

Application Note: SolarEdge Home Battery Connection and Configuration for North America

Here you can find information on how to connect the SolarEdge Home Battery ("the battery") to a SolarEdge inverter and configure it using SetApp after the commissioning.

Connecting DC and Communication Cables

For setting up communication between the SolarEdge Home Battery and the inverter, SolarEdge strongly recommends using SolarEdge Home Network. If for some reason SolarEdge Home Network cannot be used, you can set up communication using an RS485 port, as explained in this section.

WARNING!



When using RS485 to set up communication with the inverter, do not perform DC pairing, as this will cause the battery commissioning to fail.

Use the following cable types:

- **DC** - 10 AWG (10-12 AWG), 600V insulated.
- **Communication** - 24 AWG (16-24 AWG), 600V insulated or CAT6

WARNING!

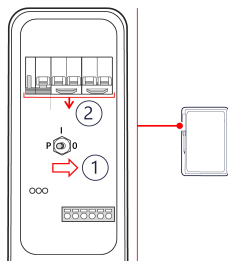


Read carefully all handling and safety instructions in the installation guides that come with the battery and the inverter.

WARNING!



Before connecting the battery to the inverter, verify that the battery is powered off.



SolarEdge Home Battery

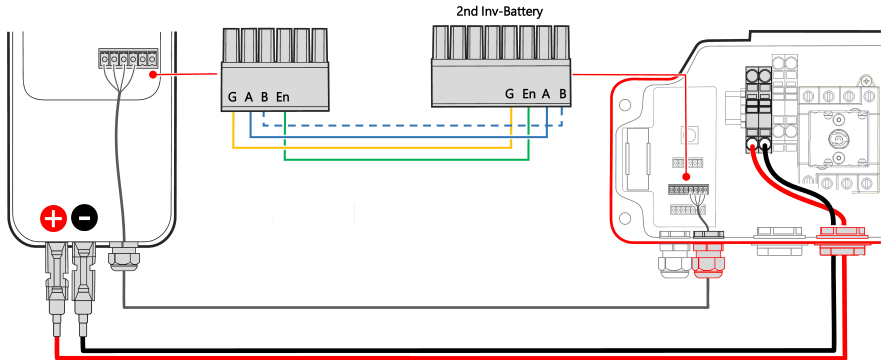
1. Toggle off the battery ON/OFF/P switch.
2. Turn off the battery circuit breaker.

Single Phase Home Hub Inverter

→ To connect communication:

1. Connect the communication cable to the battery's RS485 connector as shown below.

2. Open Communication Gland 2 at the bottom of the inverter's Connection Unit.
3. Feed the other end of the communication cable through one of the gland openings.
4. Remove the connector from the port labeled **2nd Inv-Battery** on the communication board.
5. Connect the communication cable to the connector, as shown below.



6. Close Communication Gland 2 of 50 in*lbs.

→ To connect DC cables:

1. Connect the DC cables to the battery, as explained in the installation guide that comes with the battery.
2. Pass the other end of the DC cable through the Battery conduit of the inverter.
3. Connect the wires to the DC terminals.

WARNING!



Make sure to connect the cables at correct polarity. Connecting the cables at reverse polarity may result in damage to the inverter or battery.

4. Proceed with the battery installation, as explained in the battery installation guide.

Running a Battery Self-test

You can run a battery self-test only after finishing the battery installation and configuration (refer to the battery installation guide).

The purpose of the battery self-test is to check the battery's charge and discharge functionality.

→ To run a battery self-test:

1. Make sure the battery's circuit breaker switch is ON.
2. Switch the inverter ON/OFF/P switch to ON.
3. In SetApp, select **Commissioning > Maintenance > Diagnostics > Self-Test > Battery Self-Test > Run Test**.
4. Wait for all tests to complete and check the results in the summary table.

If any of the tests have failed, see the table below for possible solutions:

Test Results	Solution
Charge failed	Check that the power and communication cables between the battery and inverter are properly connected.
Discharge failed	Check that the power and communication cables between the battery and inverter are properly connected.
Communication	Check that the communication cables between the battery and inverter are properly connected.
Inverter switch is off	Switch the inverter ON/OFF/P switch to ON.

→ To show the last test results:

- Select **Commissioning > Maintenance > Diagnostics > Self-Test > Battery Self-Test > Show Last Results**.

Enabling StorEdge Applications

This section describes how to configure your system to use StorEdge applications. Before enabling StorEdge applications, make sure to:

- Finish the battery installation and configuration (refer to the battery installation guide)
- Run a battery self-test, as described above

Backup Power Applications

The produced power is stored in the battery to be used during power outages. When the grid voltage is down, the Backup Interface automatically switches to the Backup

mode, disconnecting from the grid, while the Home Hub inverter supplies power to the backed-up loads. This application requires connection to the Backup Interface and backed-up loads (pre-selected or the entire home).

The application can be used in one of two ways:

- **Backup-only** – energy stored in the battery is discharged for backup power only, that is, when there is no power from the grid
- **Backup with Smart Energy Management**– use some of the battery energy for backup power, and the rest for maximize self-consumption(MSC) or charge/discharge profile programming (for time of use arbitrage) applications.

The Backup application can be used whether or not PV modules are installed at the site. The backup function is disabled by default and can be enabled for on- grid only application, if backup is not needed.

To start using StorEdge applications, you first need to enable the Backup Configuration functionality (disabled by default). If Backup Configuration is disabled, the system will use the battery energy in the following cases:

- When PV production is not sufficient in MSC
 - When using one of charge/discharge profiles that requires battery discharge
- However stored energy will not be used to back up the loads in case of power outage.

→ To enable Backup Configuration:

- Open SetApp and select **Commissioning > Power Control > Energy Manager > Backup Configuration > Backup > Enable**.

After the Backup Configuration is enabled, the Backup Interface is automatically configured.

→ To enable a StorEdge application:

1. Select **Power Control > Energy Manager > Energy Control**.
2. Select one of the following applications:
 - **Backup only** - Set the system to supply power to backed-up loads only in case of a power outage.
 - **Time of use** - Set a charge/discharge profile and the level of charging the battery from AC.
 - **Maximum Self Consumption (MSC)** - Set the system to maximize self-consumption, and then the level of stored energy to be reserved for backup.

Revision History

Version 1.1 - October 2022

- Changed the product name to SolarEdge Home Battery.
- Added the requirement not to perform DC pairing, when using RS485.

Version 1.0 - September 2021

- Initial document