# SolarEdge Home Hub Three Phase Inverter – Supported Use Cases for Storage-only and Backup Installations AUS/NZ

## Revision history

- Version 1.1, Updated partial home backup & Understanding backup SOE levels
- Version 1.0, December 2025: First version

## Table of contents

## Important Notice

Using a configuration in contradiction to the instructions in this document voids the warranty of any SolarEdge equipment.

## Disclaimer



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The content of these documents is continually reviewed and amended, where necessary. However, discrepancies cannot be excluded. No guarantee is made for the completeness of these documents.

The images contained in this document are for illustrative purposes only and may vary depending on product models.

# Overview

The SolarEdge Home Hub Three Phase Inverter (SE10K-RWB48), or "SolarEdge Home Hub Inverter" or "the Inverter", can be used for various applications that enable energy independence for system owners by utilising a battery to store and supply power as needed. The Inverter, when installed in combination with the "SolarEdge Home Backup Interface Three Phase" and connected to a SolarEdge Home Battery Three Phase, provides backup power during a utility grid failure. The solution is based on the Inverter that manages both the PV system and the battery. This document describes the supported system configurations, compatible Inverters and battery models, and use cases.

For detailed information on the connection between products and the configuration of the relevant products, refer to the SolarEdge Knowledge Center and the appropriate product installation guides.

NOTE

Prerequisites for backup operation:

- A three-phase grid must be available for the installation and maintenance of the backup system. The system is not designed to work independently of the grid. The backup system must always connect to a standard three-phase grid, even if the grid is down.
- The Leader inverter must be a Home Hub Three Phase Inverter and must be connected to the Backup Interface Three Phase via RS485 for communication.
- The Leader Home Hub Three Phase Inverter must be connected to a SolarEdge Home Battery Three Phase.
- It is recommended to connect the Leader inverter to a PV string.

NOTE

All drawings in this document are for reference only. Support for combinations of inverters, batteries, and backup options are described in the Backup installations – inverter compatibility matrix section of this document.

# Compatible batteries

The compatible battery modules for the SolarEdge Home Hub Three Phase Inverter are the SolarEdge Home Battery Three Phase (BAT-05K48), refer to: https://knowledge-center.solaredge.com/sites/kc/files/se-home-battery-three-phase-datasheet-aus.pdf

# Term definitions

- The term “DC coupling” refers to a case when the inverter is connected to PV and Battery.
- The term “AC coupling” refers to cases where multiple inverters are connected in parallel on their AC side, while the PV production of one inverter can charge a battery connected to another inverter. It also refers to a case when the battery is charged from the grid.
- The term “storage-only installations” refers to systems using one or multiple inverters, at least one with a connected battery, but no Backup Interface.
- The term “backup installations” refers to systems using one or multiple inverters from which at least one is a Home Hub Three-Phase Inverter with a connected battery. In addition, the Backup Interface Three Phase is installed to disconnect from the grid during backup operation.
- RS485 connections. The Inverter has two separate RS485 bus connections: RS485-2 – labeled on the Inverter as “RS485-2” – is ONLY used to connect between leader and follower inverters.
- RS485-1 or RS485 – the SolarEdge Home Hub Three Phase Inverter has an RS485 port as part of a 7-pin connector located at the bottom of the main circuit board. This port is used to connect the Backup Interface to the Inverter. In case a wired meter is connected in addition to the Backup Interface, the meter should be connected to the RS485 connector of the Backup Interface, in addition to the cable connecting the Backup Interface to the Home Hub Inverter.

NOTE

Make sure that the RS485-1 termination is switched to ‘ON’ on both ends.

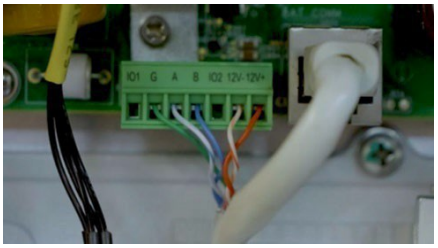


**Figure 1: Backup Interface and meter connections**

NOTE

The communication board of the SolarEdge Home Hub Three Phase Inverter has an occupied connector labelled “RS485 1,” which is used for internal connections. DO NOT remove this connection and DO NOT connect any cable to this connector.

## Recommended cables

| Cable | Cross-section | Wire type | Maximum Length |
|---|---|---|---|
| DC PV | 6 $mm^2$ | 1000V double isolation | Up to 300m |
| Battery DC | 35 $mm^2$ | 1000V double isolation,<br>Outer Diameter 11-16.5mm | Up to 5m |
| CAN | >0.25 $mm^2$ | CAT 5e/6 or twisted pair 600V insulation | Up to 5m |
| RS485 | >0.25 $mm^2$ | CAT 5e/6 or twisted pair 600V insulation | Up to 50m |
| AC cables | 2.5-16 $mm^2$ | Multi-core Outer Diameter: 15-21mm | According to local regulations |

## Communicating between multiple inverters

Using multiple SolarEdge inverters at a site requires one of them to be configured as a Leader and the others as Followers. To provide backup power, the Leader inverter must be a SolarEdge Home Hub Three Phase Inverter, connected to a battery (mandatory) and PV (optional).

The Leader inverter connects to the SolarEdge Monitoring via the Internet in one of the following ways:

- A home router using an Ethernet (LAN) cable (recommended communication option).
- Wirelessly via the built-in Wi-Fi interface. An external antenna is required (purchased separately from SolarEdge) The SolarEdge Wi-Fi Gateway can be used for simple and robust configuration and to expand the wireless range (purchased separately from SolarEdge).

Follower inverters are connected to the SolarEdge Monitoring via the Leader inverter. To communicate with the Leader inverter, the Follower inverters connect to the Leader inverter via the SolarEdge Modbus protocol using the RS485-2 communication port.

## Wired communication Leader–Follower

Connect the Leader inverter and its Follower inverters through the same dedicated RS485 bus of the inverter. For the SolarEdge Home Hub Three Phase Inverter this port is RS485-2. It is important not to share this RS485 bus with any other RS485 device such as external meters, smart devices, or backup interfaces. Connect to other devices through a separate available RS485 bus.

When connecting multiple SolarEdge inverters in Storage mode, it is recommended that the Home Hub inverter is the Leader. If the inverters are intended to be used in backup power mode, the Home Hub inverter must be configured as the Leader inverter and it must be connected to the Backup Interface Three Phase. The figure below shows the wired communication between inverters in Leader-Follower mode.

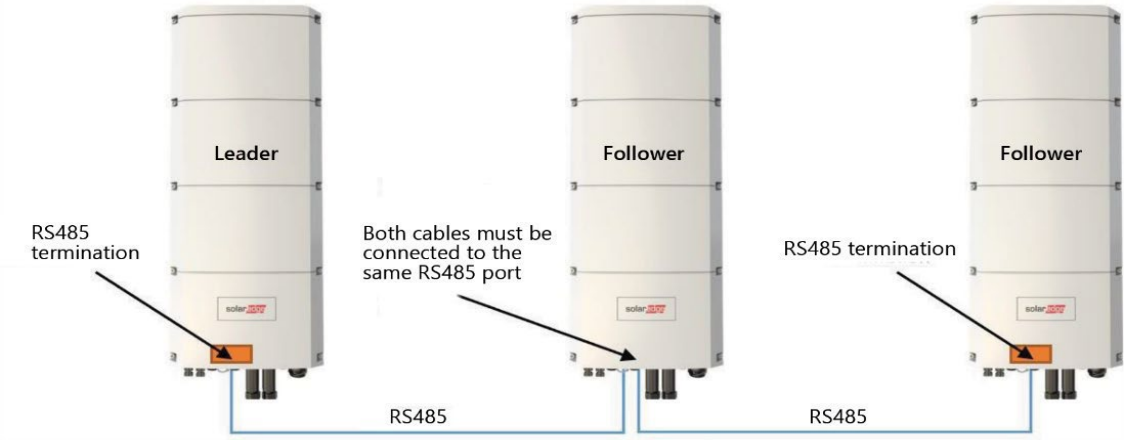



**Figure 2: Wired Communication Between Inverters**

NOTE

The Leader inverter can also be positioned in the middle of the daisy-chained RS485-2.

The RS485 is a serial bus type of connection, which means the wires must be connected in parallel from one inverter to the other. The middle inverters must have the two cables from the other inverters connected in parallel at the same RS485-2 port.

For detailed instructions on how to connect the Leader and Follower inverters, refer to the product installation guide of the inverter.

# Using meters

## Backup installations

- Full Home Backup (FHB): The internal export/import meter of the SolarEdge Home Backup Interface Three Phase (BUI) must be used.
- Partial Home Backup (PHB): For Partial Home Backup, connect selected loads to the grid side (upstream) of the backup interface (labelled “GRID”). A separate SolarEdge meter must be installed as an export/import meter at the grid connection point to control the system. This meter must communicate with the Leader inverter via SolarEdge Home Network (“Home Network”) or via RS485 protocol. When connected through RS485, the meter must be connected to the RS485 port of the Backup Interface.
- Third-party inverters. To correctly display the production of third-party inverters in the monitoring platform, an “ext. production meter” must be installed. These meters must communicate with the Leader inverter via SolarEdge Home Network or via the RS485 port of the backup interface.
- A combination of partial home backup and third-party inverters is permitted using the guidelines defined above.

NOTE

When a backup system comprises of Leader SolarEdge Home Hub Three Phase Inverter and the Follower/s being SolarEdge Residential Three Phase inverter (SE5K-AUB to SE10K-AUB) with a SolarEdge Energy Bank 10kWh Battery (BAT-10K1P). The overall SOE will be the combined total of all batteries in the system. However, the backup reserve value must consider that the SolarEdge Residential Three Phase inverters will not operate in backup, and the reserve capacity energy volume will only be available from the SolarEdge Home Hub Three Phase Inverter, although the total system capacity will be shown.

## Storage-only installations

- A SolarEdge meter must be installed as an export/import meter at the grid connection point to control the system. This meter must communicate with the Leader inverter via SolarEdge Home Network (“Home Network”) or via the dedicated RS485 port (a 7-pin connector, at the bottom of the inverter; used to connect the backup interface in Backup installations).
- If a third-party inverter is used, an additional SolarEdge meter can optionally be installed at the AC output of the third- party inverter as an ”ext. production meter” to correctly display the production in the monitoring platform. This meter must communicate with the Leader inverter via the SolarEdge Home Network (“Home Network”) or via RS485-1 port over the export/import meter.

## Connecting multiple inverters to the same AC grid

- When installing multiple inverters, all inverters and the Backup Interface unit must have the same phase sequence and consistent phase mapping. The figure below shows the AC wire terminals of an inverter.

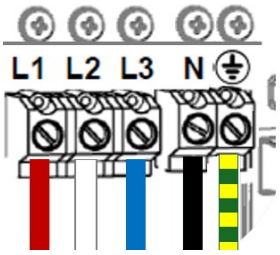



**Figure 3: Inverter AC wire terminals**

## Prerequisites for backup operation

- A three-phase grid must be available for the installation and maintenance of the backup system. The system is not designed to work independently of the grid. The backup system must always connect to a standard three-phase grid, even if the grid is down.
- The Leader inverter must be a Home Hub Three Phase Inverter and must be connected to the Backup Interface Three Phase via RS485 for communication.
- The Leader Home Hub Three Phase Inverter must be connected to a compatible battery.
- It is recommended to connect the Leader inverter to a PV string.

# Backup installations – inverter compatibility matrix

The following table provides a compatibility matrix for combinations of inverters, batteries, and backup options. Note that some of the configurations described in this table require specific firmware version support. For availability and more details, consult your sales representative.

Using a configuration in contradiction to the instructions in the document is not supported and is a warranty exclusion case. Follower inverters in multi-inverter configurations are limited to SolarEdge inverters with SetApp only (firmware version 4.21.xx or later).

NOTE

The table below is also relevant to:

- Partial home backup installations
- Three phase Home Hub Inverter in Storage-only installations

NOTE

- The “current release” mentioned in the table refers to SolarEdge inverter firmware version 4.21 or later.
- For the release date of “future releases”, contact your SolarEdge sales representative.

NOTE

SolarEdge Single Phase Home Hub inverters are not supported as Follower invertesr in Storage-only and Backup Installations.

IMPORTANT

When referring to the power of the inverter while in battery-only operation, the reference is always to installations with 2-5 battery modules. When a single module is connected, the maximum power during battery-only operation is 4kW.

| Configuration | Leader | No. of Follower Inverters | Follower Inverter types | Compatibility and Maximum AC Power in st | Reference |
|---|---|---|---|---|---|
| Single Inverter | SolarEdge Home Hub Three Phase Inverter - (SE10K-RWB48) | N/A | N/A | Battery only: up to 5kW<br>PV + battery: up to inverter nameplate | Basic Configuration – Single Inverter |
| Multiple SolarEdge Inverters | SolarEdge Home Hub Three Phase Inverter - (SE10K-RWB48) | Up to two inverters from the supported types | SolarEdge Home Hub Three Phase Inverter (SE10K-RWB48) | In addition to the leader, each SE10K-RWB48 inverter produces:<br>* Battery only: up to 5kW<br>* PV + battery: up to 10kW as per the inverter nameplate | Backup installation with Multiple Inverters, PV Strings, and Batteries |
| | | | SolarEdge Residential Three Phase inverter (SE5K-AUB to SE10K-AUB) | Only the Leader produces energy during backup, similarly to a single inverter configuration. | Backup installation with Multiple Inverters, PV Strings, and Batteries |
| | | | SolarEdge Three Phase Inverter (SE15K, SE16K, and SE17K) | Only the Leader produces energy during backup, similarly to a single inverter configuration. | Backup installation with Multiple Inverters, PV Strings, and Batteries |
| | | | SolarEdge Home Hub Inverter - Single Phase and SolarEdge Genesis - Single Phase Inverter | Only the Leader produces energy during backup (off-grid) operation. | Installation of SolarEdge Home Hub Three Phase Inverter with a SolarEdge Single Phase InverterS |

| Configuration | Leader | No. of Follower Inverters | Follower Inverter types | Compatibility and Maximum AC Power in Backup Mode | Reference |
|---|---|---|---|---|---|
| Third Party Inverters | SolarEdge Home Hub Three Phase Inverter (SExxxK-WB48) | Any number of third-party inverters (which can be installed with any of the SolarEdge inverter models listed above) | Third-party inverters connected only to the GRID side of the BUI. | Only the Leader inverter produces energy during backup, similarly to a single inverter configuration. | Backup installation with third party inverters, PV Strings, and Batteries |

# System diagrams

## General system configuration with multiple inverters, storage, and backup

Figure 4 displays a high-level system diagram that includes backup and storage. The backup interface communicates with the Home Hub Inverter (leader) via an RS485 bus. For detailed information of the BUI and Inverter's installation refer to the BUI and the Inverter installation manuals. The follower inverters in this diagram can be any of the inverters defined in the table above with their respective supported batteries.

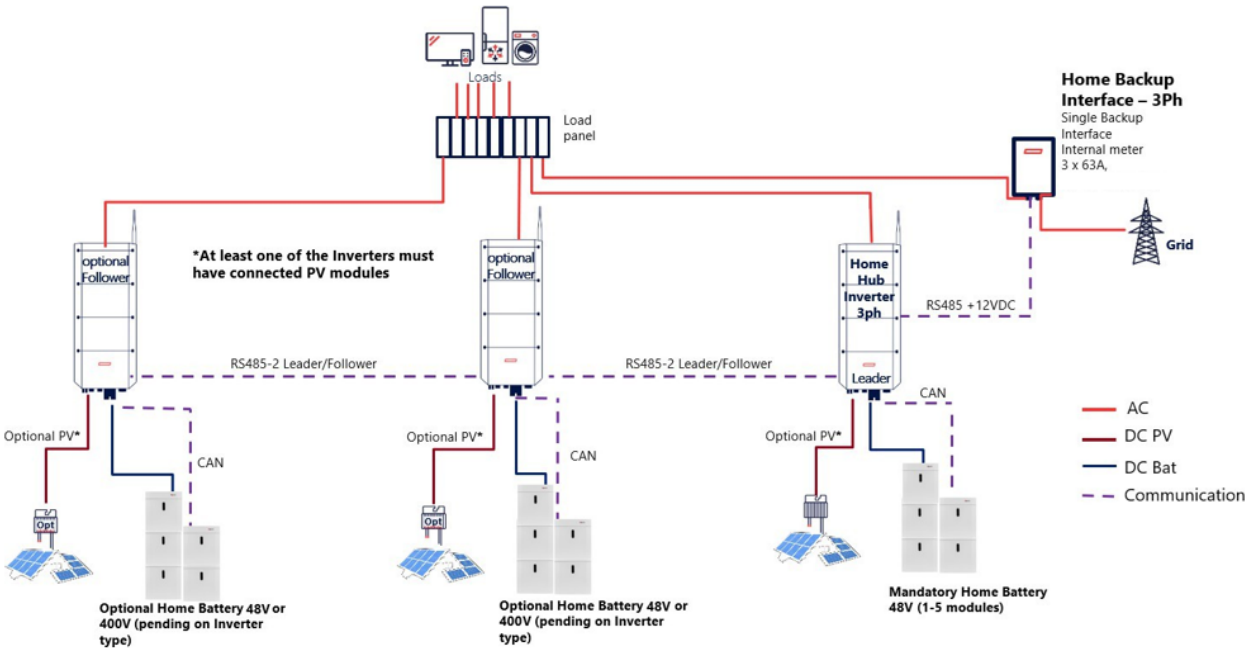



**Figure 4: Backup Power and Storage System Diagram**

## Basic configuration – single inverter

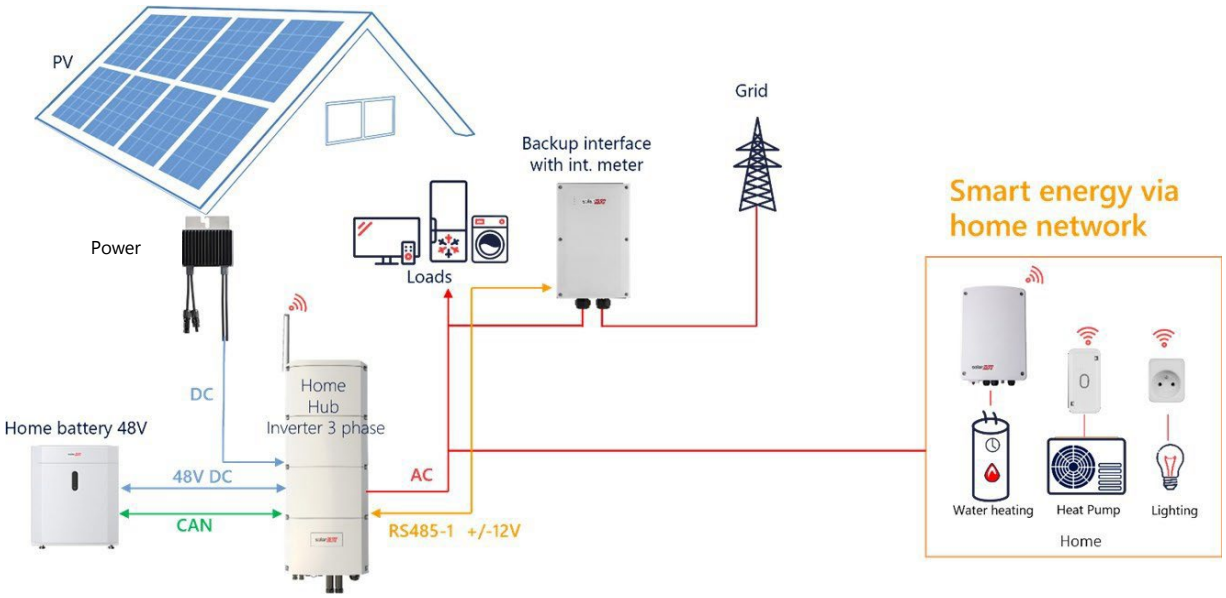



**Figure 5: Backup installation - single inverter**

## Backup installation with multiple inverters, PV Strings, and batteries

NOTE

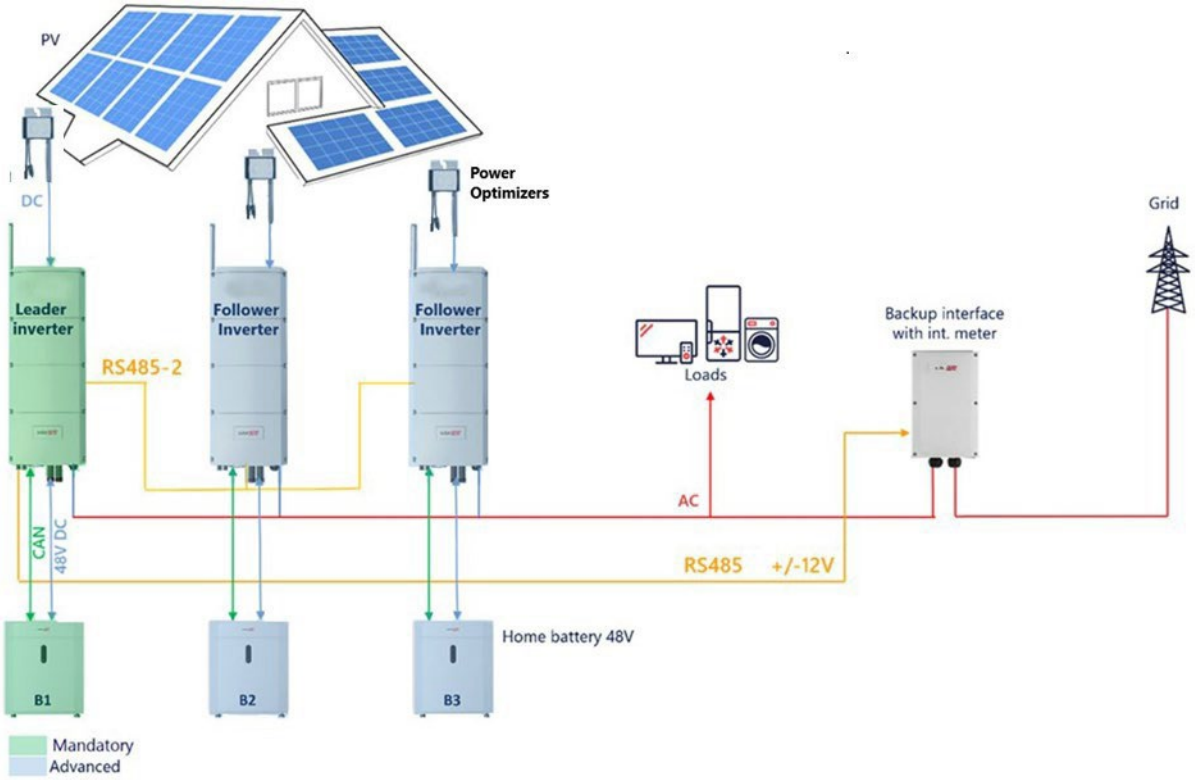
Support for this use case is pending the installation of a residential firmware version.

Contact your SolarEdge support representative for guidance.

The drawing below displays the Follower Inverters SE10K–RWB48, but they can also be one or two of the following models as defined in Backup Installations – Inverter Compatibility Matrix

- SE5K-AUB, SE10K-AUB
- SE12.5K, SE15, SE16, SE17K

**Figure 6: Backup Installation with Multiple Inverters, PV Strings, and Batteries**




NOTE

At least one SolarEdge Home Hub Inverter must be connected to a PV string.

## Backup Installation with third-party inverters, PV strings, and batteries

The drawing below shows the third-party inverters or non-supported SolarEdge Follower inverters being installed on the “GRID” side (outside the island grid). In the current release, this is valid for the following inverters:

- SolarEdge SE10K–RWB48
- Third-party inverters

NOTE

A third-party inverter can be connected as follows:

- On the GRID side of the BUI.

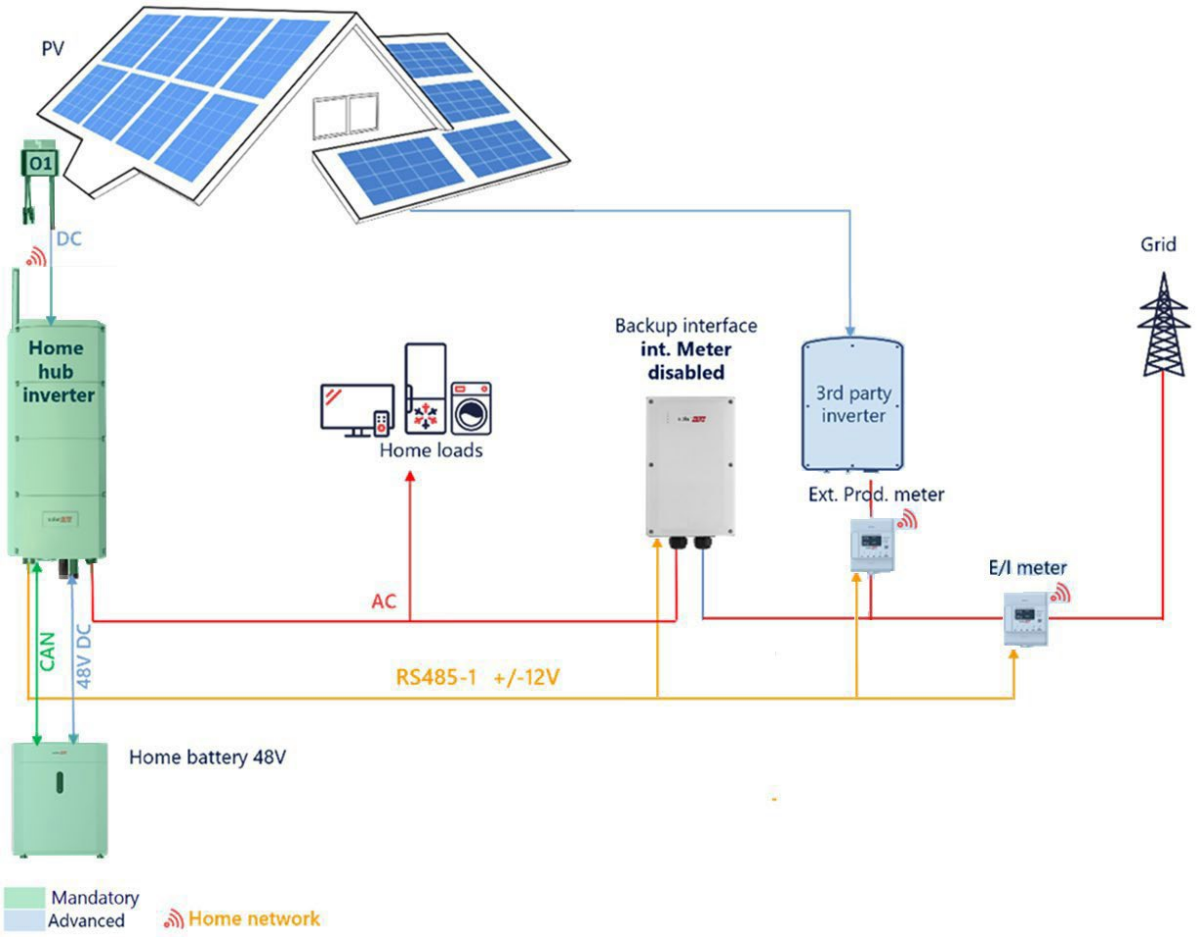



**Figure 7: Backup installation with third-party Inverters or SolarEdge SExxxxH-RWB Inverters**

# Backup installation for partial home backup

NOTE

In a partial backup solution or systems with loads on the grid side, such as non-essential, high-draw loads or EV Chargers, the integrated import/export meter in the backup interface cannot be used. Instead, an external import/export meter must be installed at the grid connection point.

For this option, it is necessary to disable the integrated meter and enable the external meter.

For detailed setup instructions how to disable the BUI integrated meter, refer to the commissioning section in the installation manuals of the relevant meters and backup interface.

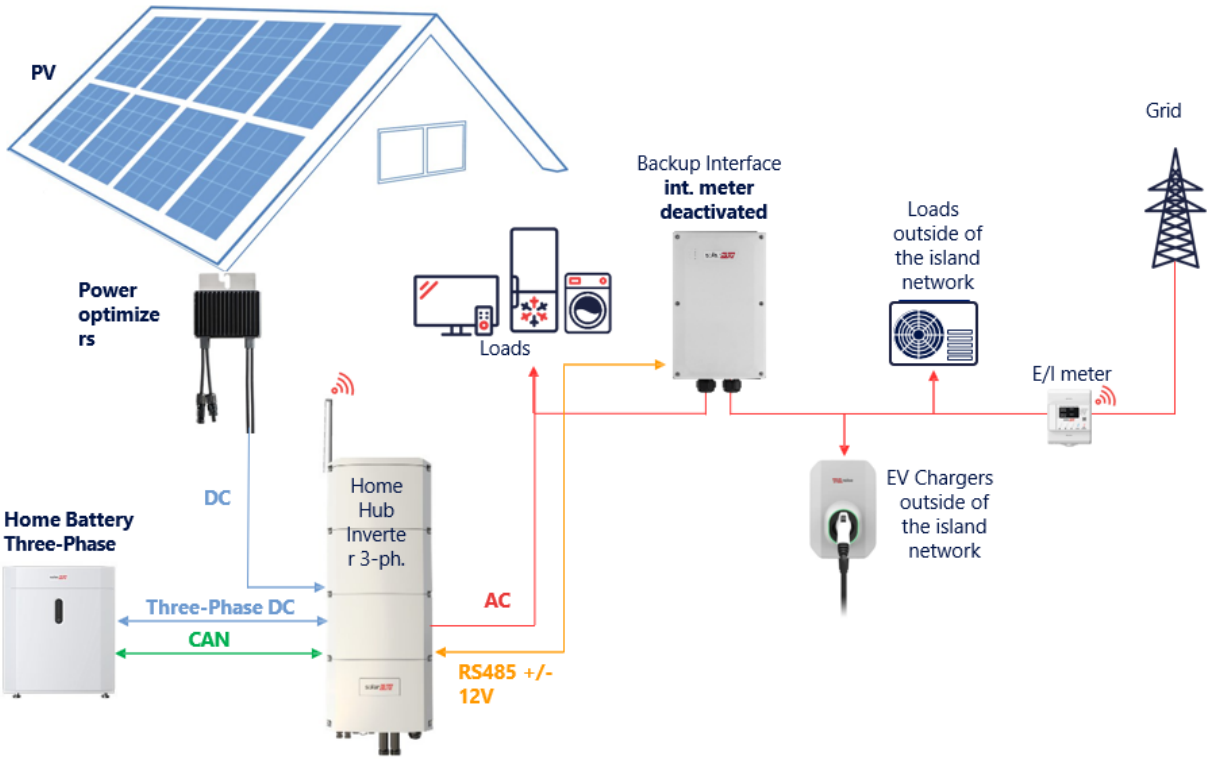



**Figure 8: Backup Installation for Partial Backup**

# More examples

## Installation of SolarEdge Home Hub Three Phase Inverter with a SolarEdge Residential Three Phase Inverter

In the current release, this is valid for the following inverters:

- SolarEdge SE10K–RWB48
- SolarEdge SExx10K-AUB

NOTE

The SolarEdge Residential Three Phase Inverter (SExxK-AUB) can only have a single SolarEdge Home Battery (Home Battery 400V) connected.

The SolarEdge Residential Three Phase Inverter will not operate in backup, only the SolarEdge Home Hub Three Phase Inverter will.

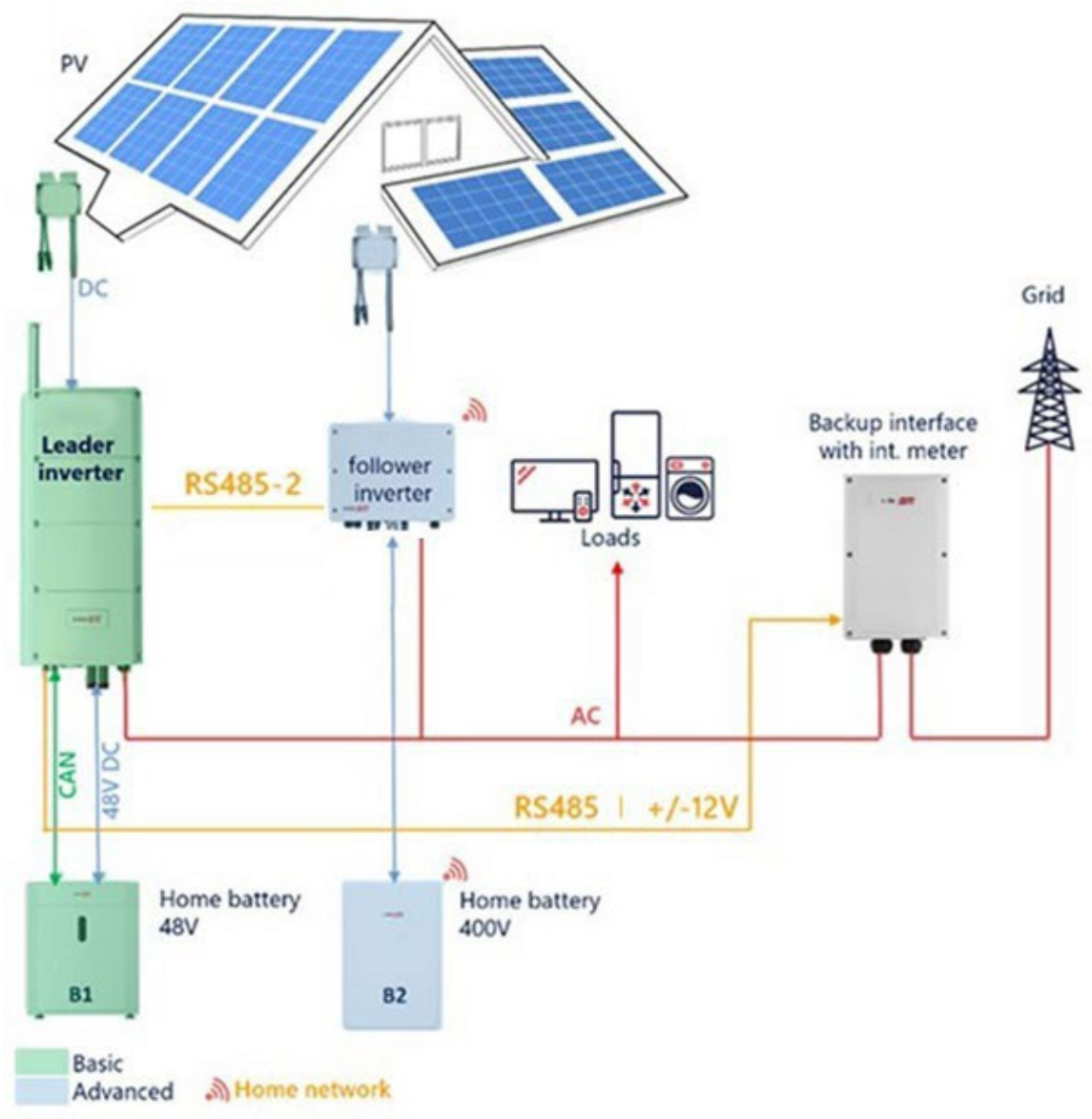



**Figure 9: Installation of Home Hub Three Phase Inverter with a StorEdge Single Phase Inverter**

NOTE

For support schedule and feature information, see the chapter:
Backup installations – inverter compatibility matrix.

# System configurations with inverters and batteries (storage-only installations)

Storage only installations refers to installations in which there is no Backup Interface installed, thus the system can produce energy only when in on-grid mode (e.g. grid is available). The leader inverter on this document is assumed to be “SolarEdge Home Hub Inverter – Three Phase” and must have storage connected.

here is always an option to upgrade a storage only installation to a backup installation by adding the Backup Interface. For detailed information please refer to the Backup Interface installation and the commissioning section of the Home Hub Inverter – three phase

## DC-coupled installation

The DC-coupled installation is based on one SolarEdge Home Hub Three Phase Inverter and is suitable for most residential systems. The main components are the SolarEdge Home Hub Three Phase Inverter, a SolarEdge energy meter, the SolarEdge Home Battery Three Phase, and Power Optimizers.

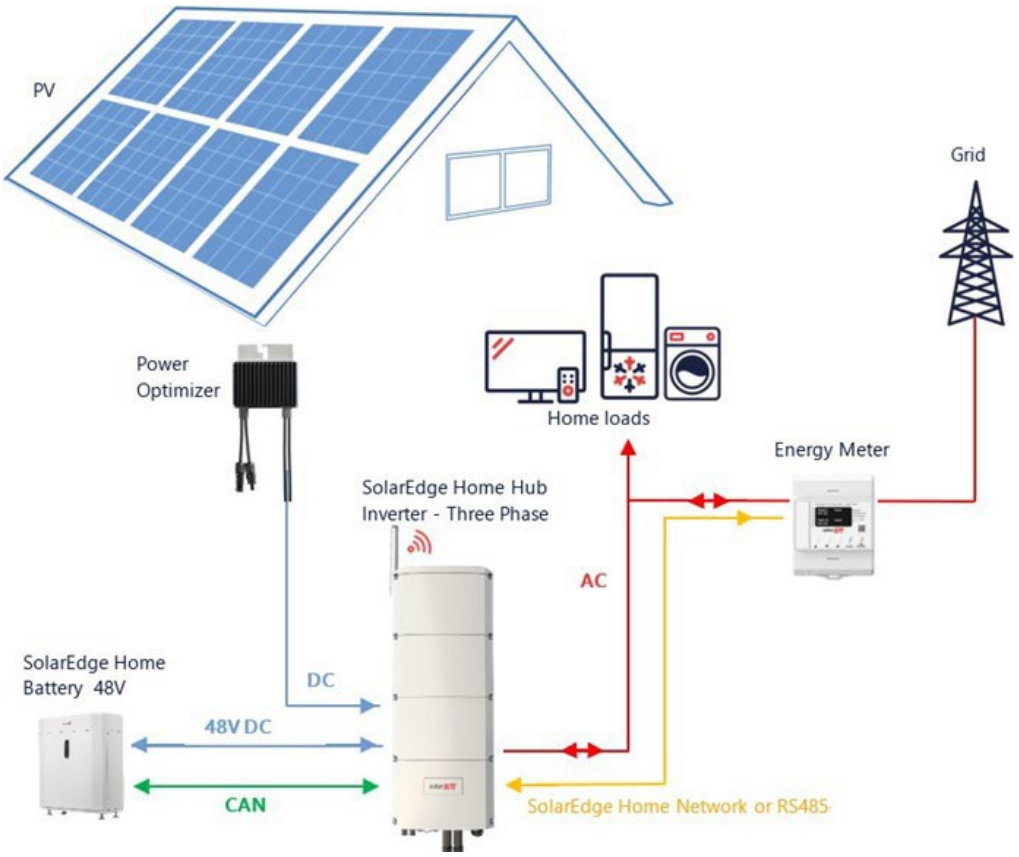



**Figure 11: DC-Coupled Storage-only installation**

## AC-coupling using SolarEdge inverters in storage-only installations

The figure below shows a site where a Home Hub Three Phase Inverter is AC-coupled with an existing SolarEdge Three Phase Inverter. In addition to AC-Coupling, the SolarEdge Home Hub Three Phase Inverter can also be connected to a string of Power Optimisers.

If the two inverters are not connected by Leader-Follower communication, working in Maximise Self-Consumption (MSC) mode is done by connecting a production meter to the AC output of the existing inverter and its communication to the SolarEdge Home Hub Three Phase Inverter (Leader). Connecting the meter to any inverter other than the Leader is not permitted. For detailed connection procedures refer to the installation guide for the inverter.

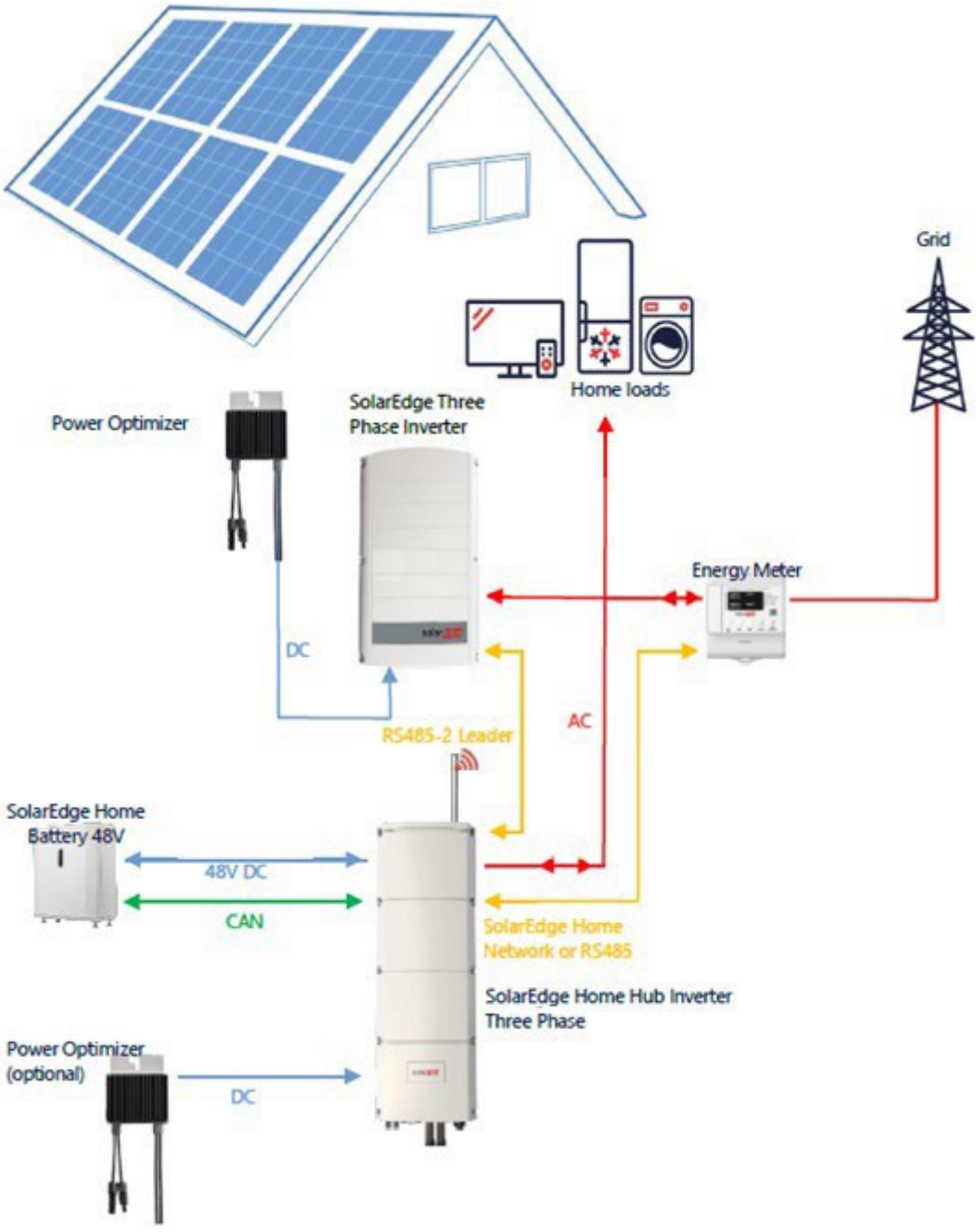



**Figure 12: Home Hub Three Phase Inverter AC-coupled to an Existing SolarEdge Three Phase Inverter**

## AC-coupling - multiple three phase inverters in storage-only installations

For sites that require additional storage capacity and more power, up to three inverters can be used. The Leader MUST be a Three Phase Home Hub inverter connected to a battery, while the other inverters may be connected to a battery. The Leader inverter MUST be connected to a PV string. All inverters MUST be interconnected to provide MSC mode.

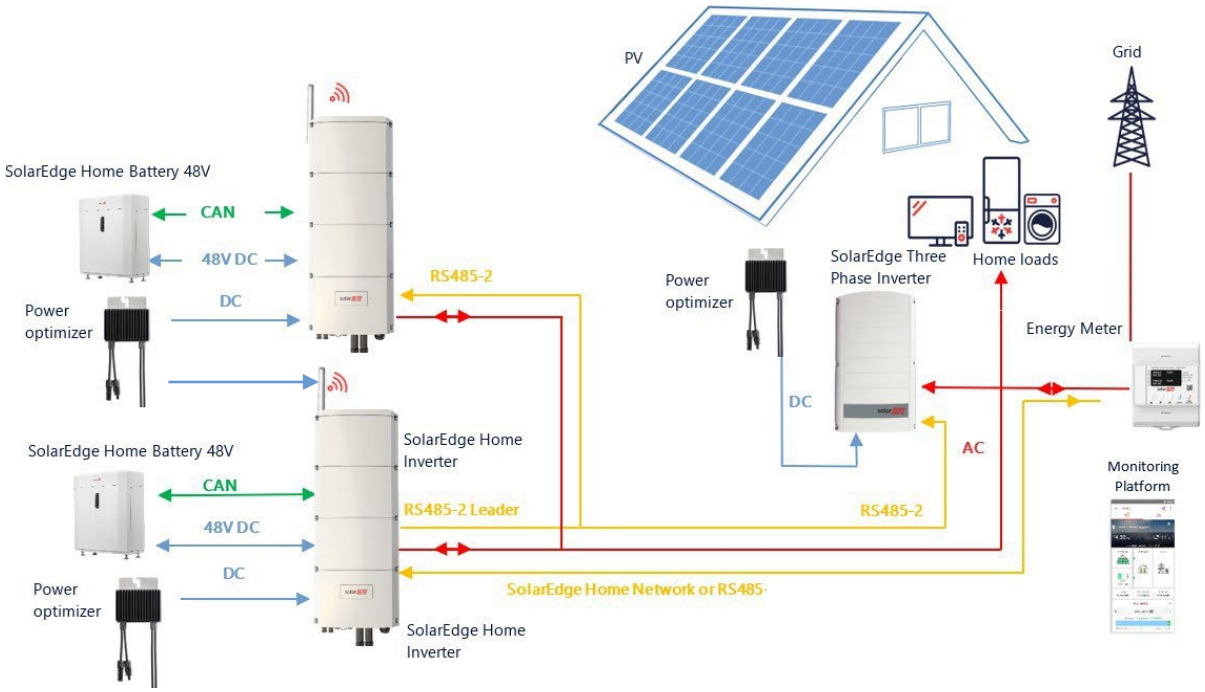



**Figure 13: AC-Coupling - Multiple SolarEdge Three Phase Inverters**

Up to three SolarEdge Inverters may be connected to PV strings or can be AC-Coupled to a non-SolarEdge power source. In this configuration, no more than three inverters can be connected in a Leader-Follower configuration.

## AC-coupling using a third-party power source in storage-only installations

For sites that already have a third-party solar inverter or a Combined Heat and Power (CHP) unit, the Home Hub Three Phase Inverter may be AC-coupled to an existing power source. In addition to the AC-Coupling, the Home Hub Three Phase Inverter may be connected to PV strings. In this configuration, Export Limit is not supported.

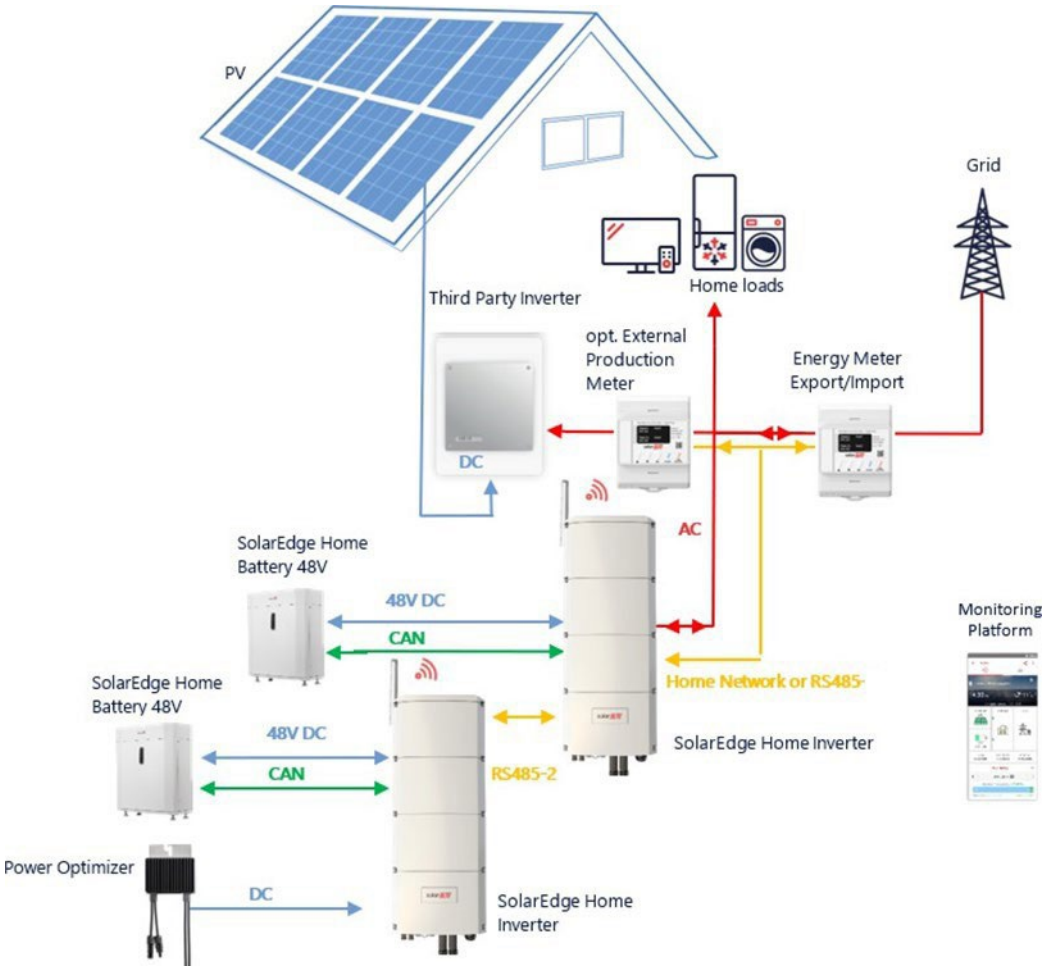



**Figure 14: AC-Coupling using a Third-Party Power Source**

# Storage mode compatibility information

The following table specifies which applications that can be used for each system configuration:

| | Maximize Self-consumption | Battery Profile | Export Limitation | Zero Export Limitation |
|---|---|---|---|---|
| Smart SolarEdge Home Hub Inverter – Three Phase Configuration | ✓ | ✓ | ✓ | ✓ |
| Smart Energy | ✓ | ✓ | ✓ | ✗* |
| AC-Coupled Systems | ✓ | ✗ | ✓ | ✗* |

* These applications require a certain amount of export power to work, due to the control accuracy of Smart Energy components or external power sources.

# Safety Symbols Information

The following safety symbols are used in this document. Familiarize yourself with the symbols and their meaning before installing or operating the system.

WARNING

Denotes a hazard. It calls attention to a procedure that, if not correctly performed or adhered to, could result in **injury or loss of life**. Do not proceed beyond a warning note until the indicated conditions are fully understood and met.

CAUTION

Denotes a hazard. It calls attention to a procedure that, if not correctly performed or adhered to, could result in **damage or destruction of the product**. Do not proceed beyond a caution sign until the indicated conditions are fully understood and met.

NOTE

Provides additional information on the current subject.

IMPORTANT SAFETY FEATURE

Denotes information about safety issues.

Disposal requirements under the Waste Electrical and Electronic Equipment (WEEE) regulations:

NOTE

Discard this product according to local regulations or send it back to SolarEdge.

# Support Contact Information

If you are having technical problems concerning SolarEdge products, please contact us:

https://www.solaredge.com/service/support

Before contacting SolarEdge, make sure to have the following information at hand:

- The model and serial number of the product in question.
- The error indicated on the LEDs, the SetApp mobile application, the LCD screen, or on the monitoring platform, if there is such an indication.
- System configuration information, including the type and number of modules connected and the number and length of strings.
- The method of communications with the SolarEdge server, if the site is connected.
- The product's software version as it appears in the ID status screen.