SAVANT

Savant Power Storage 50

Quick Reference Guide

Box Contents

(1) Savant Power Inverter (PS-INV-12.5KW-100A-xx)
(1) Battery Cabinet (PS50-BATT-ENCL-INDOOR-xx)
(1) Savant Power Director or Panel Bridge Controller
(1) AFCI Module
(2) Battery Crates (PS50-BATT-50KWH-xx)
  (5) Battery Modules each
(1) Mounting & Installation Kit (075-1421--xx)

Specifications

Environmental	
Temperature	**Inverter:** -13°F to 131°F (-25°C to 55°C) **Battery:** 32 °F to 113 °F (0°C to 45°C)
Humidity	0% to 95% Relative Humidity (non condensing)
Altitude	Less than 9842 ft
Rating	NEMA2

Total Dimensions and Weight (Single Inverter, Side Mounted)			
Height	Width	Depth	Weight
65 in (165 cm)	32.3 in (82 cm)	27.6 in (70 cm)	1314 lb (596 kg)

Battery Cabinet Dimensions and Weight			
Height	Width	Depth	Empty / Full Weight
65 in (165 cm)	21.7 in (55 cm)	27.6 in (70 cm)	207 lb (94 kg) 1210 lb (549 kg)

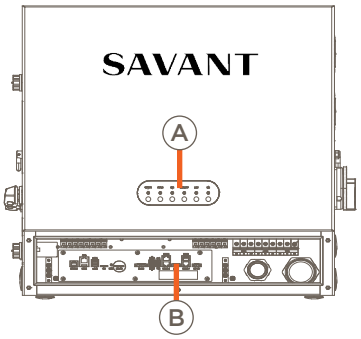
Inverter Power			
Maximum Output Per Inverter	Grid Transfer Time	Maximum Surge Output Per Inverter	Maximum Passthrough Per Inverter
12.5 kW	< 70 ms	**On Grid:** 30 kW, 300ms / 28 kW, 25s **Off Grid:** 24kW, 400ms / 19.1kW, 1s / 16kW, 10s	100A

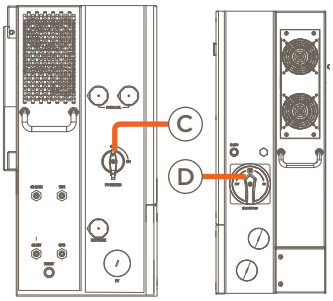
Battery Power	
Nominal Energy	Nominal Voltage
50 kWh	512 VDC

Standards	
Wi-Fi	2.4 GHz IEEE 802.11 b/g/n

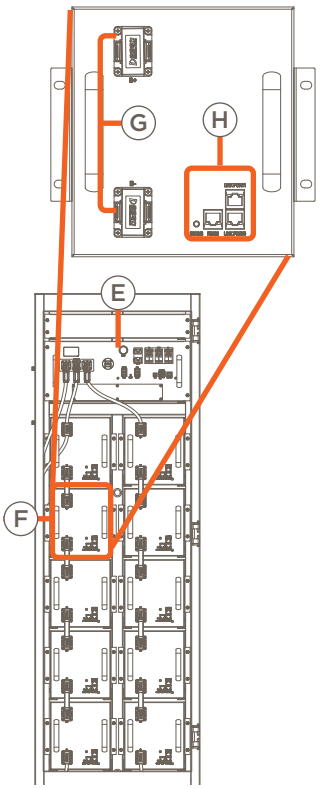
Regulatory		
	FCC Part 15 Class B	Grid Interconnections
Safety and Emissions	FC	IEEE-1547:2018, IEEE-1547:2020.1, CA Rule 21, HECO, and PREPA
Contains FCC ID:	XMR201808EC25AF, 2ACOE-SKW92B	
Certifications	UL 1741 SA, UL 1741 SB, UL 1741, UL 1741 PCS, UL 1699B, UL 9540, UL 1973, UL 1642, C22.2 No. 107.1 and 330	
RoHS	Compliant	

Inverter





Battery Cabinet & Modules



Descriptions

A	Inverter Status LEDs	See Inverter Status LEDs
B	Inverter Front Panel	Remove panel to reveal inverter wiring area. See Inverter I/O ports
C	PV Input Switch	Toggle PV input ON or OFF
D	Grid Switch	Connect or disconnect the grid input
E	Battery Cabinet Monitoring System (BCMS)	See BCMS Ports
F	Battery module Slot	10 slots for included battery modules
G	Battery Terminals	Positive (B+) and negative (B-) battery terminals
H	Battery Module Communication ports	See Battery Module

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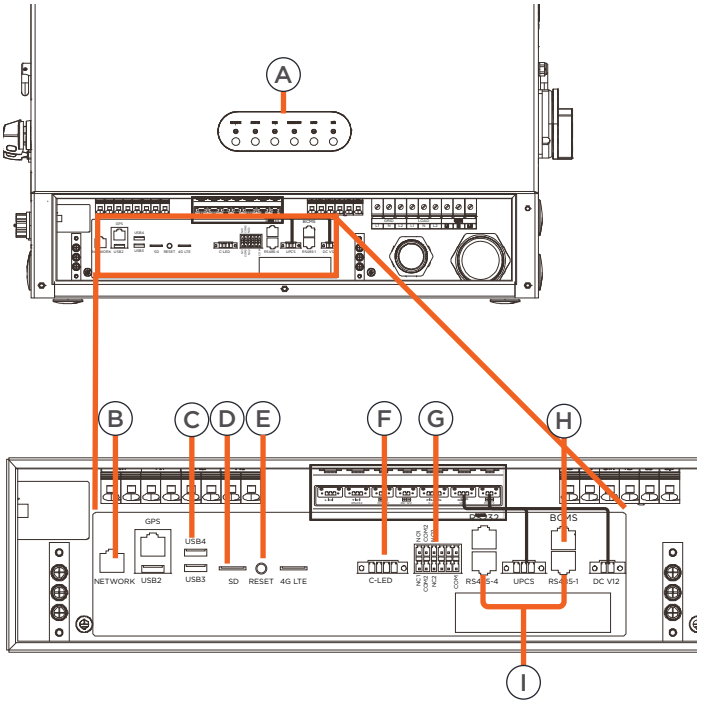
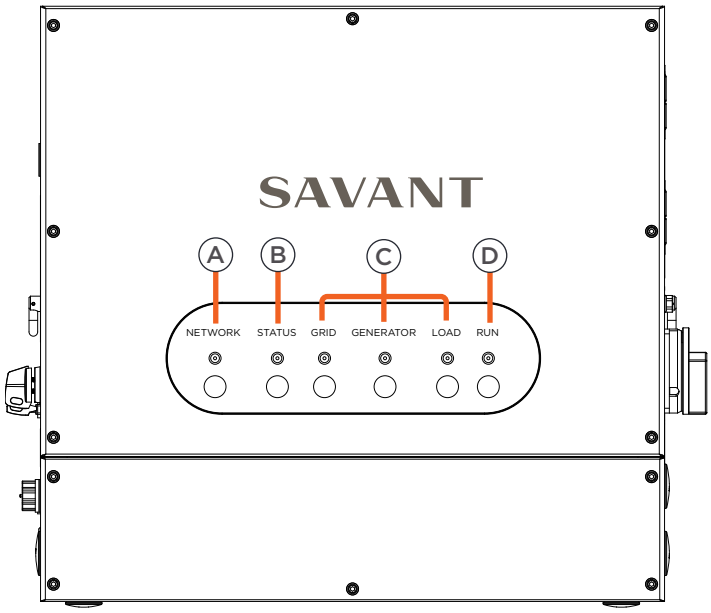
Inverter I/O ports



Front Inputs / Outputs

A	Inverter Status LEDs	See **Status LEDs & Inverter States**
B	Network	RJ45 connection for wired internet connection
C	USB ports	Used to update software without a network connection
D	SD	Enables local data collection without an internet connection
E	Reset	Hard reset **IMPORTANT!:** Use only when instructed by Savant Support
F	CLED	Power input for LEDs
G	GPIO ports	See the Savant Power Storage 50 Installation Guide
H	BCMS	Battery Management System Communication port
I	RS-485 port	See the Savant Power Storage 50 Installation Guide

Inverter Status LEDs



Status LEDs & Inverter States

A Network	**Solid Red:** Inverter startup in progress **Blinking Green:** Wi-Fi or Ethernet connection detected and inverter connecting to router **Solid White:** Inverter is connected to the router, connecting to the Internet **Solid Green:** Stable Internet connection **Blinking Red:** Network disconnected
B Status	**Blinking Blue:** System updating **Blinking Red:** Communication fault between the energy management unit and the battery system, inverter unit, or PV unit **Solid Red:** Energy management unit internal communication fault **Blinking Green:** System is turned off by energy management unit **Solid Green:** System running normally
C Power	**On:** Grid, generator, and load inputs are operating normally **Off:** No power input **Blinking:** Grid, generator, or load outputs are operating outside normal parameters
D Run	**Solid Green:** Inverter and PV charging unit operating normally **Solid Red:** Inverter fault **Solid Yellow:** PV charging unit fault, or system operating with over-temperature protection **Blinking Yellow:** Inverter and PV charging unit alarm triggered **Blinking Green:** Updating Inverter and PV charging unit

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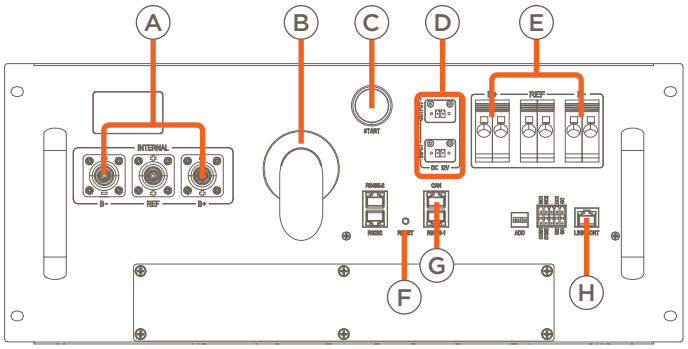
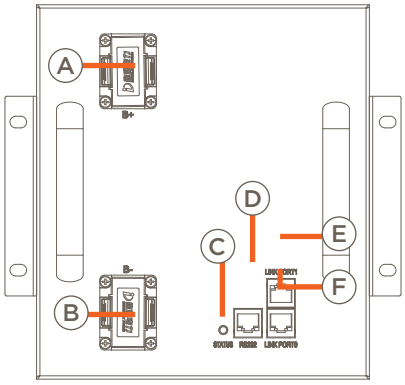
BCMS Ports



A	Battery Input	Negative, REF, and Positive battery inputs
B	Power Switch	Toggle BCMS power **IMPORTANT!:** The handle of the battery disconnect switch is located on the door of the cabinet
C	Start Button	Press to start BCMS
D	12V Input | Output	12V DC input and output
E	Battery Output	Positive, REF, and Negative power outputs
F	Reset	Reset Button **IMPORTANT!:** Use only when instructed by Savant Support
G	CAN port	CANBUS communication port
H	Link port	Battery module communication port

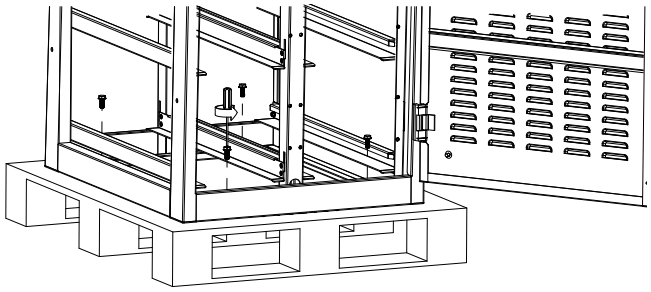
Battery Module



A	Battery module Positive (B+)	Battery Positive Connection (Orange)
B	Battery module Negative (B-)	Battery Negative Connection (Black)
C	Status LED	See Battery Module Status LEDs
D	RS232	RS232 port (Not Used)
E	link port 1	Battery Communications port 1
F	link port 0	Battery Communications port 0

Battery Cabinet Installation

1. Removing the four screws securing the battery cabinet to the pallet

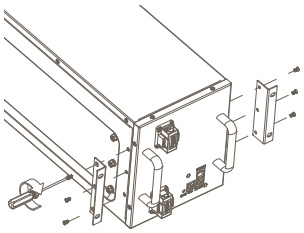


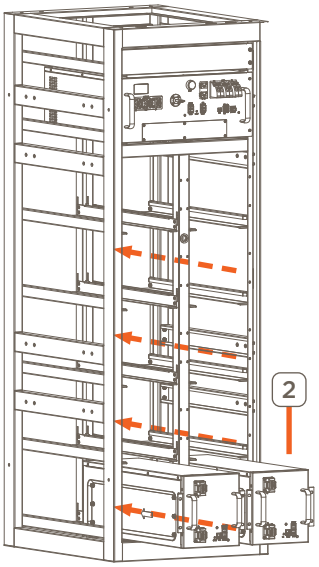
2. Attach the battery cabinet to designated floor location using anchor bolts through the pre-existing holes in the bottom of the battery cabinet

Battery Installation

1. Attach included mounting brackets to each battery module using M4 phillips head screws
2. Starting from the bottom, insert all ten battery modules into the battery cabinet
3. Secure each battery module to the internal mounting rails using included M5 screws
4. Number modules from 1-10 as shown to the right

1





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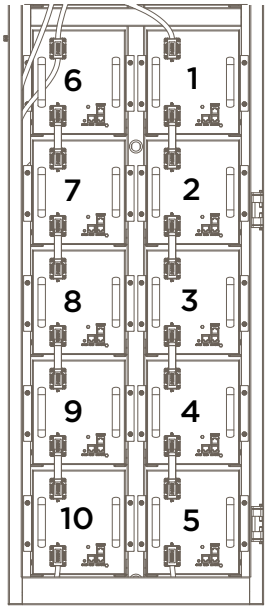
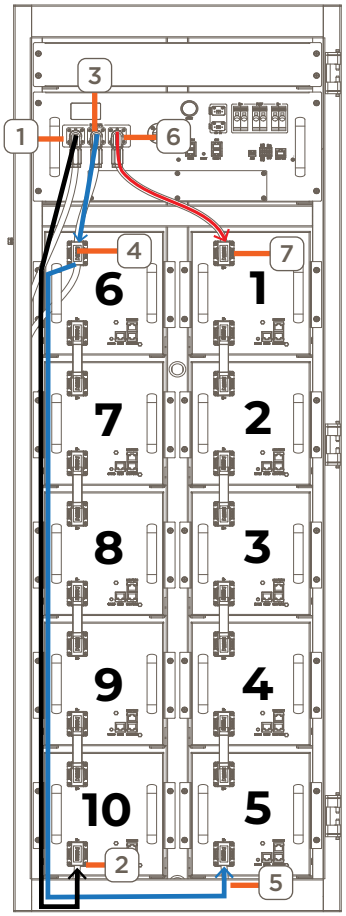


Battery Module to Cabinet Wiring

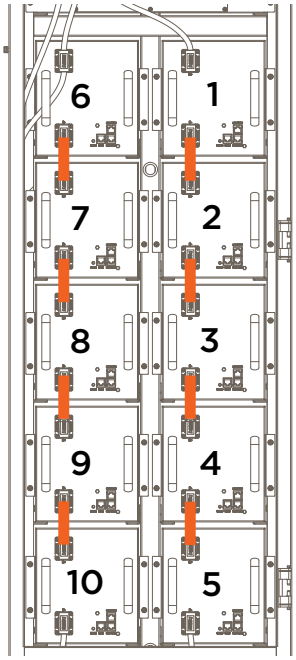
1. Insert the negative terminal of the W03A cable into the negative terminal of the BCMS
2. Connect the ring terminal of the W03A cable to the negative terminal of module 10
3. Insert the REF end of the W02 cable into the REF BCMS port
4. Connect the positive terminal of W02 and W04 to positive terminal of module 6
5. Route the W04 cable through to the bottom of the cabinet and connect to the negative terminal of module 5
6. Connect the positive connector of W01 cable to the POS BCMS port
7. Connect the positive ring terminal of the W01 cable to the positive terminal of module 1



DANGER!: Verify all wiring before proceeding as incorrect wiring may result in a short circuit

Battery Module Wiring

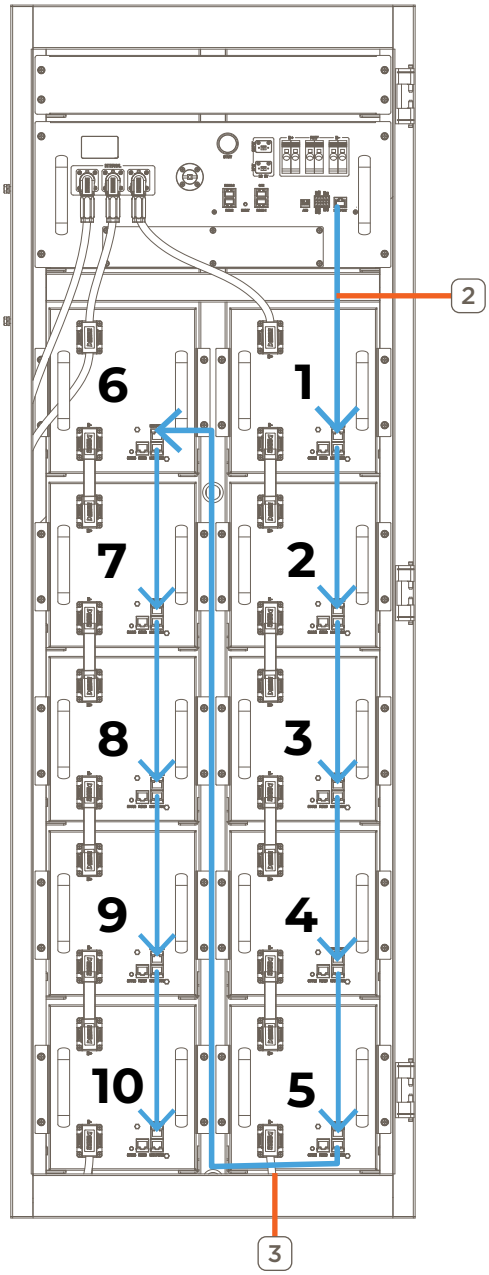
Using screws, connect the negative terminal (B-) of module 1 to the positive terminal (B+) of module 2. Continue this process with the negative terminal of module 2 to the positive terminal of module 3. Repeat for all modules using the diagram shown at right.



Battery Cabinet Communication Wiring

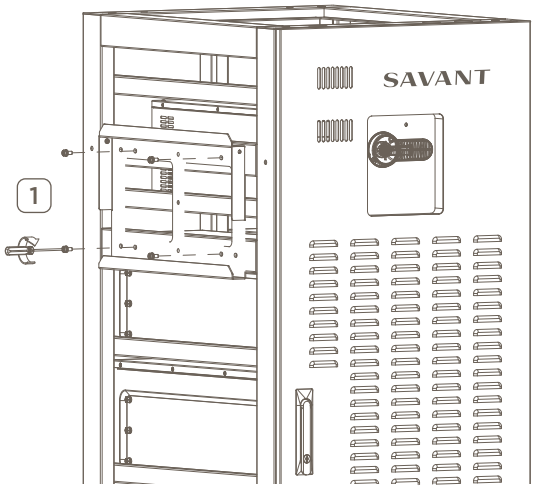
1. Excluding battery modules 5 and 10, connect link port 0 of each module to link port 1 of the module below using the provided Ethernet cables
2. Connect the cabinet BCMS link port to link port 1 of module 1
3. Connect battery module 5 link port 0 to battery module 6 link port 1 using provided W07A Ethernet cable

The completed battery communication path is shown in the diagram below:



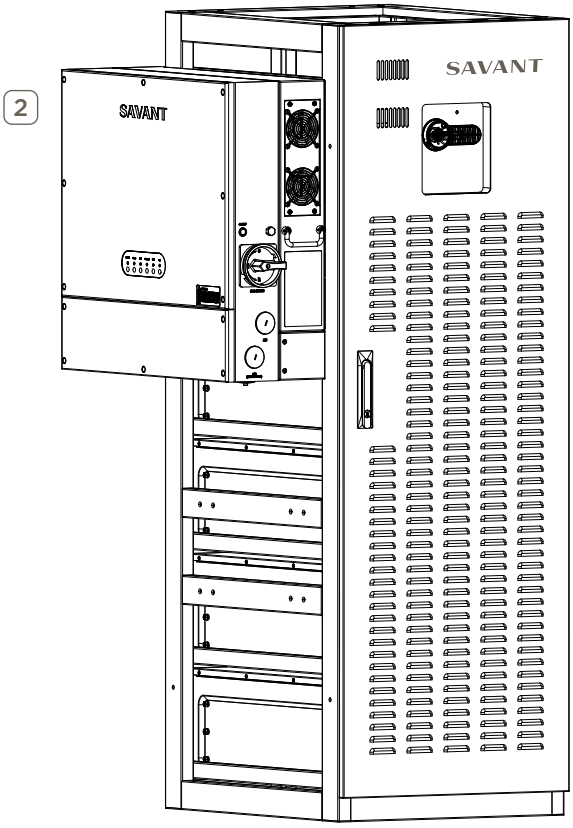
Inverter Cabinet Mounting

1. Attach the inverter mounting bracket to left or right side of the battery cabinet using included screws



2. Mount the inverter on the inverter bracket

NOTE: The inverter can be mounted seperately from the PS50 Battery Cabinet

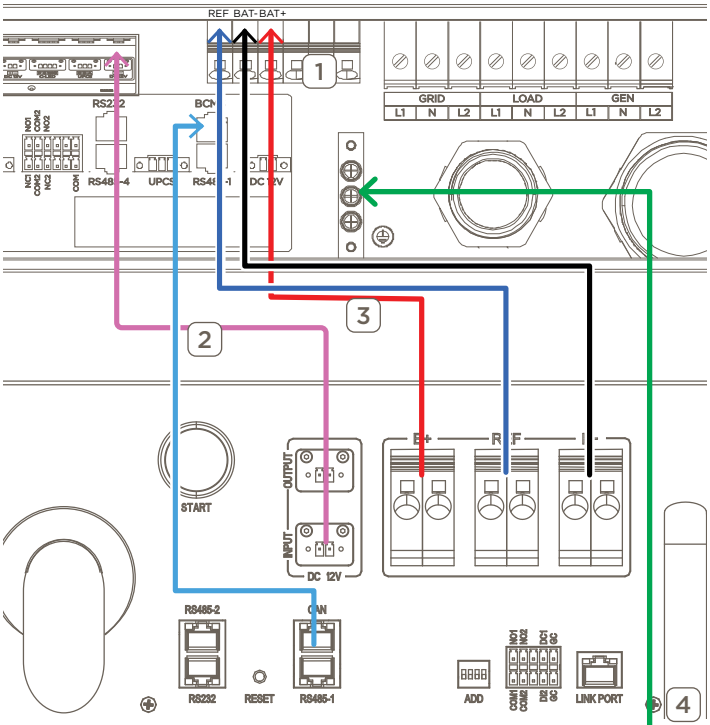


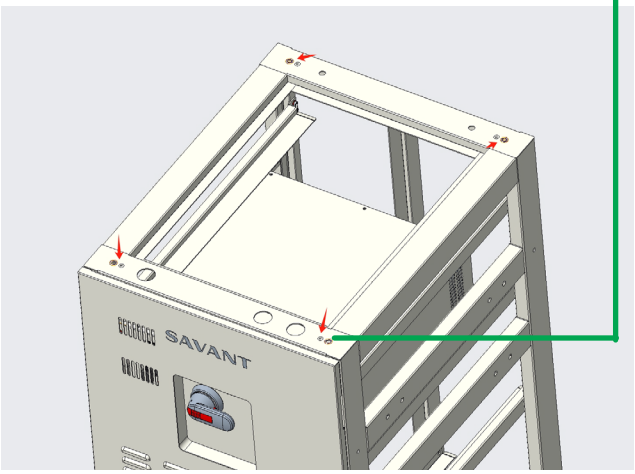
BCMS Wiring

1. Connect the BCMS output ports to the inverter battery terminals using cables sold separately. For information on cable sizing, see the Savant Power Storage 50 Installation Guide:

Conductor	BCMS Output port	Inverter Battery Terminal
Red	B+	BAT+
Black	B-	BAT-
Blue	REF	REF

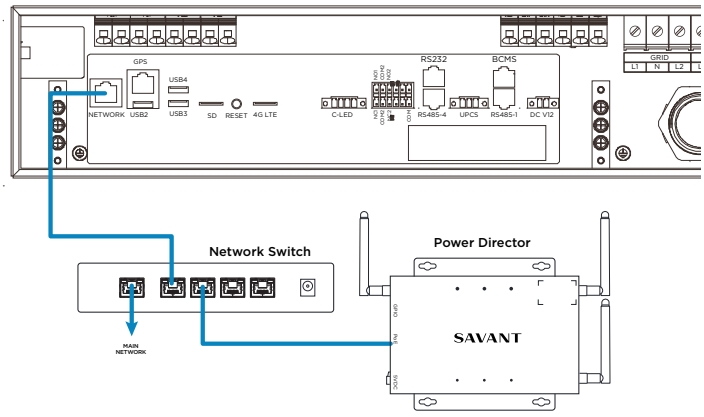
2. Connect the BCMS CAN port to the inverter BCMS port using a CAT5 or higher rated cable
3. Connect the 12V DC port of the inverter to the DC 12V Input port of the BCMS
4. Connect inverter GND to a grounding point on the battery cabinet



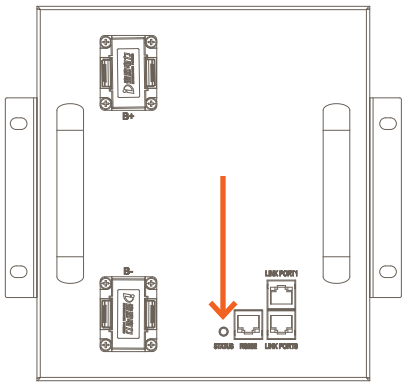


Network Connection

Connect the inverter to the same network as the Power Director or Savant Host. It is strongly recommended to use an Ethernet cable to connect the inverter and Power Director to the network.



Battery Module Status LEDs



Blinking Yellow	Start up or battery system update in progress
Blinking Blue	Battery is in self-inspection mode
Solid Green	Battery is operating normally
Solid Yellow	Battery alarm has been raised
Solid Red	Battery fault has been detected

More Information

To complete deployment and configuration of the Savant Power Storage 50, see the following documentation:

- For all other wiring and further physical installation, refer to the **Savant Power Storage 50 Installation Guide**

- To configure the Savant Power Storage 50 using the Savant Power Storage app, refer to the **Savant Power Storage App Setup Guide**

- To configure the Savant Power Storage 50 using the Savant Power Power & Light app, refer to the **Savant Power System Deployment Guide - Savant Power & Light App**

- To configure the Savant Power Storage 50 within a Savant Host system via RacePoint Blueprint, refer to the **Savant Power System Deployment Guide - Racepoint Blueprint**