Series Connection vs. Parallel Connection — Installation Steps

⚠️ You can choose suitable busbars in series and parallel connections. Busbars help handle high currents and are typically arranged in a parallel or stacked configuration to distribute electrical power efficiently.

ℹ️ Note that the cable connection methods provided below are for reference purposes only, as the optimal approach may vary depending on the specific situation. It is essential to consider various factors, such as the cable size, equipment used, and environmental conditions.
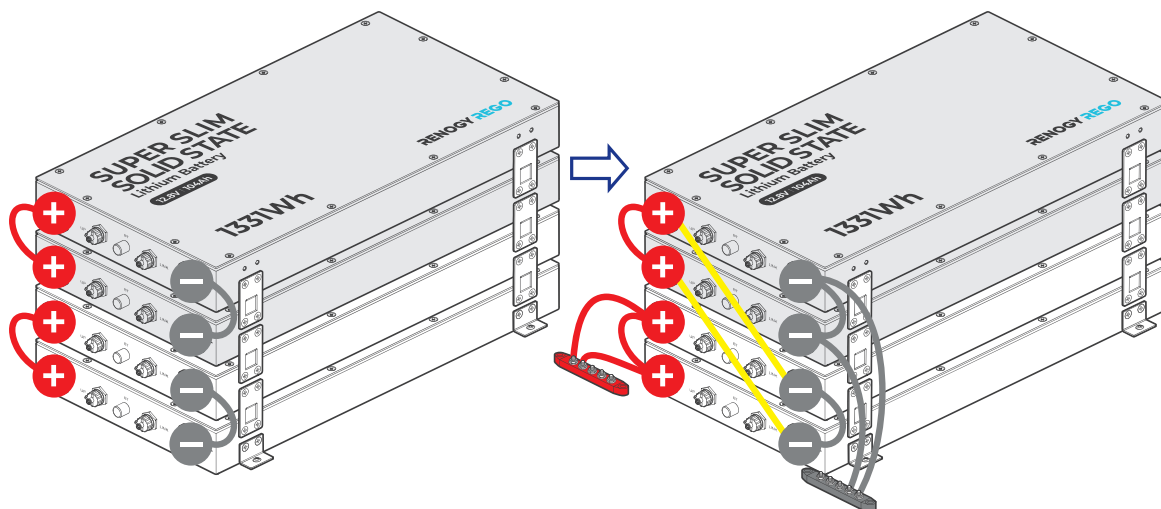
▪ Parallel Connection
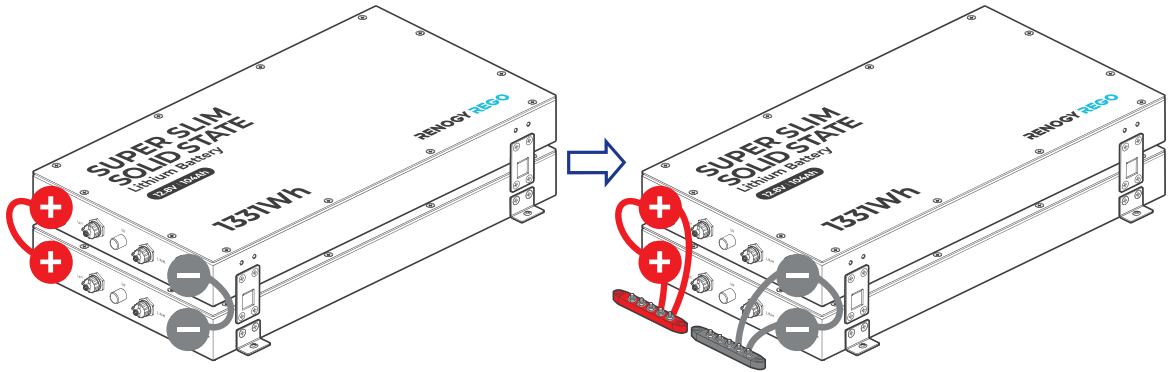
2P	Battery System	12V (12.8V) 208Ah
	Energy	2662Wh
16P (Max)	Battery System	12V (12.8V) 1664Ah
	Energy	21296Wh

▪ Series Connection
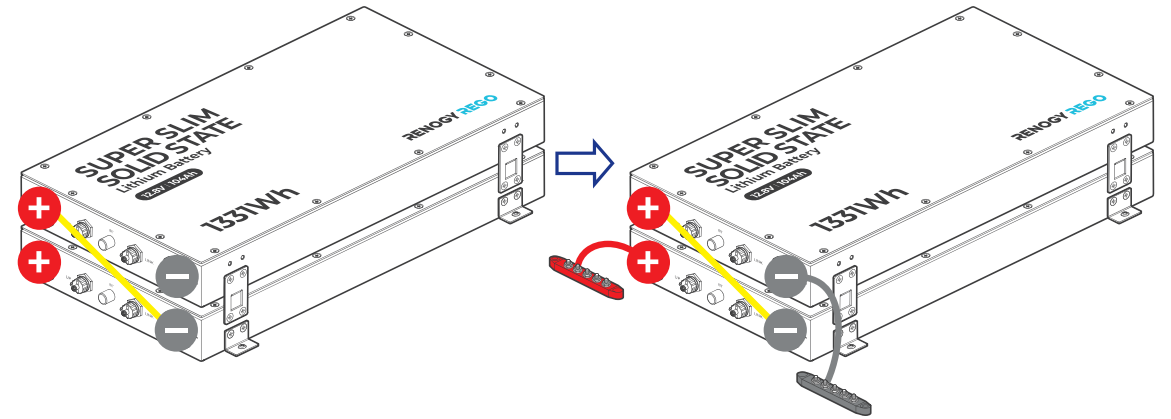
2S	Battery System	24V (25.6V) 104Ah
	Energy	2662Wh
4S (Max)	Battery System	48V (51.2V) 104Ah
	Energy	5324Wh

■ Parallel & Series Connection

2P2S	Battery System	24V (25.6V) 208Ah
	Energy	5324Wh
2P4S	Battery System	48V (51.2V) 208Ah
	Energy	10648Wh
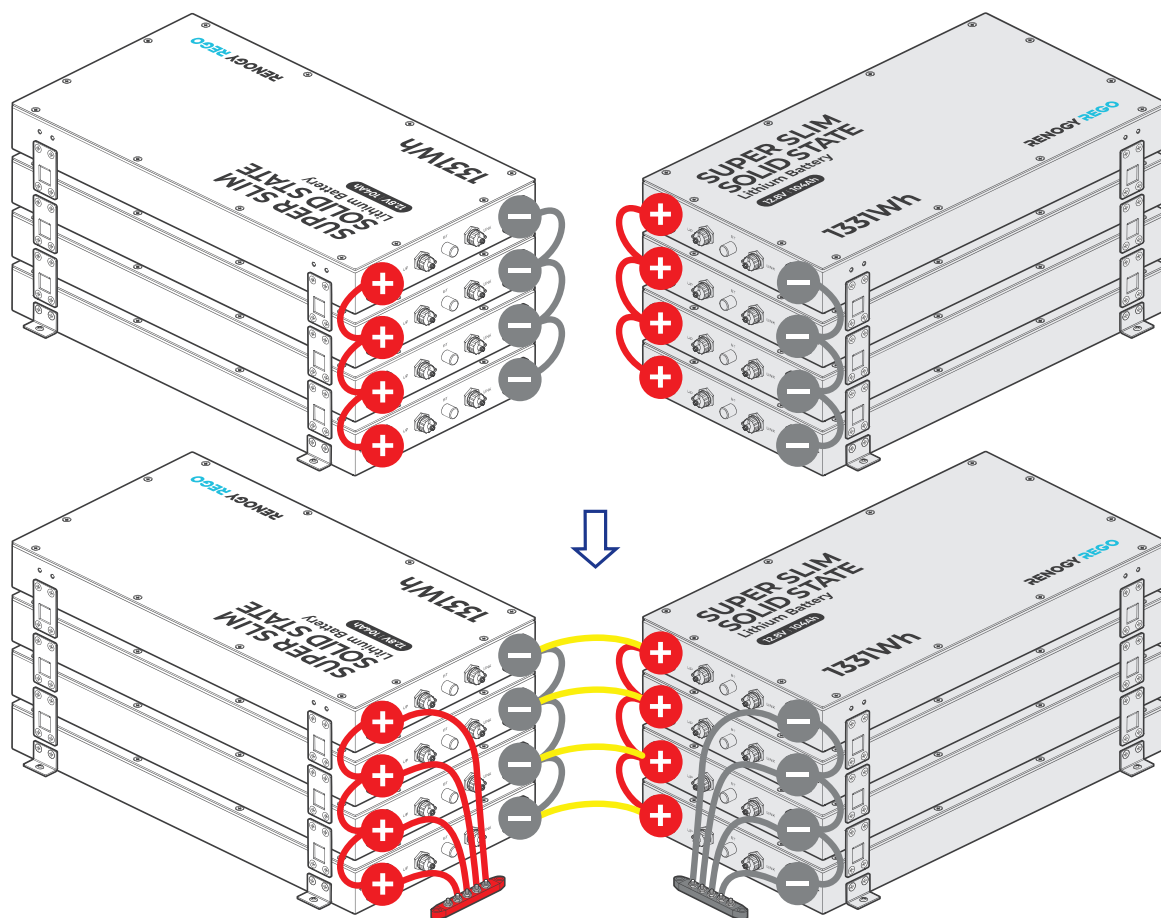
4P2S	Battery System	24V (25.6V) 416Ah
	Energy	10648Wh
4P4S (Max)	Battery System	48V (51.2V) 416Ah
	Energy	21296Wh

Battery Cell Balancing

The battery employs bypass circuit to maintain the balance between each battery cell group. Each battery cell group is connected with a bypass resistor and a switch in parallel. During the charging process, if the highest-voltage battery cell group reaches the set balancing starting voltage and the voltage difference between the highest-voltage and the lowest-voltage battery cell group exceeds the set voltage difference, the switch connected to the highest-voltage battery cell group will be closed to shunt the charge current around the highest-voltage battery cell group through the bypass resistor until the voltage difference drops below the set value. To avoid excessive energy loss, the battery cell balancing is only performed during the charging process.
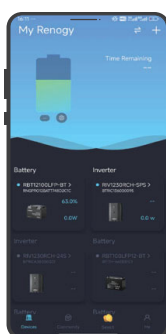
Monitoring

Depending on the specific application, the battery can establish either short-range or long-range communication connections with monitoring devices. These monitoring devices facilitate real-time monitoring, programming, and complete system management, offering comprehensive control and enhanced flexibility.

You can monitor the performance of the battery through either or both of the following methods: DC Home app (free of charge) Renogy ONE Core (sold separately).

> ⓘ Ensure the Bluetooth of your phone is turned on.
>
> ⓘ The version of the DC Home app might have been updated. Illustrations in the user manual are for reference only. Follow the instructions based on the current app version.
>
> ⓘ To ensure optimal system performance, keep the phone within 10 feet (3 m) of the battery.

To ensure the optimal device compatibility, download and log into the latest DC Home app.

🔍 DC Home App

GTE IT ON
Google Play

Download on the
App Store

Short-Range Monitoring via DC Home App

Pair the battery with the DC Home app. Monitor the battery parameters via the app.
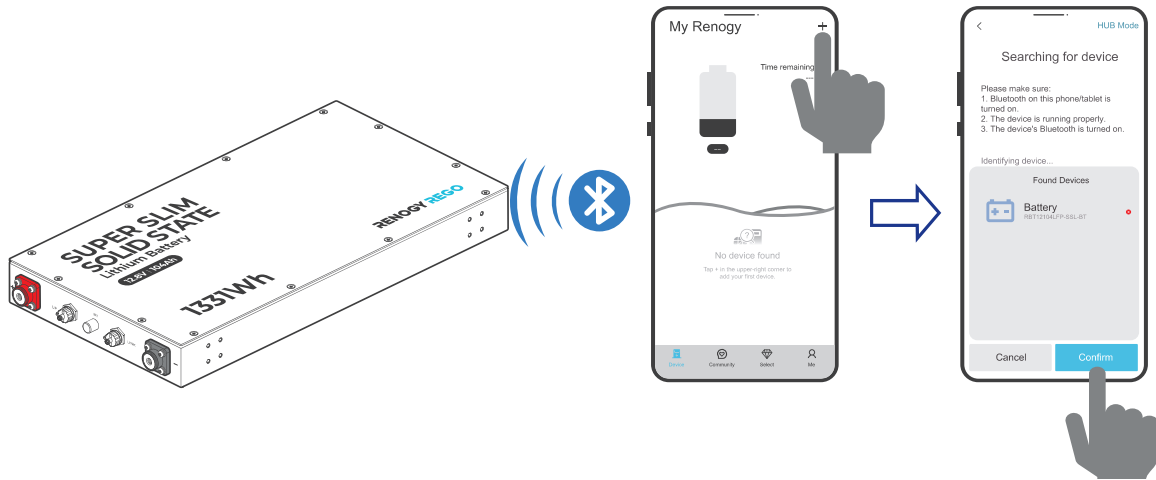
Wireless Long-Range Monitoring

If long-range communication and programming are required, connect the battery to Renogy ONE Core (sold separately) through Bluetooth, and then pair Renogy ONE Core with the DC Home app.
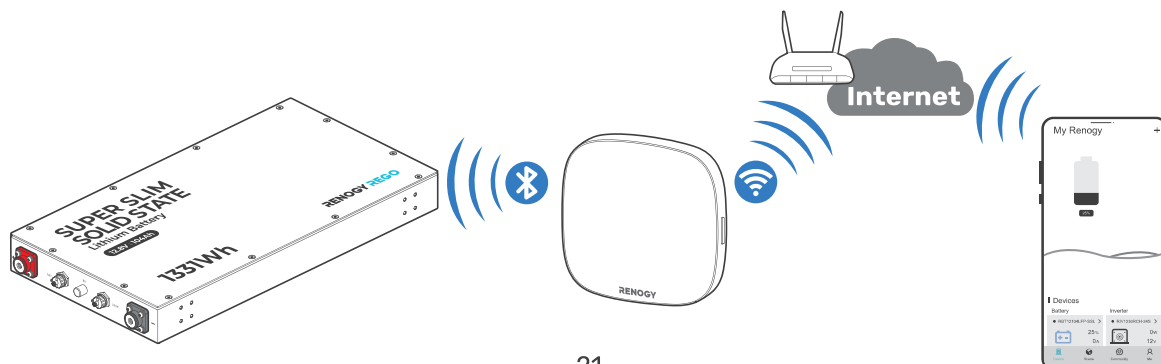
Recommended Components
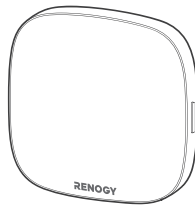
*RENOGY ONE Core

> ⓘ Components marked with "*" are available on renogy.com.
>
> ⓘ Ensure that the Renogy ONE Core is powered on before the connection.
>
> ⓘ For instructions on Renogy ONE Core, see Renogy ONE Core User Manual.
>
> ⓘ Ensure the battery does not communicate with any other device.

Step 1: Connect the battery to Renogy ONE Core through the Bluetooth of your phone.

Step 2: Pair the Renogy ONE Core with the DC Home app through Wi-Fi or by scanning the QR code in Renogy ONE Core. On Renogy ONE Core, go to "System > Settings > Pair with App" to get the QR code. For pairing instructions on Renogy ONE Core, see Renogy ONE Core User Manual.
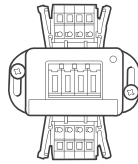
Wired Long-Range Monitoring (Backbone Network)

If long-range communication and programming are required, connect the battery to Renogy ONE Core through wires, and then pair Renogy ONE Core with the DC Home app.
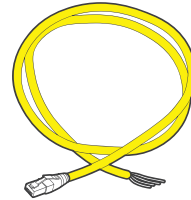
Recommended Components & Accessories

*RENOGY ONE Core   Common Drop Tap   Communication Cable
(RJ45 Plug to Bare Drop Cable)

> ℹ Components marked with "*" are available on renogy.com.
>
> ℹ Ensure that the Renogy ONE Core is powered on before the connection.
>
> ℹ For instructions on Renogy ONE Core, see Renogy ONE Core User Manual.
>
> ℹ Ensure the battery does not communicate with any other device.
>
> ℹ Select the appropriate communication cable (sold separately) according to the distance between devices. The communication cable should be less than 19.6 feet (6 m).
>
> ℹ Different terminal block plugs are used on different Common Drop Taps and follow different pinouts. If you are unsure about the pinout of the terminal block plug, contact the RV manufacturer.

Step 1: Replace the terminated drop tap at either end of the RV-C bus with the Common Drop Tap (not included). Secure the bare wires of the Drop Cable (not included) onto the terminal block plug of the Common Drop Tap following the terminal block plug pinout. Plug the Drop Cable to the RJ45 port of Renogy ONE Core. For wiring instructions on Renogy ONE Core, see Renogy ONE Core User Manual.

Step 2: Monitor and program the complete system on Renogy ONE Core or the DC Home app.