



**rubix**

**STACK**

# OWNER'S MANUAL

# TABLE OF CONTENTS

## **GETTING STARTED 4-10**

What's Included . . . . .	4
Unpacking Your Battery . . . . .	5
Stack Base and Lid Kit . . . . .	6
Wiring Compartment Guide . . . . .	6
Safety and Environment. . . . .	7
Battery Identification & Labels . . . . .	8
LCD Guide. . . . .	9
LCD Navigation . . . . .	10

## **INSTALLATION 12-17**

Stacking Batteries, Spacing & Clearances . . . . .	13
Cabling & Paralleling Batteries . . . . .	14
Connecting Inverters or Other Solar Equipment . . . . .	16

## **CONFIGURATION 20-28**

Networking Batteries Together . . . . .	20
Communication With Inverters . . . . .	21
Inverter Compatibility . . . . .	22
Open Loop Installation . . . . .	23
Closed Loop Installation (48V). . . . .	23
EMP-Hardened Applications. . . . .	24
Rapid Shutdown. . . . .	25
Closed Loop Comm with Sol-Ark. . . . .	26

## **USAGE & TROUBLESHOOTING 30-32**

## **GENERAL SPECIFICATIONS 34-38**

**GETTING  
STARTED**

# WHAT'S INCLUDED

- Battery
- Wiring Compartment Cover
- Paralleling Busbars
- Paralleling Network Cable
- Terminal Covers



# TOOLS NEEDED

The following tools are required for installing your battery bank:

- Adjustable wrench OR open end 14 mm ( $\frac{1}{2}$ " ) + 10 mm ( $\frac{3}{8}$ " ) wrenches or sockets
- Torque wrench
- DC voltmeter
- Utility razor knife

## CAUTION

**Always** use caution when working with tools, especially tools with sharp edges!

# UNPACKING YOUR BATTERY

Batteries may be packed with Styrofoam and/or cardboard. Before heading to a jobsite, confirm how many batteries are in the crate since quantities and crate sizes are subject to change without notice.

## CAUTION

Battery should **only** be unpacked by qualified battery installers.

**Do not** puncture, drop, or otherwise damage the battery box prior to the removal of the battery. Abusing the battery in this manner will void the warranty.

**Do not** store the battery in extreme temperature environments or in direct sunlight.

**Do not** touch the + or – terminals. High voltage may cause injury or death.

Stack batteries are packaged in cardboard boxes.

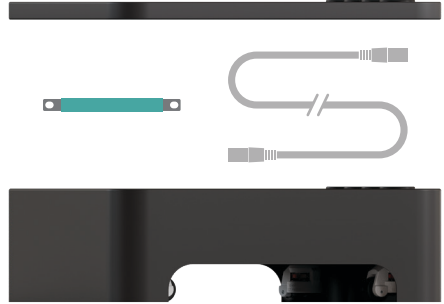


# STACK BASE AND LID KIT

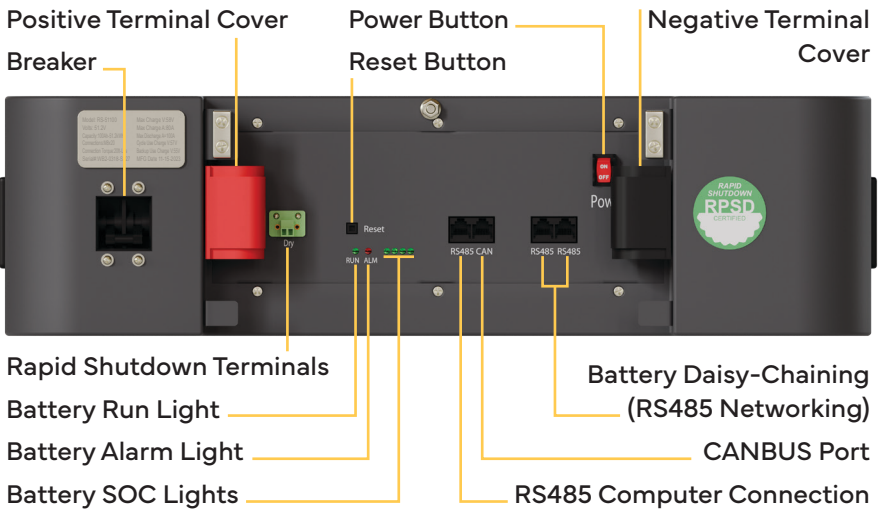
Stack series batteries are designed to use the Stack series base and lid kit (see picture). The Stack series base and lid kit is purchased separately. Up to 7 batteries can be used with each base and lid kit.

What's included:

- Base unit with casters
- Lid
- Grounding busbars
- Ethernet cable (for stack-to-stack networking or CANBUS communication with inverters)
- Installed cable grommets



## WIRING COMPARTMENT GUIDE



### NOTE

Enclosed wiring compartments provide easy installations as well as an added layer of safety.

# SAFETY & ENVIRONMENT

## CAUTION

**Do not** short-circuit + and – terminals.

**Do not** reverse polarity when connecting charging/discharging equipment.

**Do not** install battery in an environment that is less than 32 degrees Fahrenheit or more than 120 degrees Fahrenheit.

Rubix lithium batteries should **only be installed** in dry, climate-controlled areas.

Washhouses, damp basements, dirty engine rooms, etc., are **not suitable environments** for lithium batteries.

**Do not** connect batteries in series. Only parallel connections are permitted.

Rubix Stack batteries should **only be paralleled** with other Rubix Stack batteries of the same model number. Do not parallel with other sizes, voltages, or brands.

Batteries store electricity. **Only** qualified installers should work with Rubix batteries.

**Always follow NEC guidelines** to determine proper procedures, techniques, applicable accessories, and sizing.

**Never puncture, drop, or shake** Rubix batteries.

**Never open** a Rubix battery cover without the express permission of Rubix LLC or one of its authorized representatives.

**Do not** use Rubix batteries in mobile or marine applications without the express permission of Rubix LLC or one of its authorized representatives. Rubix batteries are designed and built to be used with solar and/or backup energy storage systems only.

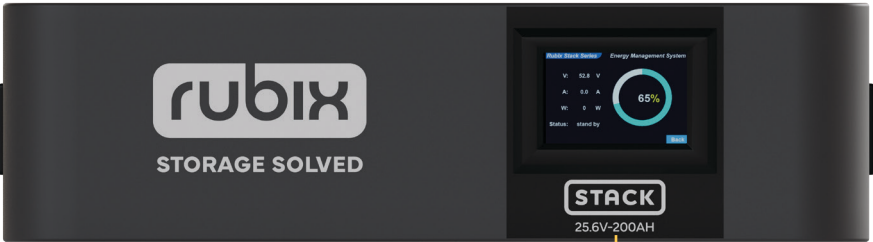
**Do not** orient Rubix Stack batteries in any position other than the intended horizontal position. Always use the Rubix Stack base unit to install batteries. Do not exceed the maximum stack height as outlined on page 36 in this manual.

**Do not** install or stack batteries on uneven or sloped terrain.

# BATTERY IDENTIFICATION & LABELS

Info Plate

Rapid Shutdown Sticker



Battery Series ID & Battery Voltage ID

<b>Model Number</b>	Model: RS-51100	Max Charge V:58V	
	Volts: 51.2V	Max Charge A:80A	
	Capacity:100Ah-51.2kWh	Max Discharge A=100A	
	Connections:M8x20	Cycle Use Charge V:57V	
	Connection Torque:20ft-Lbs	Backup Use Charge V:55V	
<b>Serial Number</b>	Serial#:WB2-0318-S227	MFG Date 11-15-2023	<b>Production Date</b>

# LCD GUIDE

The Stack Series LCD has an automatic dimming option. Upon startup, the LCD will stay in bright mode and remain in this mode for five minutes unless touched.

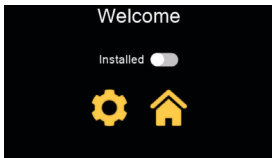
If the LCD is not touched for five minutes, it will go into dim mode. To switch to bright mode, simply touch anywhere on the LCD.

To turn off the LCD, press and hold anywhere on the screen for

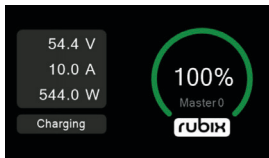
around 3 seconds. The LCD will power down. This will not turn off the battery. The battery will continue to function (charge/discharge) normally regardless of the LCD status.

Any time the battery is turned on, touching the LCD will return it to bright mode.

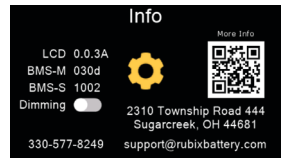
Dimming mode can be toggled on and off on the LCD's Info screen.



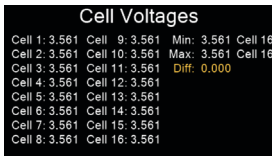
Welcome



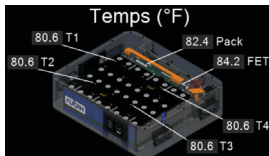
Home



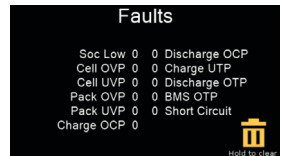
Info



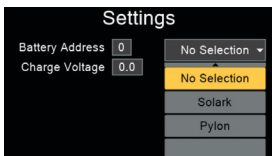
Voltages



Cell Temperatures



Faults



Inverter Protocol

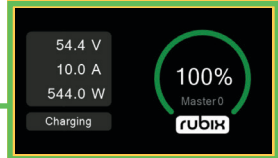


Battery Address



Charge Voltage  
(closed loop comm only)

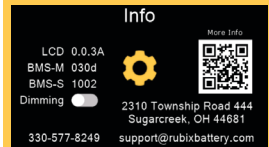
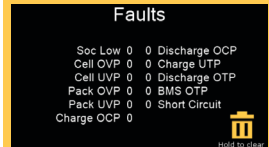
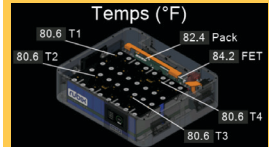
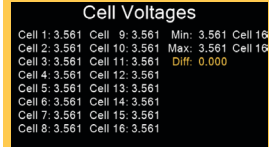
# LCD NAVIGATION



If a password is required to enter the settings menu, use 7777. Once the password has been entered, the battery address, charge voltage and inverter protocol can be configured.



When a battery is turned on for the first time, you will be met by the Welcome screen. From the Welcome screen, the gear icon opens the settings. The Home icon takes you to the Home screen. **Swiping left** from the Home screen loops you through the screens shown on the right, eventually returning to the Home screen. Regardless of the screen you're on, **swiping down** will always return you to the Home screen.



# INSTALLATION

## INSTALLATION CHEAT SHEET

The proper sequence of an installation is as follows:

- Unpacking
- Stacking
- Paralleling
- Connecting inverter/solar equipment cables
- Networking
- Configuring settings
- Initial startup sequence



# STACKING BATTERIES

Rubix Stack batteries are designed to stack on top of each other. Follow this sequence to stack your batteries.

1. Position the base unit near the battery bank's long-term position.
2. Lock all 4 casters on the base unit using the dials that raise and lower the brake pads.
3. Stack the first battery onto the base unit.
4. Stack additional batteries on top of the first battery, ensuring that the holes on the bottom of the battery slide over the posts of the battery below it. Properly installed, there should be no gap between stacked batteries.
5. Once the batteries are stacked and all networking and cabling is completed, unlock the casters and move the batteries to their correct and permanent position. Relock the casters so that the batteries will not move when accidentally bumped or pushed.

# BATTERY SPACING AND CLEARANCES

Rubix Battery recommends the following clearances for all battery installations (see spec sheet):

- Minimum spacing between batteries and wall: **1 inch**
- Minimum spacing between parallel battery stacks: **no spacing required**
- Minimum horizontal spacing between top of battery stack and solar equipment on wall: **6 inches**
- Minimum horizontal spacing between batteries and exposed water sources/ conductors: **4 feet**
- No exposed water lines may be above the batteries. Condensation **WILL** drip onto the batteries and cause damage.

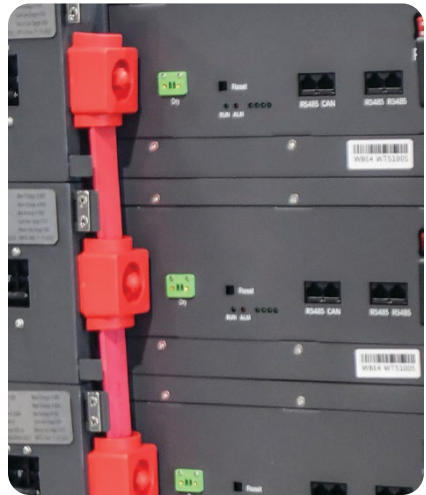
# CABLING & PARALLELING BATTERIES

## CAUTION

**Do not** connect Rubix batteries in series to create a higher pack voltage!

All Rubix batteries should be paralleled (positive to positive and negative to negative). Never connect Stack batteries in series.

1. Use the included busbars to parallel all batteries in the stack. (See torque specs on page 34.) Ensure that there are no washers between busbars or between busbars and battery terminals. Washers do not conduct current as well as busbar and terminal surfaces!
2. After all busbars are installed, install inverter cables on top of the busbars. Cables can be brought in through the base unit and/or through the lid. Both the base and lid have 4 entry holes that are closed with a rubber punch-in. Use a knife to cut a small slit in the middle of the rubber punch-in and then push the cable through. The rubber is flexible enough to accommodate most common cable sizes while still keeping the rest of the hole closed. It is not necessary that all cables are the same length as long as they are sized per NEC guidelines.
3. When paralleling multiple stacks, observe the following guidelines:
  - Maintain 4 inches or more between paralleled stacks.
  - Size paralleling (stack to stack) cables per NEC guidelines.
  - Ensure that paralleling cables are sufficiently protected from sharp edges.



## NOTE

Busbar tip: Layer busbars in a manner which allows for easy removal of individual busbars (see illustration).



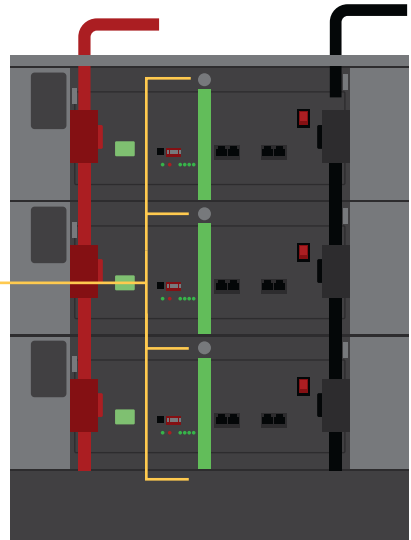
Busbars can be removed individually



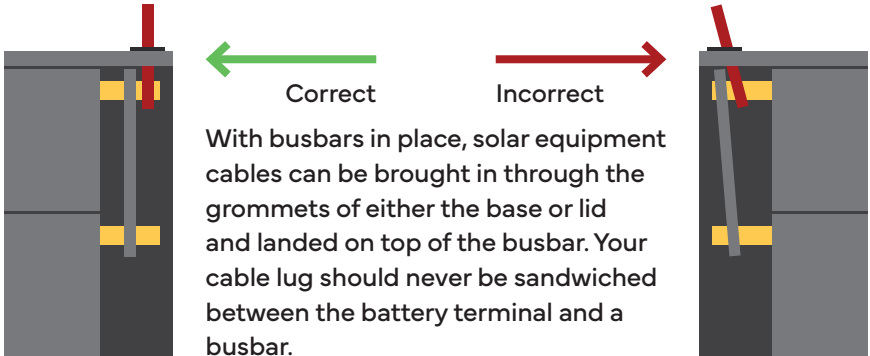
Busbars cannot be removed individually

Each battery includes a green grounding busbar. Batteries should be grounded together and connected to the system's earth ground. See photo.

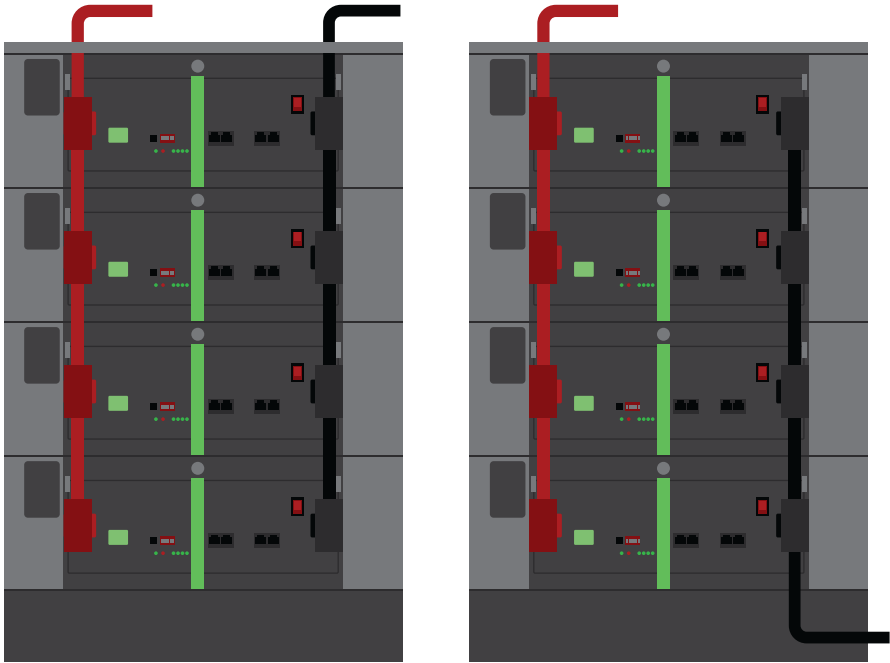
Grounding attachment points



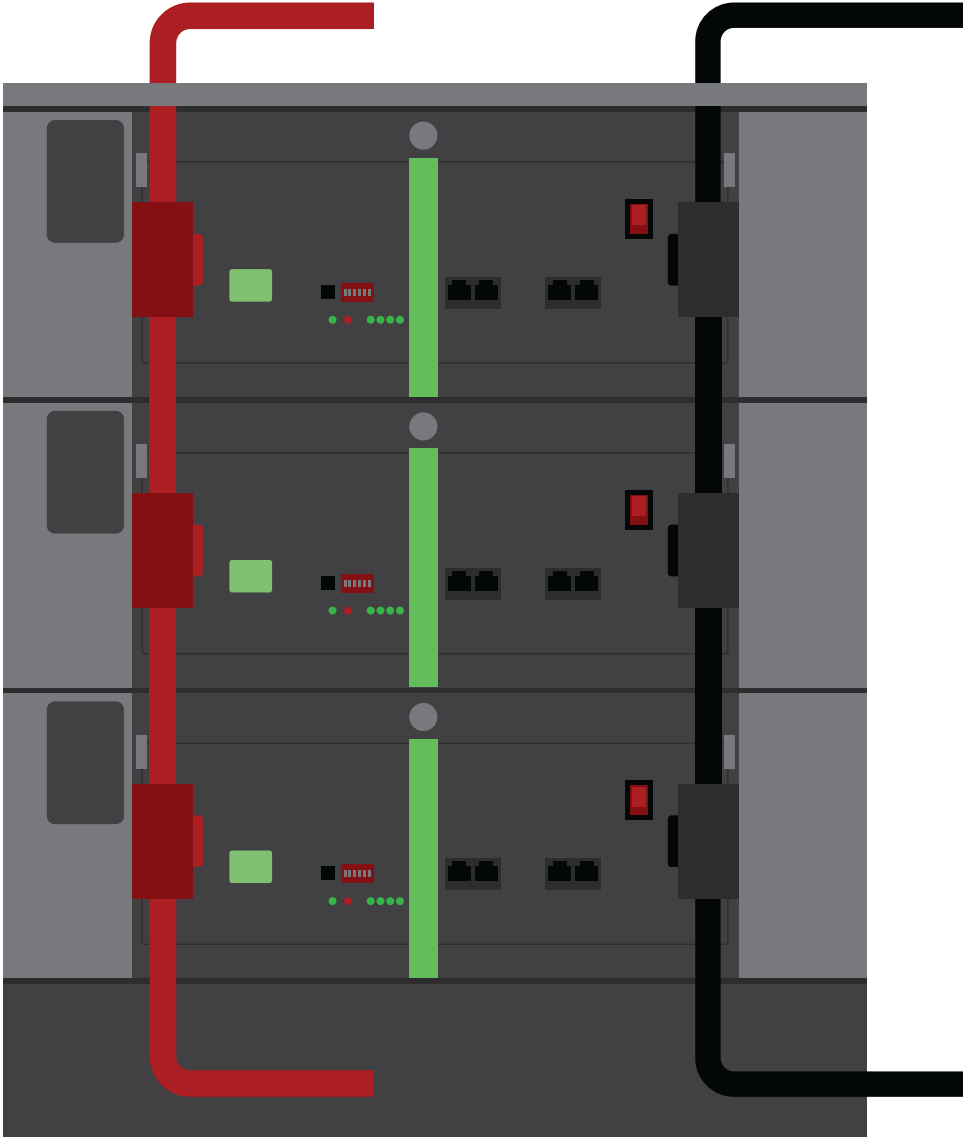
# CONNECTING INVERTERS OR OTHER SOLAR EQUIPMENT



A single set of cables coming from an inverter may be placed on the same battery or installed at diagonally opposite ends of the stack.



If there is more than one inverter or piece of solar equipment connected to the battery bank, **and** the maximum charge or discharge current exceeds 200A, cables should be placed on separate batteries.





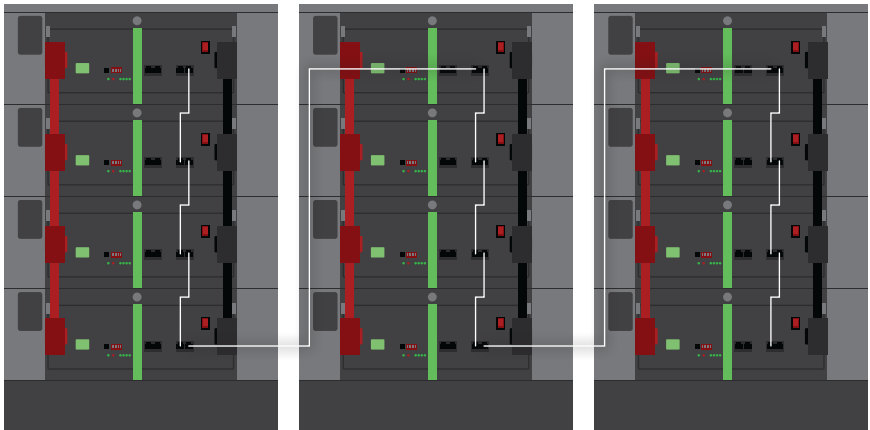
**CONFIGURATION**

# NETWORKING BATTERIES TOGETHER

When DC cabling and grounding are completed, install the included network cables from battery to battery. Starting with the battery you prefer to be 'master,' daisy-chain from the 'out' port to the 'in' port of the next battery, as shown.

## NOTE

For smaller systems, setting the bottom battery of the stack as 'master' can simplify the process of adding another battery down the road.



Once cable connections are complete, set a unique address for each battery, beginning with 0 for the master, as shown.

To set the address, ensure that the battery breakers are still in the off position, then turn on the battery on/off switch in the wiring compartment. Navigate to the Settings screen on the LCD.

With the master battery set to 0, set the next battery in the sequence to 1, the next to 2, and so on.

See page 10 for LCD navigation.



## COMMUNICATION WITH INVERTERS

- 1 Select inverter type.
- 2 Ensure that all the battery networking steps from pages 20 and 21 are completed.



- 3 After assigning each battery a unique address number, connect a standard Ethernet cable (included with the base and lid kit) from the CAN port of the master battery (the battery with the address set at 00) to the CAN or CANBUS port on the inverter.

Rubix batteries can be installed with or without closed loop communication with inverters. Systems that do not include active communication between the battery bank and the inverter are generally called 'open loop systems.'

### NOTE

In many applications, open loop systems outperform closed loop systems. Please follow the list on the following page to determine which option works best for you.

Rubix batteries support Sol-Ark’s protocol for closed loop communication (see pages 26-28).

The following types of systems may be good scenarios for a closed loop communication setup:

- Rubix-approved communication partner or protocol
- Time-of-use and/or peak-shave applications
- Installations performed by individuals with little brand experience
- Code/jurisdiction requirement

The following types of systems may be good scenarios for an open loop communication setup:

- Non-approved communication partner or protocol
- Off-grid, solar-charged systems
- Systems with voltage-based generator auto-start
- 24V systems

## INVERTER COMPATIBILITY

The following inverters are compatible with Rubix batteries. Please note that this is not a comprehensive or exclusive list. If your favorite inverter is not on this list, please call us to discuss compatibility. Any inverter that can operate within the parameters outlined in Rubix’s spec sheets is considered compatible.

- Sol-Ark
- Schneider Electric
- Megarevo
- MidNite Solar
- Deye
- EG4
- Victron Energy
- Outback Power
- SRNE Solar
- Magnum Energy

This list does not denote closed loop communication compatibility with inverters. Systems that do not include active communication between the battery pack and the inverter are generally called ‘open loop systems.’

# OPEN LOOP INSTALLATION

## TIPS FOR INSTALLING OPEN LOOP SYSTEMS

1. Ensure that all charging and discharging parameters are programmed on your inverter, charge controller, or other equipment related to the system.
2. Double check that charging and discharging currents are limited as needed for systems with smaller battery banks.

Rubix Stack batteries can be installed in open loop applications. In many cases, this is preferred and allows the installer greater flexibility with settings. The term 'Open Loop' simply denotes that there is no communication between the battery bank and the inverter(s). Open loop can be used even with inverters that support closed loop communication.

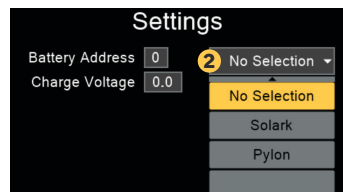
## TIPS FOR INSTALLING OPEN LOOP SYSTEMS

1. Ensure that all charging and discharging parameters are programmed on your inverter, charge controller, or other equipment related to the system.
2. Install the daisy-chain cables and set a unique address for each battery.
3. Double check that charging and discharging currents are limited as needed for systems with smaller battery banks.

# CLOSED LOOP INSTALLATION (48V)

Closed-loop communication with inverters is accomplished through CANBUS. The following steps outline this process:

1. From the Home screen on the LCD, navigate to Settings (see page 10).
2. Select the appropriate inverter protocol for your installation.



Step 2: inverter protocol

3. Program the charging voltage for your system. Rubix batteries have a unique feature called *closed loop comm plus* that allows flexible charge voltages when batteries are communicating with inverters. The maximum range is 55.0V–57.6V. The default setting is 56.0V.



Step 3: charging voltage

4. Many inverters only allow a single voltage value in closed loop communication. This means EQ, Absorb, and Float will all show the same value. This creates challenges when trying to find a happy medium of fully charging batteries yet not ‘floating’ at a high voltage. We recommend the following:
- 24/7 GRID CONNECTION AND/OR BACKUP ONLY: Set the communicating voltage to 56.0V +/- 0.2V.
  - SOLAR, GEN, OR OTHER CHARGING SOURCES THAT ONLY PERIODICALLY FULLY CHARGE THE BATTERY BANK: Set the communication voltage to 56.4V–57.0V.
5. Use the network cable that’s included with the lid and base kit to connect the master battery (address 0) to the inverter’s CANBUS port.

### CAUTION

This setting WILL NOT set or limit charge voltages in open loop applications! Open loop applications require that settings be made on your charging/discharging equipment, not on the batteries.

## EMP-HARDENED APPLICATIONS

### NOTE

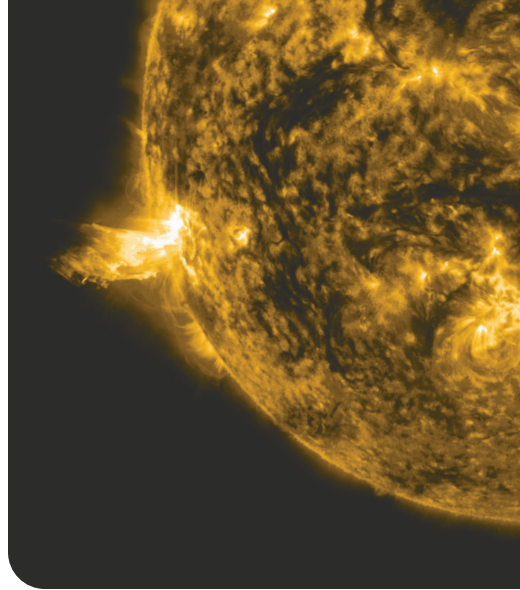
Metal serves as a great shield against electrical pulses. Keep this in mind when designing your system.

Rubix Stack batteries are certified as being EMP-hardened to a military standard (MIL. STD-461G). Our testing of certification includes RS105

radiation susceptibility testing at 50,000 volts per meter (50 kv/m).

For maximum EMP protection, observe the following installation procedures:

- Ensure that all conductors to the battery are in a metal conduit.
- Cover all unused entry holes with metal. This could be a small piece of sheet metal, a metallic knock-out plug, or even copper tape.
- Use EMP-hardened or resistant equipment throughout the system as much as possible.

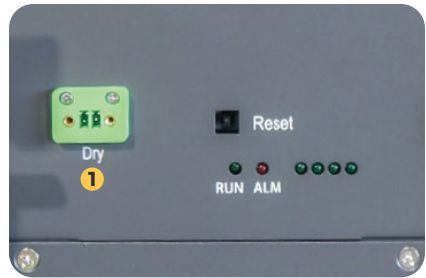


## RAPID SHUTDOWN

Rubix Stack batteries are equipped with a Rapid Shutdown feature.

To use Rapid Shutdown:

1. Connect the two pins of the RPSD port to activate rapid shutdown and turn off output power. This is most easily achieved by connecting a 2-conductor, 16-20 AWG insulated wire to a switch. When the switch is activated and the two wires are connected, RPSD is activated. A connecting plug that fits the RPSD socket is included with each battery. Rubix recommends that each battery in the bank is daisy-chained to the master battery's RPSD terminals. There should be no more than two wires per



- 1 Rapid shutdown terminals

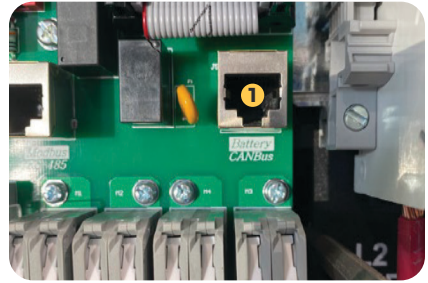
RPSD terminal (2 to each port/terminal of the battery's 2-port RPSD connector).

2. There may be up to a 15 second delay on RPSD to prevent any nuisance shutdowns.
3. After any RPSD event, the batteries may need to be power-cycled to restart.

# CLOSED LOOP COMM WITH SOL-ARK

When communicating with a Sol-Ark inverter, follow this sequence:

1. Connect the CANBUS cable from the master battery's CANBUS port to the Sol-Ark CANBUS port.
2. Navigate to Sol-Ark's Batt Setup page. Check BMS Lithium Batt, set to 00 and check the Activate Battery checkbox.



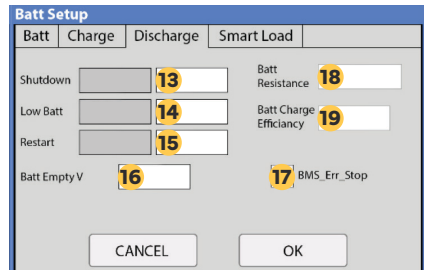
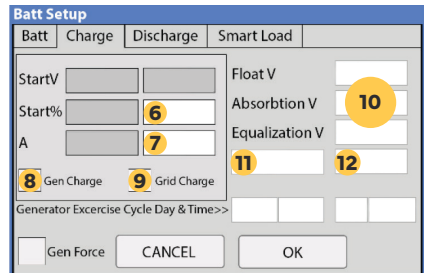
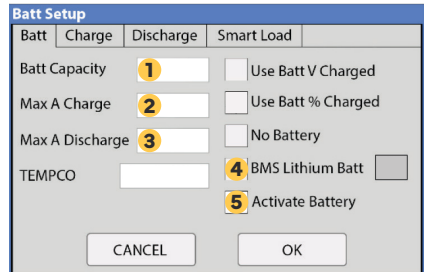
3. Ensure that all fields in the Sol-Ark inverter are filled in. The battery will auto-populate the following on the Sol-Ark inverter:

- SOC %
- Battery capacity
- Charge voltages
- Max charge current
- Max discharge current

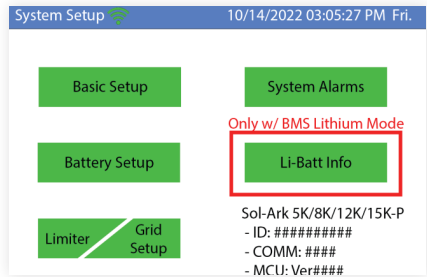
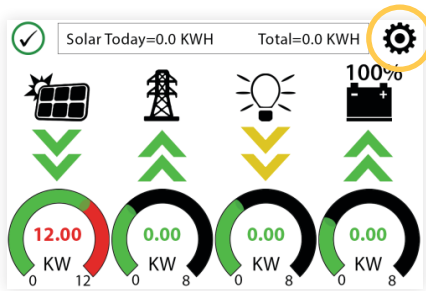
The battery will NOT auto-populate the following on the Sol-Ark inverter:

- AC coupling
- Peak shaving
- Auto start settings
- Low battery shutdown and restart

Reference the chart on the next page to confirm which settings need to be programmed manually.

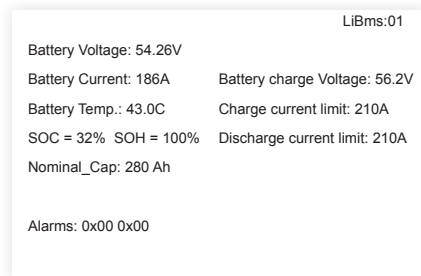


<b>Setting</b>	<b>Required Value</b>
1 - Batt Capacity	(auto-populated)
2 - Max A Charge	(auto-populated)
3 - Max A Discharge	(auto-populated)
4 - BMS Lithium Batt	check and set value to 00
5 - Activate Battery	check
6 - Start % (recommended minimum)	20%
7 - A (Amps)	take into account gen & grid limitations
8 - Gen Charge	check if charging with a generator
9 - Grid Charge	check if charging with grid
10 - Float, Absorb, Equalization	(auto-populated) value can be adjusted on battery
11 - Days (auto equalization)	set to 0
12 - Hours (equalization duration)	set to 0
13 - Shutdown (recommended minimum)	10%
14 - Low Battery (recommended minimum)	5% higher than shutdown value
15 - Restart (recommended minimum)	1% higher than Low Battery value
16 - Battery Empty	47 V
17 - BMS Err. Stop	recommended to leave unchecked
18 - Batt Resistance	(auto-populated)
19 - Batt Charge Efficiency	(auto-populated)



After completing all connections, programming, and settings, check that the closed loop communication setup is successful by pressing the gear icon from the Home

screen and then selecting the Li-Batt Info button. When closed loop communication is properly configured, the following screen will appear.



This screen shows the total battery bank values that are being communicated to the inverter. This includes:

- SOC
- Total capacity
- Charge voltage (max)
- Charge current limit
- Discharge current limit

# **USAGE & TROUBLESHOOTING**

# SYSTEM FAULT CODES

Code	Explanation	Suggested Action
SOC Low	Battery is discharged to a low level.	Connect to a charging source.
Cell OVP	An individual cell is overcharged to the point where the battery has to shut down.	Double check your charge voltage settings. If they are correct, contact tech support.
Cell UVP	An individual cell is discharged critically low and requires the battery to be shut off.	Recharge if the battery holds less than 20%. If over 20% or the fault occurs repeatedly, contact tech support.
Pack OVP	The battery is exposed to an excessively high voltage.	Check charge voltage settings.
Pack UVP	Battery is discharged to a low level.	Connect to a charging source.
Charge OCP	The charging current exceeds the maximum allowable amperage.	Check charge current (amps) settings. If there are multiple batteries in the bank, check that the other batteries are accepting a charge.
Discharge OCP	The discharging current exceeds the maximum allowable amperage.	Ensure that your battery bank is large enough to handle your loads. Check that other batteries in the bank are operational and sharing the load.
Charge UTP	The battery is too cold to accept a charge.	Battery needs to warm up. If issue reoccurs, contact tech support.
Discharge OTP	The battery is too hot to allow discharge.	Battery needs to cool down. If the issue reoccurs, contact tech support.
BMS OTP	The BMS has overheated from excessive charging or discharging.	Battery needs to cool down. If the issue reoccurs, contact tech support.
Short Circuit	The BMS has detected a short circuit or an unusually heavy surge.	Check cabling and wiring. Ensure that loads (with heavy surge) do not exceed battery surge capabilities.

# TROUBLESHOOTING UNUSUAL EVENTS

## **Why does the SOC% vary from battery to battery?**

Ensure that the batteries are networked together as outlined in the networking section of this document.

Charge batteries until voltage reaches 56.0V or higher. This will recalibrate the batteries. Recalibration charges tolerate a charge of up to 57.6V (for 48V batteries) or 28.8V (for 24V batteries).

## **Why does the LCD not light up?**

First, verify that the red switch in the wiring compartment is turned on. Then ensure that sufficient voltage is present.

## **My battery discharged until it shut off and now it won't turn on again.**

If your battery bank discharges until the voltage drops below the BMS cutoff level, the battery will shut off to protect itself. Leaving protection mode requires applying voltage to the battery terminals. This voltage should be between 24 and 27V (24V models) or between 48 and 54V (48V models). Many times this can only be achieved with a special power supply or by jumping from another battery, as most inverters will not begin charging because they don't sense the presence of a battery.

## **I warmed up a very cold battery, but it still won't accept a charge.**

Check the internal temperatures on the LCD if necessary. Allow your battery to reach 40°F and try again.

## **I'm struggling with closed loop comm. Any tips?**

Closed loop comm can be frustrating. Ensure that the following are correct:

- The master battery address is set to 0.
- The proper protocol is selected on the LCD.
- The inverter's closed loop comm is activated.
- You are using a high quality, straight-through pinout ethernet cable.

# GOOD PRACTICES FOR GOOD PERFORMANCE

Observing the following easy practices will enhance your battery bank's smooth performance.

**Charging:** It's not absolutely crucial to do so, but ensuring a full charge of 28-28.8V (24V batteries) and 56-57.6V (48V batteries) at least once per month will improve your SOC% monitoring experience, as this serves to automatically recalibrate your BMS internal percentage tracking.

**Discharging:** Try not to discharge lower than 15% and/or 25V (for 24V batteries) or 50V (for 48V batteries) to avoid nuisance battery/inverter shutoffs. On the other hand, it is fully acceptable to discharge down to 20% on every charge/discharge cycle. You don't have to worry about damaging your battery should you over-discharge; the battery will self-protect.

**LCD:** If you don't routinely check your battery status on the LCD, leave the LCD off. If you monitor it on a regular basis, leave it on.

**Environment:** Rubix Stack batteries can tolerate a wide temperature range and only the extremes should be avoided. Avoid temperatures below 32°F and greater than 110°F. Also, avoid damp areas or washdown zones.

**Batteries and children:** We love our children, and we like our batteries, but the two don't tend to mix well. While the most sensitive settings are password-protected, unqualified individuals should not operate the LCD.

**Handles:** Once the batteries have been installed, the handles can be removed and stored elsewhere to save space.

# **GENERAL SPECIFICATIONS**

## Model

**RS51100**

Energy Rating	51.2V 100Ah (5.12kWh)
Energy Scalability	32 × Parallel (163.84kWh)

## Charging/Discharging

Max Continuous Discharge Power	90A (4.6kW)
Recommended Discharge Power	75A (3.84kW)
Peak Discharge Power (3 sec)	200A (10.2kW)
Max Continuous Charging Power	70A (3.58kW)
Recommended Absorb Volts	56.8V
Max Absorb Volts (Solar Only)	57.6V
Absorb Done Amps (per Battery)	4% of capacity
Absorb Done Time	10 min
Float Voltage	54.4V
Temp Comp—mV Degrees Celsius	0
Max Recommended Discharge	51V (20%)
Inverter Low Battery Cutout	48V
Low Volts Cutout Wakeup	44V
High Volts Cutout Wakeup	55V

## Installation Requirements

Ventilation Required	No
Minimum Environment Temp	32 °F
Maximum Environment Temp	120 °F
IP Rating	IP50
Outdoor Rated	No
Installation Position	Horizontal with Base Unit Only
Maximum Batteries per Stack	7

## Terminal Specs

M8 Stainless Steel	Bolt-On
Max Terminal Torque	18 ft-lbs

## Cycle Life Rating

**RS51100**

Rated Cycle Life (100% DoD)	4,500 Cycles
Rated Cycle Life (80% DoD)	6,000 Cycles
Rated Cycle Life (50% DoD)	8,000 Cycles
Retained Capacity at End of Cycle Life	80%

## Safety Features

Breaker Current Rating	150A
BMS Low Voltage Disconnect	41 +/-1V
BMS High Voltage Disconnect	59 +/-1V
BMS Low Temp Charging Disconnect	32 °F
BMS Low Discharging Disconnect	0 °F
BMS High Temp Disconnect	135 °F
Pressure Vented Cells	Yes
Rapid Shut Down Function (RPSD)	Yes
EN IEC 61000-6-1:2019	Yes

## Certifications

Battery Certification	UL 1973, UL9540 DCESS
Transport	UN 38.3

## Internal Components

Cell Chemistry	LiFePO4
Cell Format	Prismatic
Balancing Type	Impactiv
Max Balancing Current	1.1A
Cell Connection	Welded Busbar

## Touchscreen LCD Features

State-of-Charge	Charging/Discharging Current
Fault Logging	Pack Voltage
Individual Cell Voltage	Closed Loop Comm. Plus

## Model

**RS25200**

Energy Rating	25.6V 200Ah (5.12kWh)
Energy Scalability	32 × Parallel (163.84kWh)

## Charging/Discharging

Max Continuous Discharge Power	180A (4.6kW)
Recommended Discharge Power	150A (3.84kW)
Peak Discharge Power (3 sec)	400A (10.2kW)
Max Continuous Charging Power	140A (3.58kW)
Recommended Absorb Volts	28.4V
Max Absorb Volts (Solar Only)	28.8V
Absorb Done Amps (per Battery)	4% of capacity
Absorb Done Time	10 min
Float Voltage	27.2V
Temp Comp—mV Degrees Celsius	0
Max Recommended Discharge	25.5V (20%)
Inverter Low Battery Cutout	24V
Low Volts Cutout Wakeup	22V
High Volts Cutout Wakeup	27.5V

## Installation Requirements

Ventilation Required	No
Minimum Environment Temp	32 °F
Maximum Environment Temp	120 °F
IP Rating	IP50
Outdoor Rated	No
Installation Position	Horizontal with Base Unit Only
Maximum Batteries per Stack	7

## Terminal Specs

M8 Stainless Steel	Bolt-On
Max Terminal Torque	18 ft-lbs

## Cycle Life Rating

**RS25200**

Rated Cycle Life (100% DoD)	4,500 Cycles
Rated Cycle Life (80% DoD)	6,000 Cycles
Rated Cycle Life (50% DoD)	8,000 Cycles
Retained Capacity at End of Cycle Life	80%

## Safety Features

Breaker Current Rating	250A
BMS Low Voltage Disconnect	20.5 +/-1V
BMS High Voltage Disconnect	29.5 +/-1V
BMS Low Temp Charging Disconnect	32 °F
BMS Low Discharging Disconnect	0 °F
BMS High Temp Disconnect	135 °F
Pressure Vented Cells	Yes
Rapid Shut Down Function (RPSD)	Yes
EN IEC 61000-6-1:2019	Yes

## Certifications

Battery Certification	—
Transport	UN 38.3

## Internal Components

Cell Chemistry	LiFePO4
Cell Format	Prismatic
Balancing Type	Impactiv
Max Balancing Current	1.1A
Cell Connection	Welded Busbar

## Touchscreen LCD Features

State-of-Charge	Charging/Discharging Current
Fault Logging	Pack Voltage
Individual Cell Voltage	Closed Loop Comm. Plus

## Dimensions & Spacing

Minimum Spacing between Batteries and Wall	1 inch
Minimum Spacing between Parallel Battery Stacks	None
Minimum Spacing between Top of Battery Stack and Solar Equipment on Wall	6 inches
Minimum Spacing between Battery Bank and Water Sources/Conductors	4 feet



## Weight

Battery Weight	108 lb
Base Weight	42 lb
Lid Weight	20.9 lb

**FROM ALL  
OF US IN  
THE RUBIX  
FAMILY ...**



**THANK YOU FOR  
CHOOSING RUBIX!**

# SUPPORT

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