SAVANT

Savant® Power Storage Inverter Startup Procedure

Document Date: October 2025

This document guides the installer through the startup of a Savant Power Storage Inverter in a Savant Power Storage 20 (PS20) or Savant Power Storage 50 (PS50). The **Savant Power Storage Inverter Startup Procedure** applies to the following system types:

– Single Unit/Parallel Units
– Whole Home Backup/Partial Home Backup/No Backup (Upstream Load Panel)
– On Grid
– DC Coupled Solar
– AC Coupled Solar (Landed on GEN Port)
– Generator (Landed on GEN Port)

⚠️ !! READ BEFORE CONTINUING !! ⚠️

FAILURE TO FOLLOW INSTRUCTIONS MAY LEAD TO PERMANENT HARDWARE DAMAGE. READ COMPLETELY AND THOROUGHLY BEFORE ATTEMPTING START UP.

All instructions in this guide apply to both PS20 and PS50 systems unless otherwise noted. Some instructions may vary depending on system.

System Attributes

- Single Unit/Parallel Units
- Whole Home Backup/Partial Home Backup/No Backup (Panel Load)
- On Grid
- DC Coupled Solar
- AC Coupled Solar (Landed on GEN Port)
- Generator (Landed on GEN Port)

Startup Types

- Initial (unconfigured)
- Repowering a system

🛑 CRITICAL STARTUP SEQUENCE 🛑

Systems with multiple Inverters MUST be configured in the Savant Power Storage app to assign "Leader" and "Follower" Inverter positions BEFORE starting up. Unassigned Inverters will assume the "Leader" position. Having multiple leaders in a single installation will cause permanent damage to hardware.

Initial Startup Procedure

1. 🛑 **STOP! Verify correct L1, L2, and N wiring across all units. Crossing these wires will damage the Inverter and void the warranty.**

2. **Open all electrical disconnects and over current protection devices (OCPDs)**. (See checklist below) Opening these OCPDs will isolate the Inverters from the grid and each other. The diagram below shows an example of open OCPDs in a parallel system with four Savant Inverters.

☐ (A) GRID Port OCPDs

☐ (B) LOAD Port Combiner Panel OCPDs

☐ (C) Generator/AC Coupled Solar (GEN) Port Combiner OCPDs
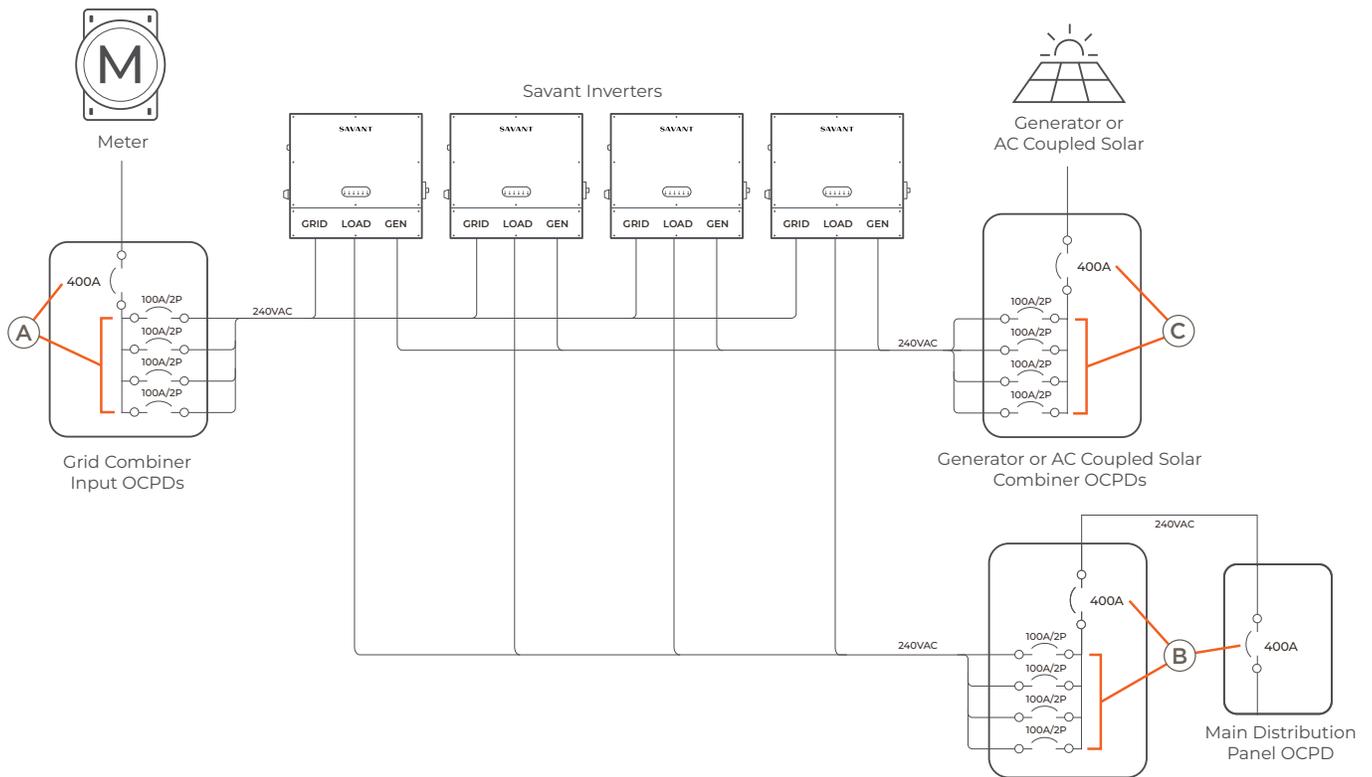
3. Switch Battery Cluster Management System (BCMS) to the ON position.

PS20: Switch BCMS Power Switch to the ON position. Then press and hold the Start Button until the BCMS status LED flashes blue.

PS50: Switch BCMS Power Switch to the ON position. Then press the START button using a small screwdriver.
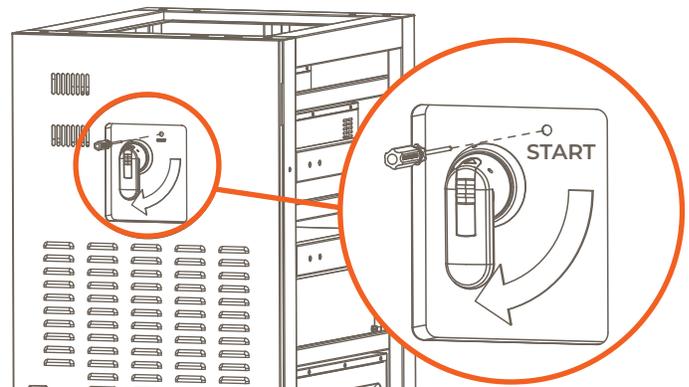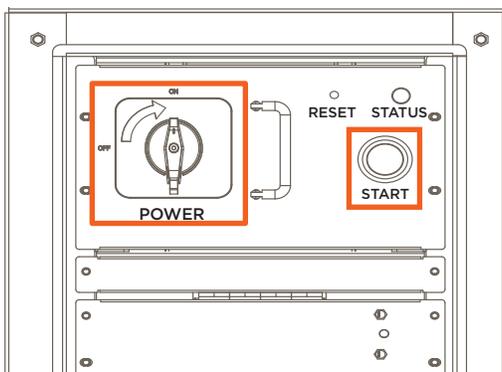
4. Battery modules self check and boot up. Verify the following status LED light sequence:

- Yellow: Initializing

- Blue: Running self test

- Green: Modules pass

- Red: Modules failed or is at minimum voltage. BCMS relays won't close when a module or the BCMS is faulted. Inverter controller(s) will only initialize with external AC power. Recharging with external AC power and the inverter is required before system will operate normally.

PS20 BATTERY MODULE
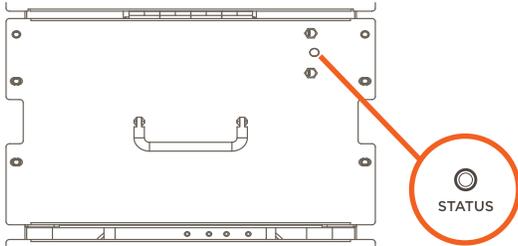
STATUS

PS50 BATTERY MODULE

NOTE: PS50 battery modules are not visible during startup process. LED indicator can be utilized when using external battery charger.

5. Verify PS20 BCMS status LED turns green or verify PS50 displays current state of charge (SoC). Once all self tests have passed, the BCMS will close the internal relay and the inverter will receive high voltage on the DC bus.

PS20 BCMS STATUS LED

RESET STATUS

STATUS

ON
OFF
POWER

START
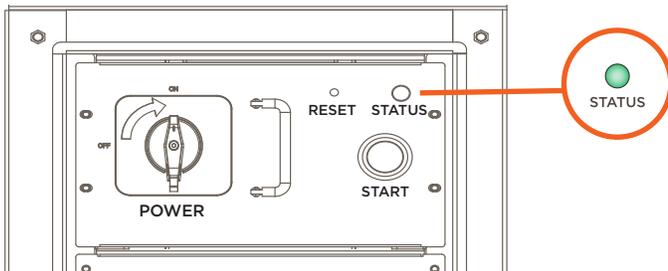
6. Inverter controller(s) boot sequence (2.5 min). Verify the following status LEDs before proceeding:

- Run: Blinks amber.

- Status: Solid green.

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NETWORK STATUS GRID GENERATOR LOAD RUN

INVERTER STATUS LEDS
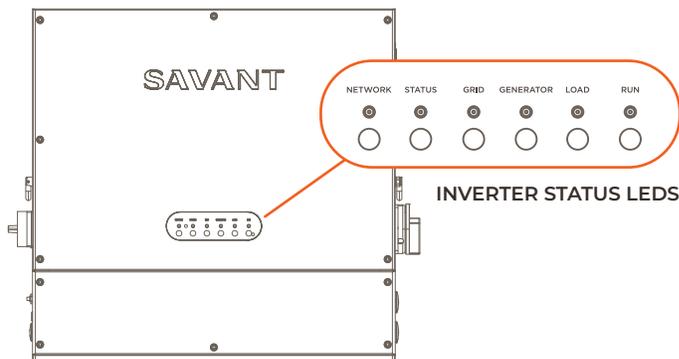
7. Ensure the GRID port OCPDs are open in the upstream grid combiner panel.

8. On each Inverter, turn the red grid switch to the ON position. **DO NOT PRESS** the silver **ON/OFF button**. This happens in a later step.
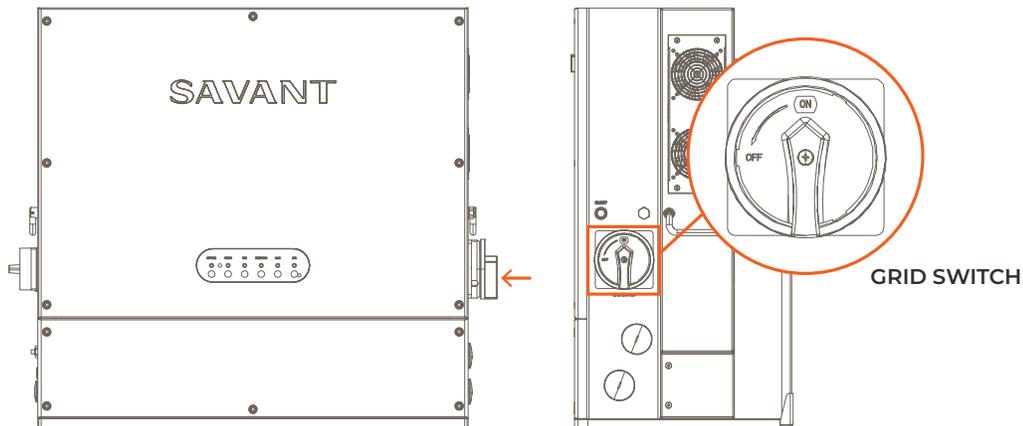

GRID SWITCH

9. Close each grid OCPD feeding Inverters in the upstream Grid Combiner Panel. See diagram below.

10. Close the upstream Grid Combiner Panel Main OCPD.
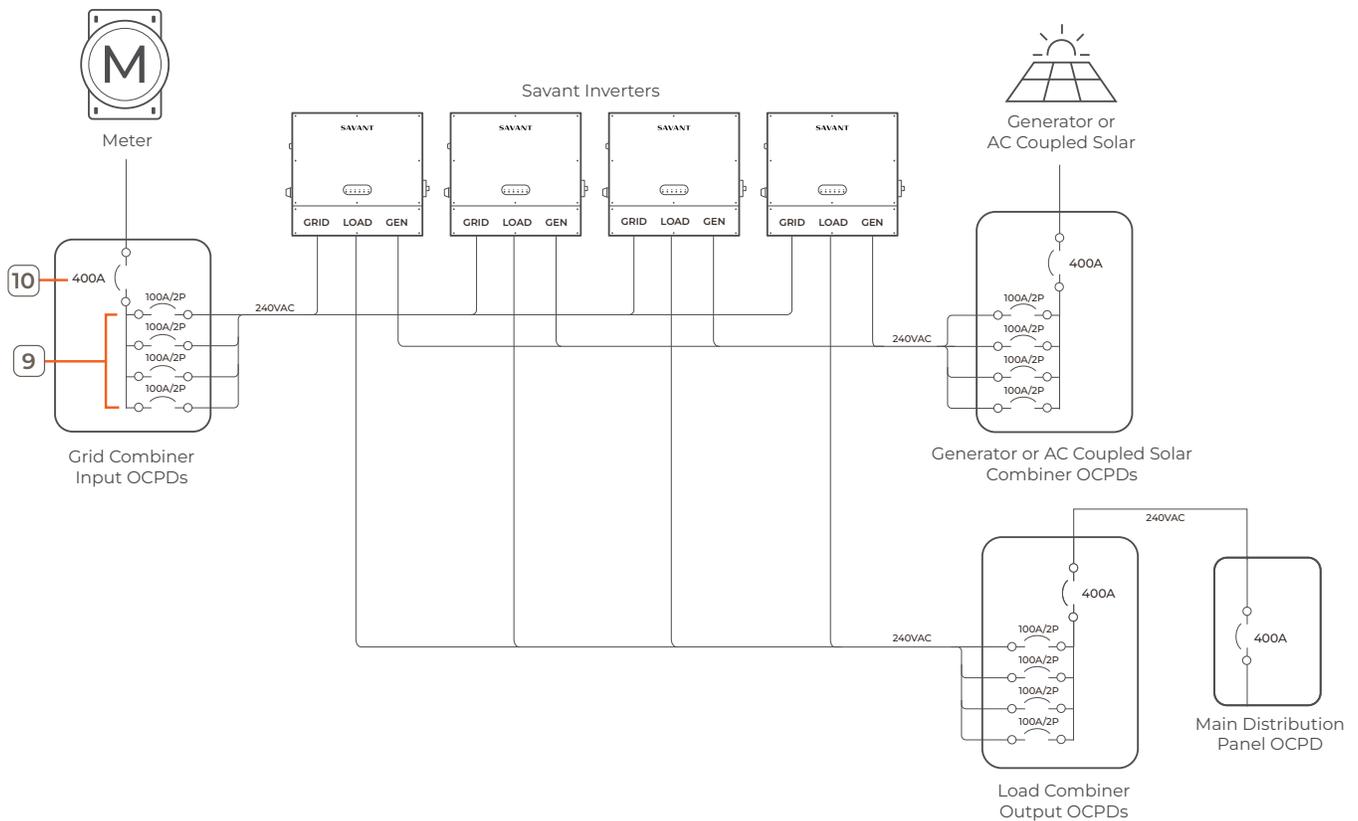
11. Verify Grid status LED turns solid green, this indicates grid is detected and within specifications.
   NOTE: Blinking grid LED indicates the grid is out of specification. Please see Savant Power Storage 20 Installation Guide or Savant Power Storage 50 Installation Guide before proceeding.

12. Verify all Grid status LEDs are green and all Load status LEDs are green. The system is now in Grid Passthrough Mode. Grid power is now being passed through to the load ports.

13. Verify all load OCPDs and disconnects are open.

Savant Inverters

GRID LOAD GEN | GRID LOAD GEN | GRID LOAD GEN | GRID LOAD GEN

240VAC

400A

13

400A

Main Distributic
Panel OCPD

240VAC

100A/2P
100A/2P
100A/2P
100A/2P
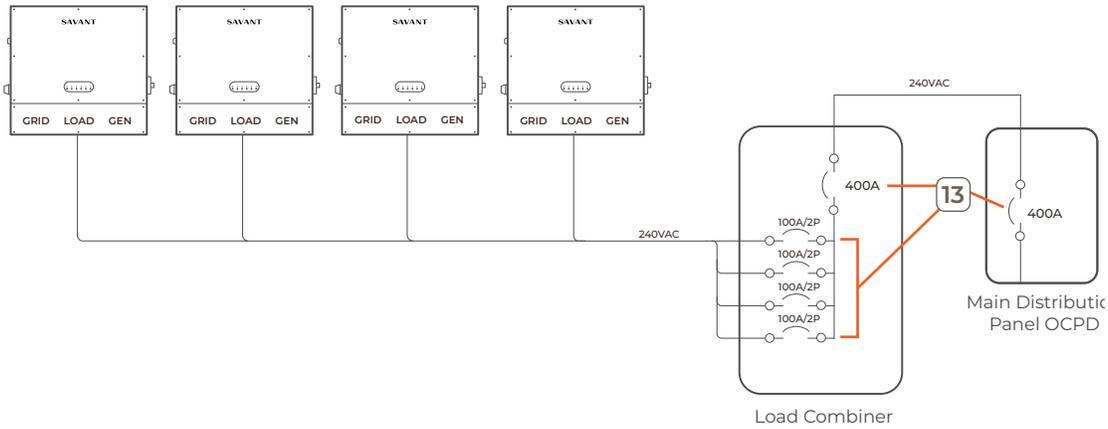
Load Combiner

14. Close loads OCPDs.

– For sites with a single load disconnect point: (i.e. all downstream loads can be turned off at a single point.)

1. Close the associated load OCPD for each Inverter in the Load Combiner Panel.
2. Close the main disconnect OCPD for the Load Combiner Panel.
3. Close main OCPD in the downstream Main Distribution Panel. (If present)

⚠ **CAUTION!** Closing load side OCPD out of order may cause excess current (greater than 100A) to be drawn through a single inverter causing permanent damage and voiding the warranty.

Savant Inverters

GRID LOAD GEN | GRID LOAD GEN | GRID LOAD GEN | GRID LOAD GEN

240VAC

2 400A

400A 3

Main Distribution
Panel OCPD

240VAC

100A/2P
100A/2P
100A/2P
100A/2P

1

Load Combiner
Output OCPDs
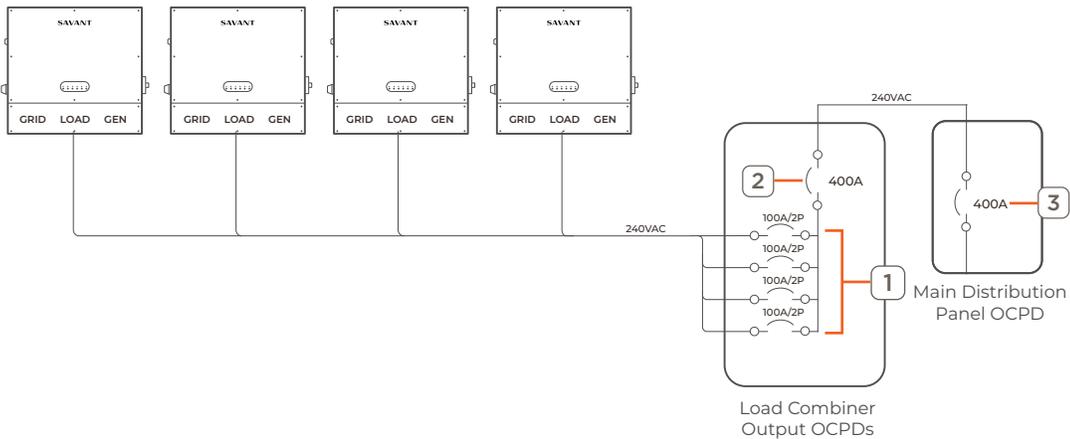
- For sites with no single load disconnect point (i.e. parallel inverters with multiple load disconnects):
    1. Close the associated load OCPD for each Inverter in the Load Combiner Panel.
    2. Close the main disconnect OCPD for the Load Combiner Panel.
    3. Close each main disconnect OCPD in the downstream Main Distribution Panel.

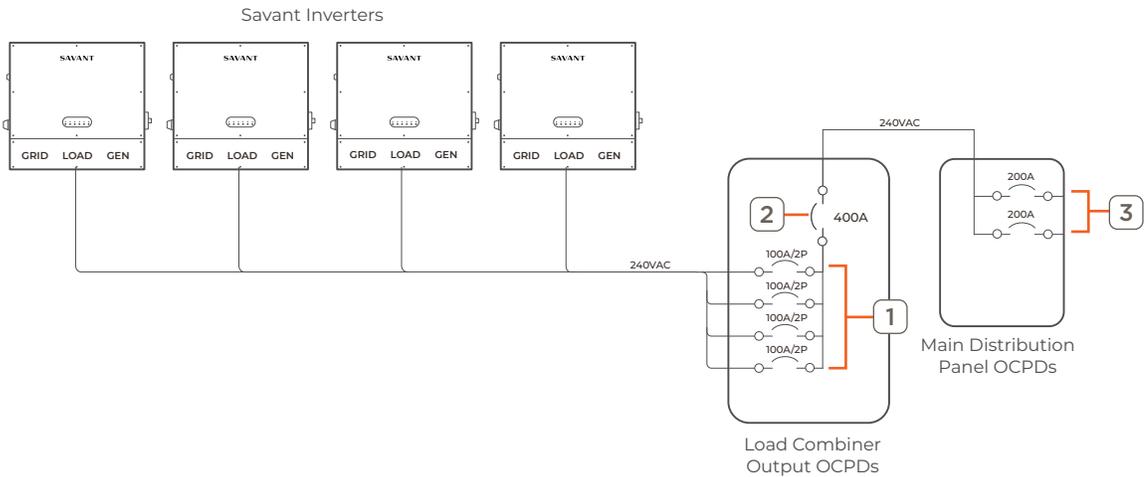   ⚠️ **CAUTION!** Closing load side OCPD out of order may cause excess current (greater than 100A) to be drawn through a single inverter causing permanent damage and voiding the warranty.

15. Verify the following Network status LED sequence during initial startup: DO NOT proceed until full Network status LED sequence is observed.
    - Wired configurations:

        1 🔴 Blinking Red

        2 🟢 Blinking Green: DHCP/ checking connection to cloud

        3 🟢 Solid Green: Connection to Savant Cloud

    - Wi-Fi configurations: (Not recommended configuration)

        1 🔴 Solid Red: Not configured

        2 🔴 Blinking Red: Ready for configuration

16. Use the Savant Power Storage (SPS) app to configure network settings and add Inverter(s) to account:
    - Wired Configuration: No additional network steps. Add to account and configure.
    - Wireless Configuration (not recommended): Follow instructions in Savant Power Storage (SPS) App Setup Guide to onboard home Wi-Fi.

17. 🛑 **STOP!** For systems with more than one Inverter, **parallel and shared battery configurations MUST** be completed **before proceeding**. Incorrect configuration may lead to **permanent hardware damage.** Refer to the Savant Power Storage (SPS) App Setup Guide for more information. 🛑

LEADER CONFIGURATION EXAMPLE

10:50

< Parallel & Shared Battery   Help

Parallel Systems: Power Storage Systems where there are more than one Savant Power Storage Battery.

Shared Battery Systems: Power Storage Systems where there are 2 Inverters per Savant Power Storage Battery.

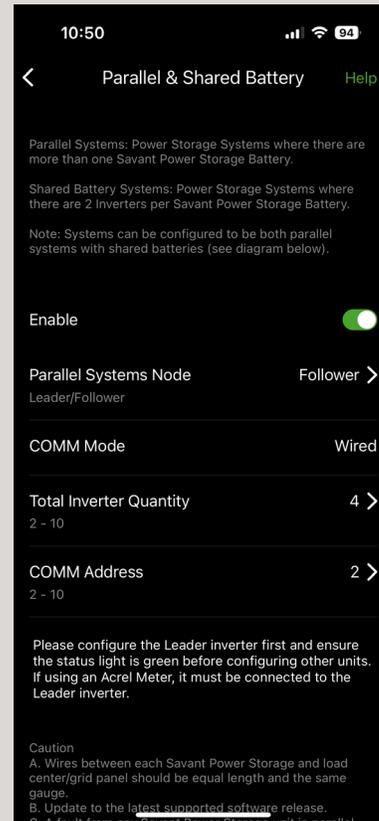Note: Systems can be configured to be both parallel systems with shared batteries (see diagram below).

Enable ⬤

Parallel Systems Node   Leader >
Leader/Follower

COMM Mode   Wired

Total Inverter Quantity   4 >
2 - 10

COMM Address   1 >
1 - 1

Please configure the Leader inverter first and ensure the status light is green before configuring other units. If using an Acrel Meter, it must be connected to the Leader inverter.

Caution
A. Wires between each Savant Power Storage and load center/grid panel should be equal length and the same gauge.
B. Update to the latest supported software release.
C. A fault from any Savant Power Storage unit in parallel

FOLLOWER CONFIGURATION EXAMPLE

10:50

< Parallel & Shared Battery   Help

Parallel Systems: Power Storage Systems where there are more than one Savant Power Storage Battery.

Shared Battery Systems: Power Storage Systems where there are 2 Inverters per Savant Power Storage Battery.

Note: Systems can be configured to be both parallel systems with shared batteries (see diagram below).

Enable ⬤

Parallel Systems Node   Follower >
Leader/Follower

COMM Mode   Wired

Total Inverter Quantity   4 >
2 - 10

COMM Address   2 >
2 - 10

Please configure the Leader inverter first and ensure the status light is green before configuring other units. If using an Acrel Meter, it must be connected to the Leader inverter.

Caution
A. Wires between each Savant Power Storage and load center/grid panel should be equal length and the same gauge.
B. Update to the latest supported software release.
C. A fault from any Savant Power Storage unit in parallel

18. Update firmware. Firmware updates are performed by Savant Support. Contact Savant Support at support.savant.com/power/s/contactsupport.

⚠️ **ATTENTION!** Firmware updates must be scheduled before site installation. External AC power and onsite internet are required for firmware updates.

19. Configure remaining settings in the SPS app. Some settings require a power cycle, if prompted ensure the silver ON/OFF button on the Inverter is OFF and flush with the Inverter. **NOTE:** The Inverter functionality is ON when the silver button is pressed in. See Savant Power Storage (SPS) App Setup Guide for complete details.

☐ System Information (Time Zone and Device Name)

☐ Battery Operation

☐ Connected Power Sources

☐ Interconnection Settings

20. Starting with the Leader, press in the silver ON/OFF button on each Inverter to turn each Inverter ON. This starts internal Inverter functionality. Wait 2.5 minutes after the last Inverter ON/OFF button has been pressed.

ON/OFF BUTTON
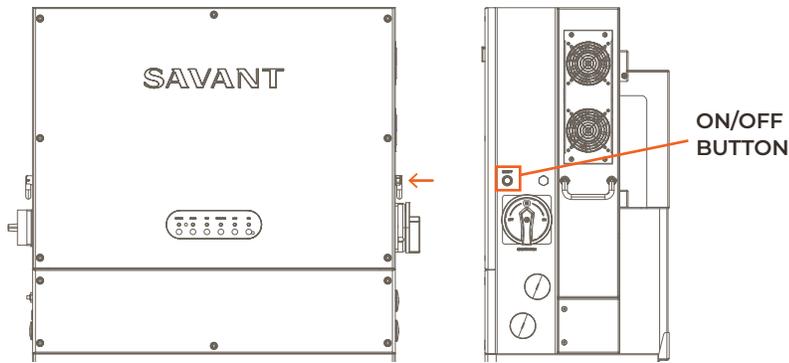
21. Verify the following status LEDs on Inverter before proceeding:

Status	🟢	Solid green
Grid	🟢	Solid green
Generator	⚫🟢	Off or solid green if configured with AC coupled solar on GEN port and battery below AC solar start State of Charge (SoC)
Load	🟢	Solid green
Run	🟢🟡	Solid green or blinking yellow depending on DC coupled solar configuration

22. 🛑 **STOP!** Verify there are no alarms active in the SPS app before continuing. All alarms need to be resolved before proceeding. Alarms are found under Settings > System Information >Notifications. 🛑

23. Verify there are no red LED status indicators, no faults in SPS app, and the home is receiving power.

24. (Optional) – DC Solar:
    1. Rotate PV Switch to ON position.
    2. Wait for PV system to startup. (Depending on optimizer/RSD configuration, this may take several minutes)
    3. In the SPS app verify solar is being produced.

PV SWITCH
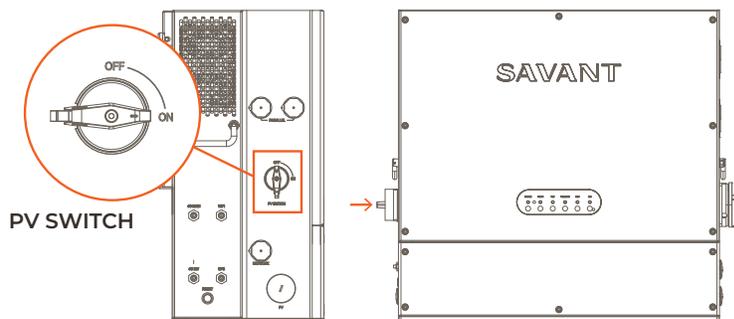
25. (Optional) – AC Coupled Solar (GEN Port)
   1. If AC coupled solar is configured in parallel:
      1. Close all Savant Inverter GEN port OCPDs.
      2. Close the main disconnect OCPD in the AC Coupled Solar Combiner.
      3. Close all AC coupled solar inverter OCPDs.
      4. Close main disconnect OCPD between Savant Inverter and AC coupled solar inverters.
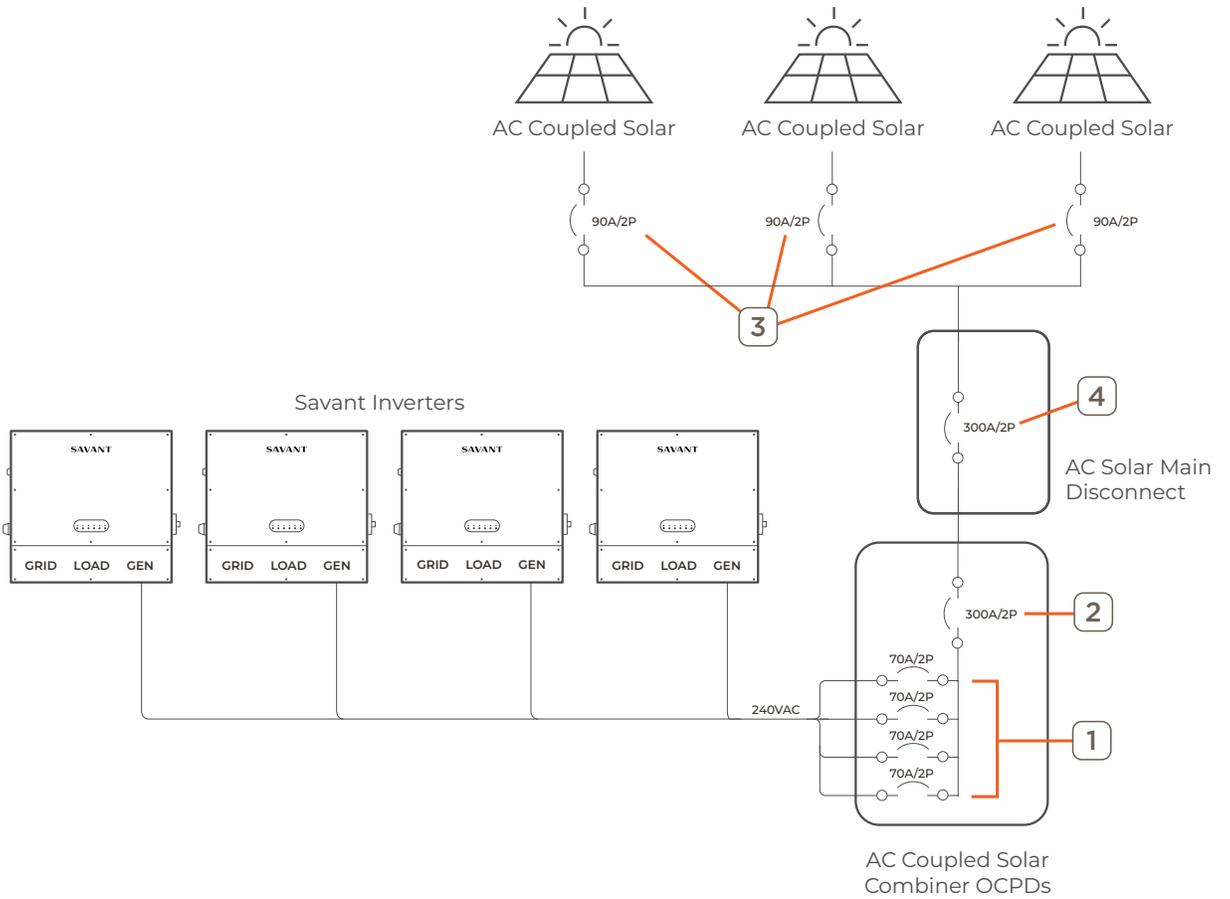
   2. If AC coupled solar is connected directly to GEN port:
      1. Ensure the main disconnect OCPD between AC solar inverters and GEN port is open.
      2. Close main disconnect OCPD between AC solar inverters and GEN port.

26. (Optional) - Generator (GEN port)
  - If generator coupled to the GEN port:
    1. Close all Savant Inverter GEN port OCPDs and main disconnect OCPD in the Generator Combiner Panel.
    2. Close the main disconnect OCPD in the Generator Combiner Panel.
    3. If applicable, close generator disconnect switch at unit.