# Application Note - SolarEdge Three Phase Home Backup Interface Commissioning

**With SetApp Version 2.xx**

## Version History

- Version 2 (July 2023) – Change in Figure 1
- Version 1 (June 2023) - Initial release

## Introduction

The SolarEdge Home Backup solution provides backup power during grid outages. When a power outage occurs, the SolarEdge Backup Interface, Three Phase (BUI) detects the grid disconnection and within 3 seconds activates the inverter in backup mode. The SolarEdge inverter seamlessly transitions into a backup power supply, drawing energy from the battery instead of the grid. This ensures that essential electrical loads are supported, providing homeowners with critical electricity during the outage.

This application note guides you through the process of adding a BUI to an existing solar system operating with a “SolarEdge Home Hub, Three Phase” (Inverter) and a "SolarEdge Home Battery 48V” (Battery).

Figure 1 shows the SolarEdge three phase backup solution.

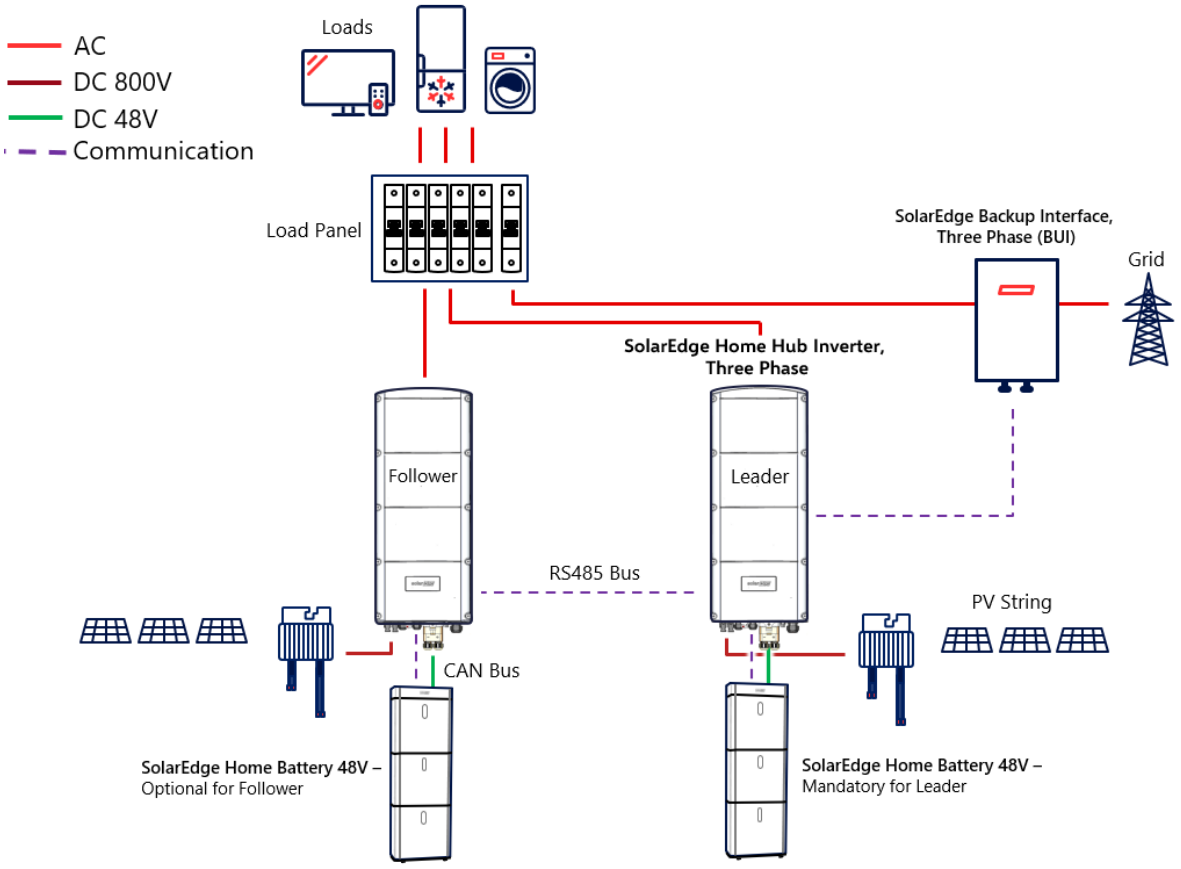



*Figure 1 SolarEdge Three Phase Backup Solution*

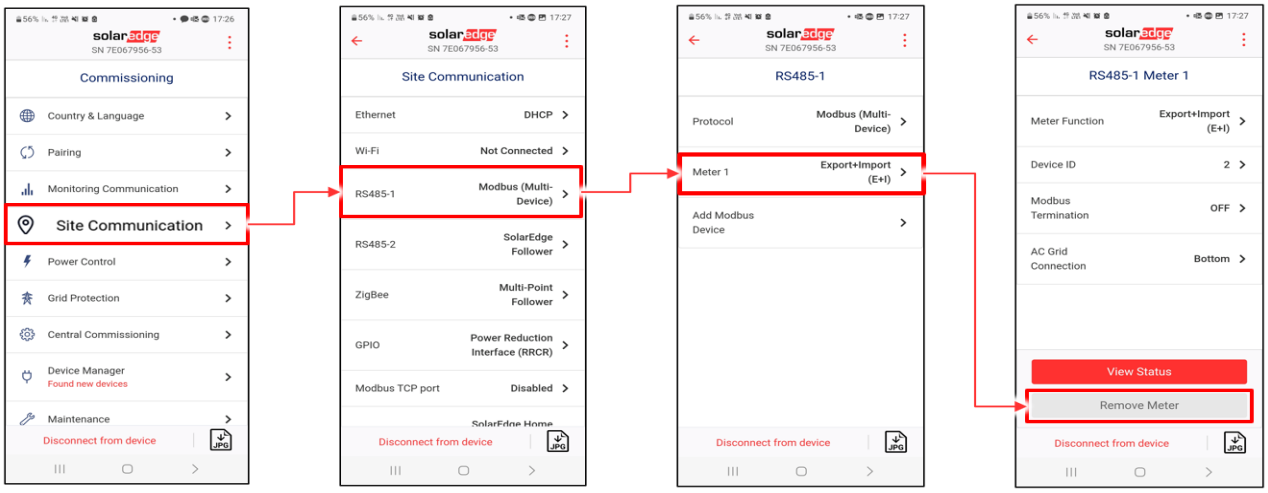
## Before You Start

- It is important to follow all the steps in the described order.
- Make sure to connect the cables in the described order.
- The BUI comes with a built-in Export/Import (E/I) meter. If a meter already exists and is installed in your solar system, **DO NOT remove the existing meter**. The following procedure will guide you on removing the external meter.
- Make sure the communication cable is **disconnected on the Inverter and BUI sides**.

# Connecting the BUI to the Inverter

→ To commission the BUI:

1. Start **SetApp**, scan the QR code on the Inverter enclosure, and follow the on-screen instructions.
2. When prompted, upgrade the Inverter firmware to version 4.17.136 or above. Do not skip this stage!
3. Now, tap ***Commissioning → Country & Grid*** to again select a country.
4. When the **Commissioning** screen is displayed, tap ***Site Communication → RS485-1 → Meter 1 → Remove Meter***.




5. Turn the switch of the Inverter to "**0**" and wait until the red LED is off (see Figure 2).

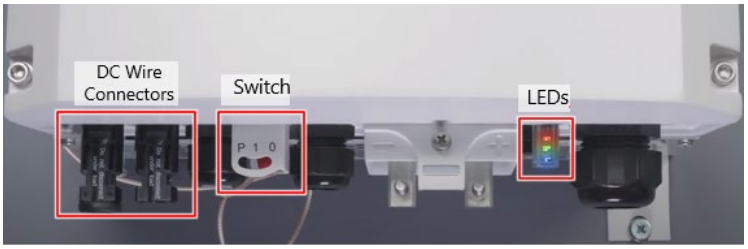



*Figure 2 SolarEdge Home Hub Inverter Three Phase - Controls and Connectors*

6. Turn off the main circuit breaker feeding AC to the Inverter.
7. Turn off the DC Switch on the battery (see Figure 3).

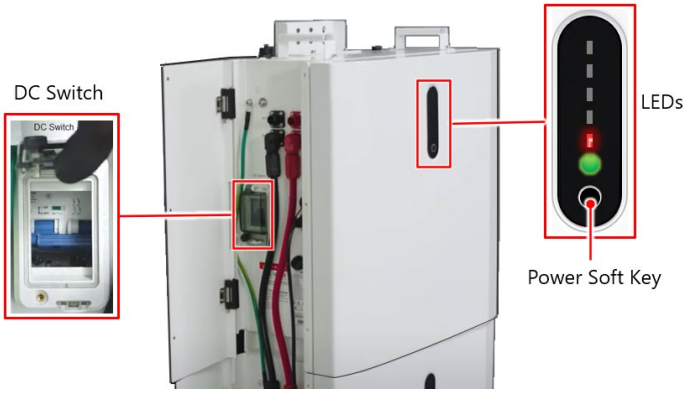



*Figure 3 SolarEdge Home Battery 48V - Controls*

8. Press the Power soft key for 3 to 6 seconds until the red LED of the battery turns off (see Figure 3).

IMPORTANT NOTE!

**Make sure all battery LEDs are turned OFF!**

9. Disconnect the DC wires of the PV strings from the inverter (see Figure 2).
10. Remove the Inverter cover – release the screws in the order shown in Figure 4.

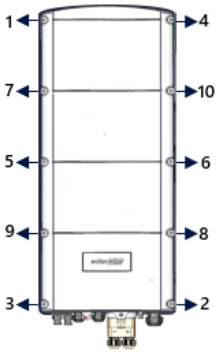



*Figure 4 Removing the Inverter Cover*

11. If an existing meter is already connected to an inverter, disconnect the communication cable from the Inverter side and the meter side.
12. Connect the communication cable between the BUI and the Inverter. Before closing the inverter, verify that all BUI cables are connected as described in the Video clip of the BUI mounting and wiring.

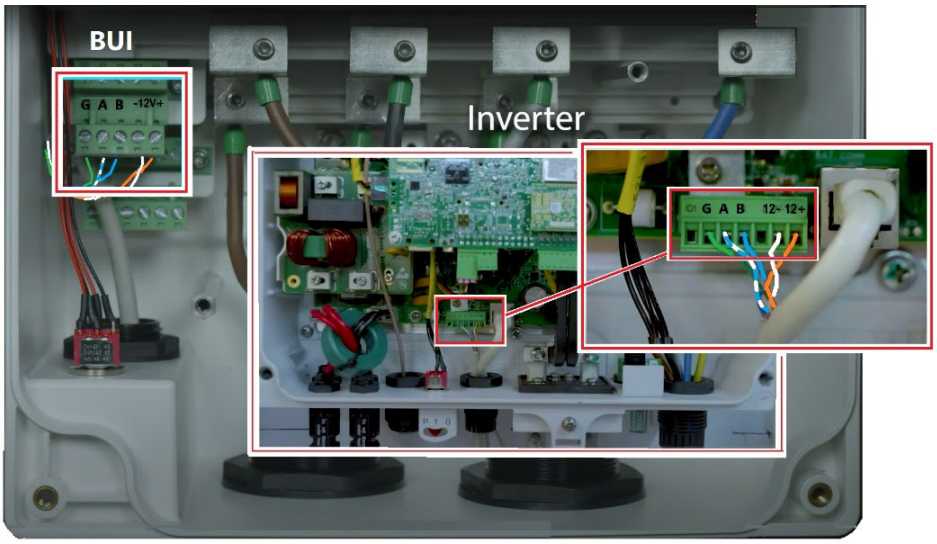



*Figure 5 Communication cable between the BUI and Inverter*

13. Close the Inverter cover – make sure to torque the screws in order (see Figure 4).
14. Connect the DC wires of the PV strings to the inverter (see Figure 2).

# Commissioning

→ To commission the BUI:

1. Turn on the main circuit breaker feeding AC to the Inverter.
2. Turn on the DC Switch on the battery (see Figure 3).
3. Press the Power Soft Key on the battery for 3 to 6 seconds till all LEDs turn on (see Figure 3).
4. Turn the switch of the Inverter to the "**I**" position and wait until a green LED start blinking (see Figure 3).
5. Start SetApp, scan the QR code on the enclosure of the Inverter, and follow the on-screen instructions.

6. When the **Commissioning** screen is displayed, turn on the BUI Switch to "**I**" (see Figure 6).

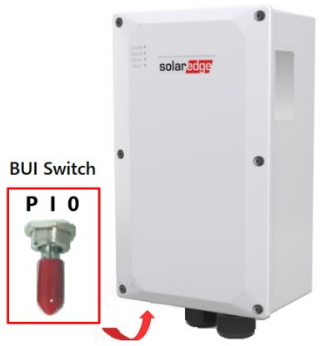



*Figure 6 SolarEdge Home Backup Interface (BUI)*

7. In the **Commissioning** screen tap ***Device Manager*** → check the box next to the **Home Backup Interface** → **Add Selected** → check next to all the items on the screen → **Continue** – The recently **Added Device** screen shows a green check mark indicating a successful installation → Tap the ← arrow to return.

IMPORTANT NOTE!

If the inverter does not detect the BUI, follow the workaround path shown in Figure 7 .

Note that the BUI was not detected because it was mistakenly detected and removed before.

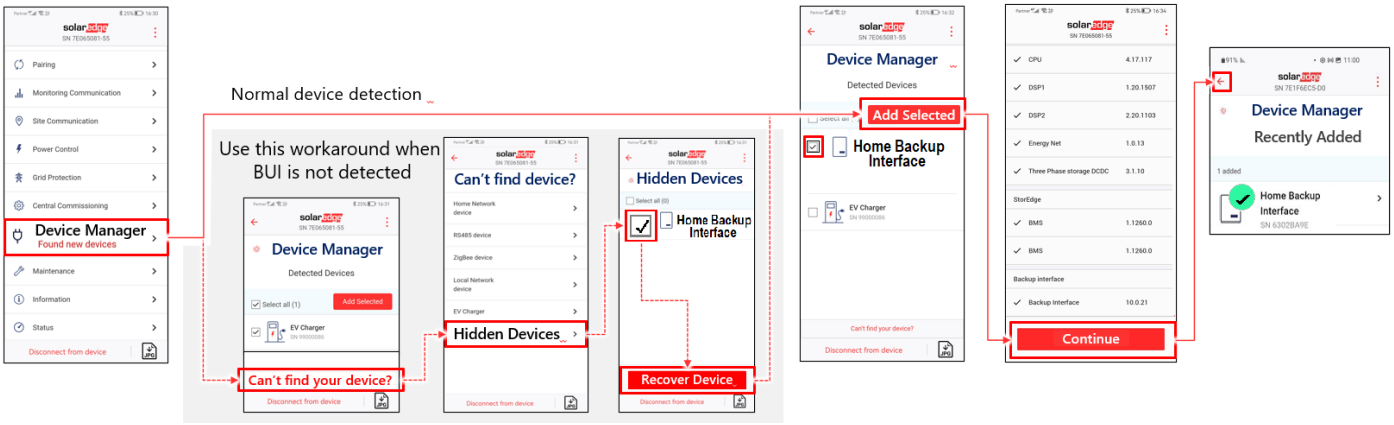
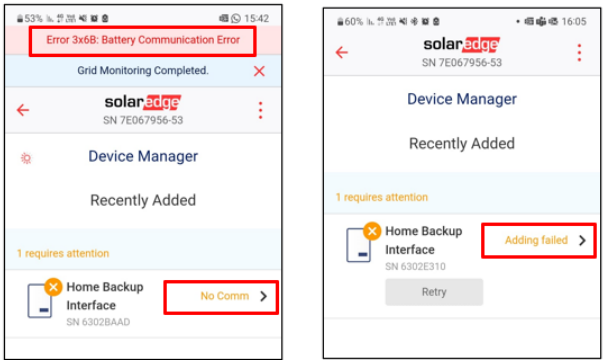



*Figure 7 Detecting the Connected BUI*

IMPORTANT NOTE!

If the BUI connects and one of the following errors is displayed: "**Battery Connection Error**" or "**Adding Failed**"




To connect the BUI, do the following:

a. Turn the Switch of the Inverter to "**0**" (see Figure 2).

b. Turn off the DC Switch on the battery (see Figure 3).

c. Press the Power soft key for 3 to 6 seconds until the red LED of the battery turns off (see Figure 3).

d. Turn off the circuit breaker feeding AC to the Inverter and verify that all LEDs are turned off. Wait for one minute and turn the circuit breaker on again.

e. Turn the Switch of the Inverter to "**I**" to turn on the Inverter (see Figure 2).

f. Turn the DC Switch of the battery to "**I**" to turn on the battery (see Figure 3).

g. Press the Power soft key to turn on the battery (see Figure 3).

h. Scan the QR code on the Inverter and follow the on-screen instructions.

i. Go to the **Device Manager** and verify that the following screen is shown with a green checkmark.

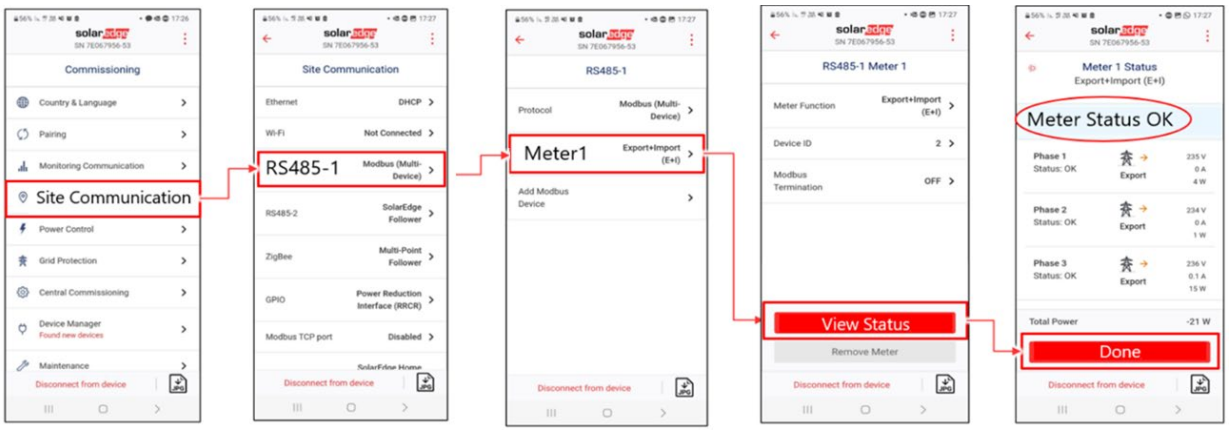



## Setting and Testing the BUI Operation

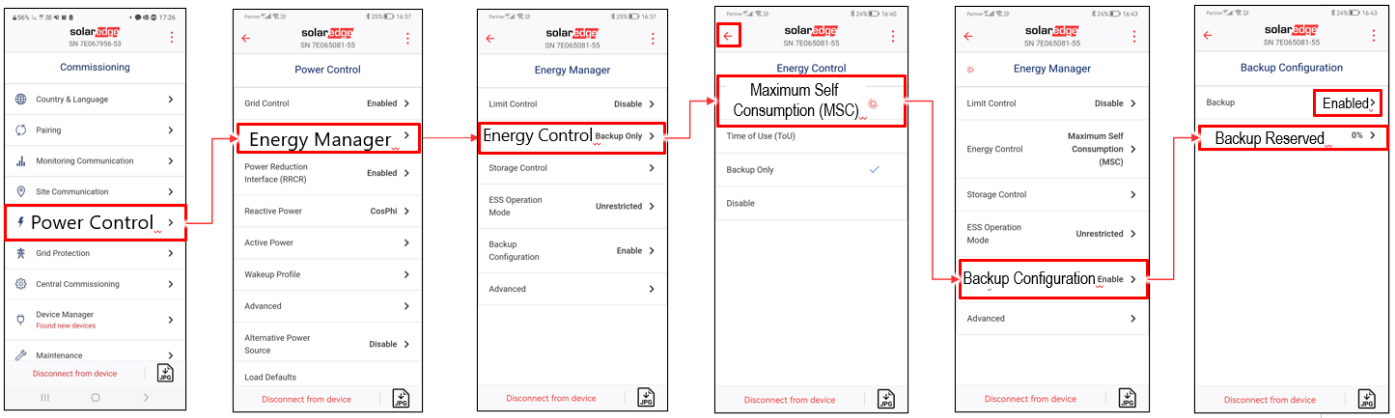
→ To set and test the BUI operation:

1. From the **Commissioning** screen, tap ***Site Communication*** → ***RS485-1*** → ***Meter 1*** → ***View Status*** – the **Meter 1 Status** screen is displayed.

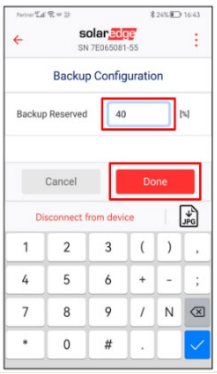
2. In the **Meter 1 Status** screen, make sure the **Meter Status OK is displayed** and tap **Done**.



3. From the **Commissioning** screen, tap ***Power Control → Energy Manager → Energy Control → Maximum Self Consumption (MSC)*** (or other energy control mode) **→ *Backup Configuration → Enable*** (Make sure backup is Enabled).




4. Tap ***Backup Reserved*** and set the amount of battery energy (in %) that will be reserved for backup.




NOTE

An example of a backup configuration is described below:

- When there are two batteries onsite, the total available energy is 9.2kWh.
- Setting **Backup Reserved** to **40%** means that 40% of the batteries energy (9.2kWh) is reserved for backup (3.68kWh) and the rest (5.52kWh) is available for self-consumption.