOTES:**

- The inverter cannot control export of AC coupled solar power to the grid
- The Starting SOC is always at least 5% lower than the Stopping SOC
- Both the **AC Coupled Solar Control Starting & Stopping SOC** and the **Generator Starting and Stopping SOC** override the **Battery Operation Backup Reserved SOC** when enabled

## 8.4. Smart Rectifier Control

For system designs incorporating smart rectifier control, contact **Savant Support** for assistance before proceeding..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# 9. Interconnection Settings

## 9.1. Grid Settings

1. Use the left and right arrow to select the appropriate interconnection requirements per guidance from local utility.
2. Adjust voltage and frequency ride throughs by selecting the parameter requiring adjustment. Only underlined settings may be configured

**IMPORTANT NOTES:**

- Utility grid operators may require interconnection settings unique to the site. Refer to local interconnection guidelines to confirm the appropriate settings
- Only qualified personnel should edit Interconnection settings.
- Incorrect interconnection settings could void **Permission To Operate** (PTO) from local utilities
- The inverter must be restarted after changing any parameter
- If none of the settings provided match the configuration requested by a utility, contact to **Savant Support**

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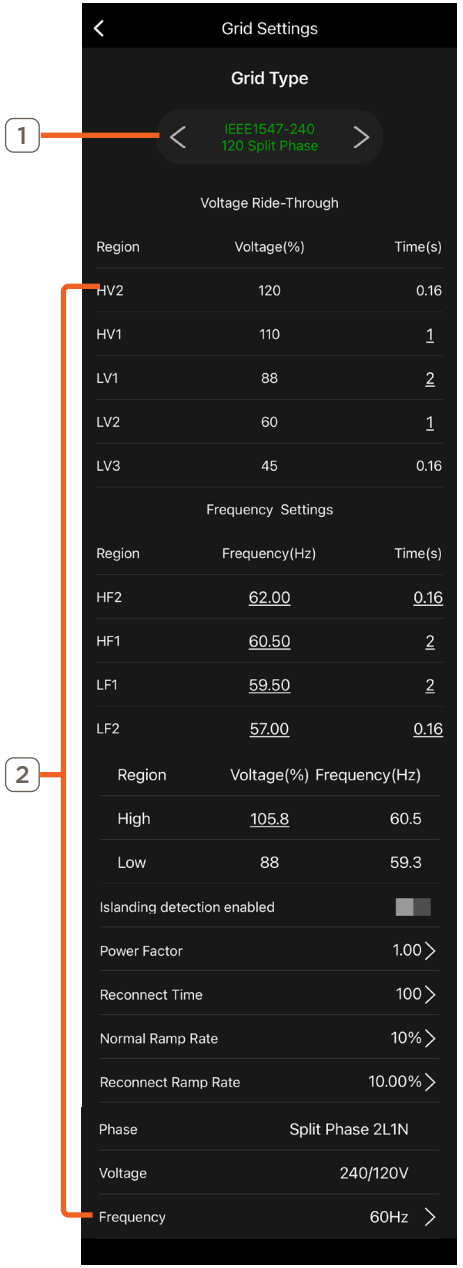



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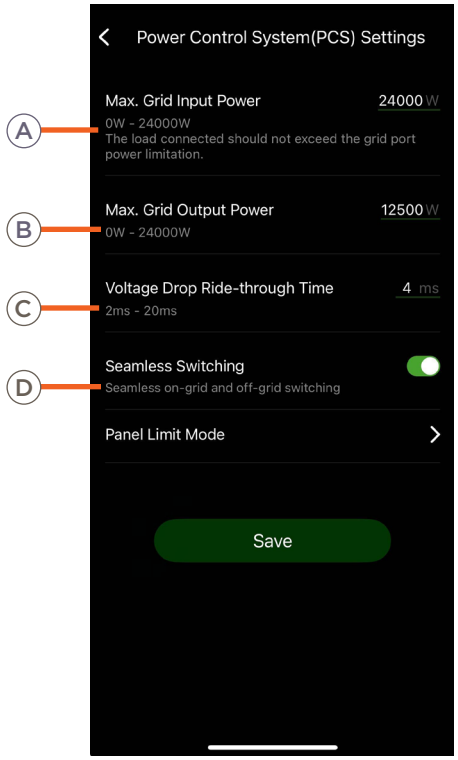
## 9.2. Power Control Systems (PCS) Settings

| | Setting | Description |
|---|---|---|
| Ⓐ | Max Grid Input Power | Maximum load support when on grid. Setting to 24000W is highly recommended. If the system was previously configured with a value of less than 24000W, contact Savant Support.<br>⚠ **IMPORTANT:** Setting to a value lower than 24000W may discharge the battery to offset home loads during normal operation - depleting the battery. |
| Ⓑ | Max Grid Output Power | Maximum system export rate to grid in W<br>⚠ **IMPORTANT:** Setting to 0 will prevent solar and battery power from being exported to the grid. |
| Ⓒ | Voltage Drop Ride Through Time | Time the system will wait before switching off grid. In locations with larger voltage fluctuations, it is recommended to increase the Ride Through Time. Check with local utility before making modifications.<br>Recommended setting: 4ms |
| Ⓓ | Seamless Switching | Optimizes transfer time when switching off grid. Enabling this setting is recommended. |




⚠ **IMPORTANT:** Settings must be uniform across all parallel inverters.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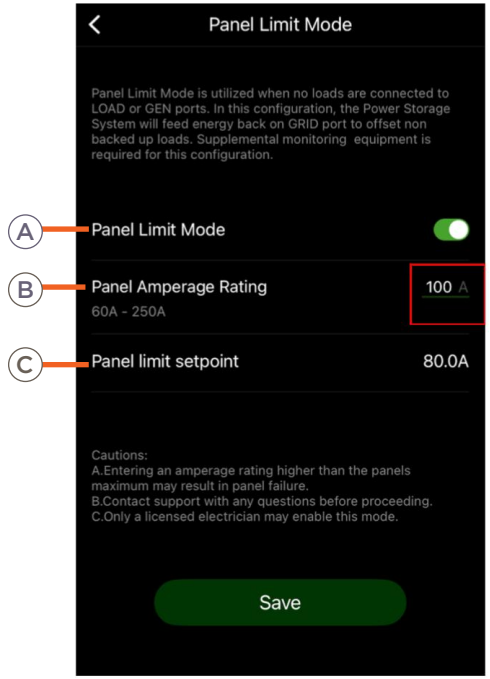
## 9.3. Panel Limit Mode

In Panel Limit Mode, the inverter continuously monitors the amperage on the main breaker bus bar, comparing the PCS import/export with the main breaker. Using this information, the inverter automatically enters Standby mode and ceases exporting power from the grid terminal if one of the following conditions are met:

1. The sum of the grid current and inverter discharge current exceeds the Panel Limit setpoint. The software requires the total current on the load center bus to stay below 75% of the main breaker rating for 5 minutes before the Inverter is allowed to discharge.
2. The total grid current reaches the Panel Limit setpoint.
   - Standby mode reduces the total amount of load on the load center by a factor of the Battery Monitoring System (BMS) minus maximum charge rate. The default is 6.5kW / 26A @240V.
   - The upstream power meter must read a current level below 75% of the main breaker size minus BMS Charge Rate for 5 minutes before the inverter willcharge from the grid again.
3. The inverter loses communication with the power meter - this causes the inverter to enter Standby mode as a failsafe, and generates an alarm condition in the SPS app..

For further details on Panel Limit Mode, refer to the Panel Limit Feature support article.

| | Setting | Description |
|---|---|---|
| Ⓐ | Panel Limit Mode | Toggle Panel Limit mode |
| Ⓑ | Panel Amperage Rating | Amperage rating of the main breaker panel or the rating of the closest upstream over-protection device feeding the monitored & controlled panel bussing. A 100A Main Breaker Panelboard has a 100A Panel Amperage Rating |
| Ⓒ | Panel limit setpoint | 80% of the Panel Amperage Rating value and the threshold that triggers the inverter to enter Standby mode |




⚠ **IMPORTANT:** Panel Limit Mode is intended only for installations where no loads are backed up. Contact **Savant Support** for design assistance, further information, or questions regarding the use of this mode.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