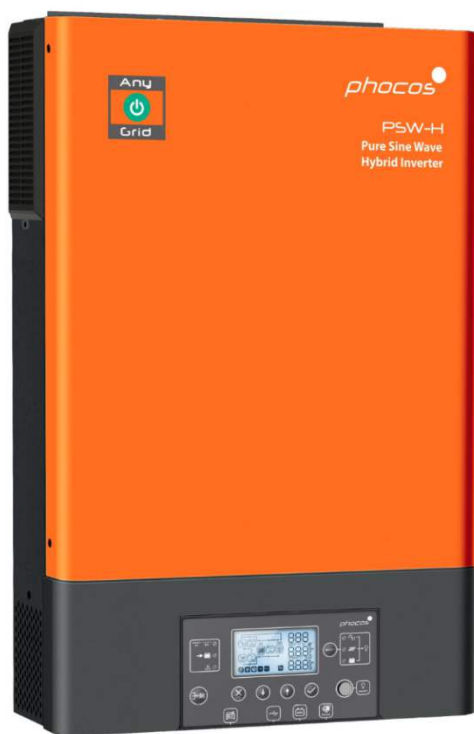# Phocos Any-Grid™ series

Any-Grid™ use with Lithium battery models:
Revov R100/B100

Applicable for Any-Grid™
PSW-H-8kW-230/48V, PSW-H-5kW-230/48V,
PSW-H-5kW-120/48V and PSW-H-6.5kW-120/48V

Recommended battery settings guide

1.0   Introduction

This guide outlines the recommended settings and establishing communication for operation of one or more Any-Grid™ PSW-H-8kW-230/48V, PSW-H-5kW-230/48V, PSW-H-5kW-120/48V or PSW-H-6.5kW-120/48V hybrid inverter chargers with Revov R100 & B100 battery modules in the low-voltage (48 Vdc nominal) configuration, referred to in this guide as "battery modules".

Note that the charge/discharge settings are automatically negotiated with the battery if this guide is used and cannot be changed. If you wish to manually set these settings, then a communication cable between the PSW-H and batteries is not needed and the battery type in settings menu 05 of the PSW-H must be set to "RS-485". In this case it is your responsibility to choose settings within the specifications of the battery to preserve the battery warranty.
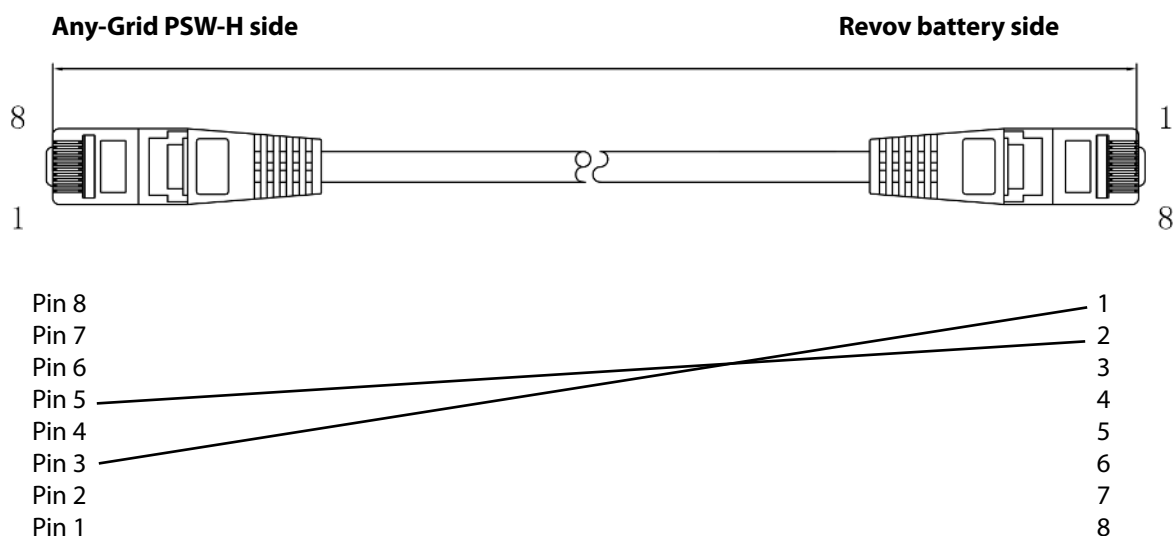
The Any-Grid must be installed according to the Any-Grid "User and Installation Manual" included with every Any-Grid unit and available online at www.phocos.com. The battery terminals of the Any-Grid must be connected to the batteries according to the Revov installation manual at the appropriate step mentioned in the chapter "**5.0 Battery Settings and Communication Cable Installation**" of this manual.

WARNING: Be sure to read and respect the warnings in the installation manuals of the Any-Grid, the battery modules and any other connected equipment. The installation must be conducted by a trained professional.

2.0   Requirements

The following is required to proceed with this guide:

- Any-Grid PSW-H-8kW-230/48V, PSW-H-5KW-230/48V, PSW-H-5kW-120/48V or PSW-H-6.5KW-120/48V
  Note: the minimum display unit firmware version U2 must be 06.19/106.19 or later, with the corresponding U1 firmware for your Any-Grid PSW-H.

- Battery communication cable with **only** the following pins connected:

Any-Grid PSW-H side   **Revov battery side**

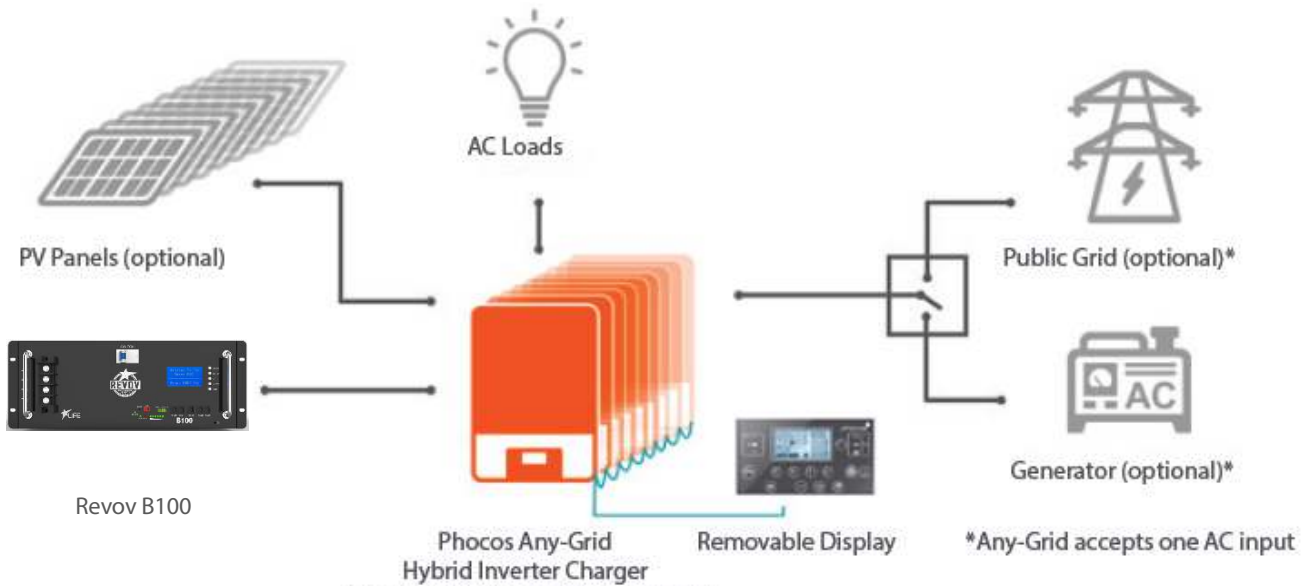| Any-Grid PSW-H side	Revov battery side
Pin 8	1
Pin 7	2
Pin 6	3
Pin 5	4
Pin 4	5
Pin 3	6
Pin 2	7
Pin 1	8

Make sure the cable is correctly oriented between the battery and PSW-H unit when installing below.

WARNING: Do not use the inverter cable included with your Revov batteries. Wiring your own cable according to the pinout above must be done at your own risk. Any damage to the PSW-H or battery due to incorrect wiring, cable orientation or use of an incorrect cable is not covered by any warranty.

- Revov R100 or B100 battery module(s)

3.0 System Overview

PV Panels (optional)

Revov B100

AC Loads

Phocos Any-Grid Hybrid Inverter Charger

Removable Display

Public Grid (optional)*

Generator (optional)*

*Any-Grid accepts one AC input

4.0 Battery Sizing

To maintain the full battery warranty, each battery module should be sized not to exceed 50 Adc continuous current (verify Revov manual for details). It is thus recommended to use at least 2 battery modules in parallel to deliver both sufficient continuous current and peak current for a single PSW-H-5KW at full power. When using multiple Any-Grid units, be sure to increase the number of batteries accordingly to sustain the required currents. Using too few batteries per inverter may void your Revov battery warranty.

The batteries must be wired in parallel to form a single large battery bank when using multiple Any-Grids, with a nominal voltage of 48 Vdc. All Any-Grids must be connected to a single battery array.

5.0 Battery Settings and Communication Cable Installation

CAUTION: Before connecting the battery modules to the Any-Grid(s), please follow the installation instructions in this chapter step by step. The battery, AC input source, AC output loads and PV input must remain disconnected until instructed otherwise.

1. Make the battery communication cable as described in chapter 2. This cable is designed specifically for connecting the Any-Grid PSW-H to Revov batteries.

2. Ensure the battery modules are all turned off.

3. Ensure the battery modules are still turned off. Connect the Any-Grid(s) to the battery power (positive and negative) terminals with the correct polarity.
CAUTION: If the correct polarity of the battery is not observed, the Any-Grid and the battery may be damaged, this is not covered by warranty.
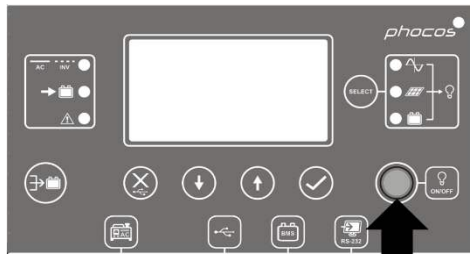
   Connect the battery communication cable mentioned in chapter 2 to the Revov B100 RS-485 port and the other end to the Any-Grid's BMS port. Take care to connect the correct cable ends to the battery and Any-Grid:

Any-Grid   **Revov B100**
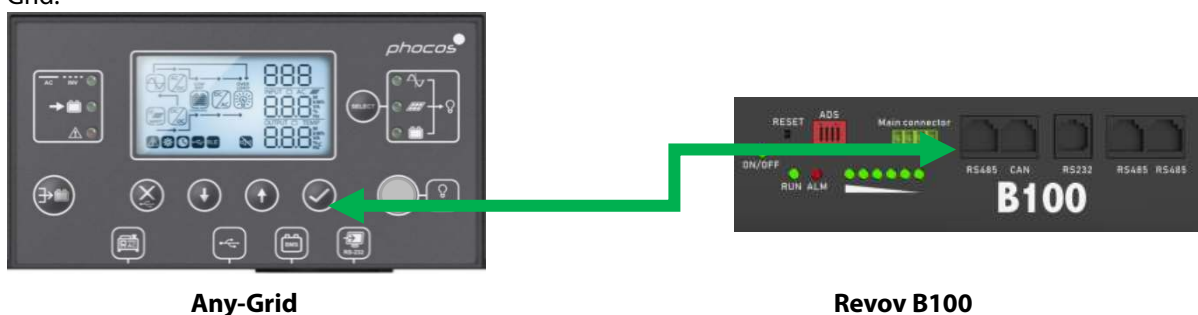
4. Ensure the battery modules are wired as outlined in the Revov battery manual. Turn on the batteries.

5. Ensure the "ON/OFF" load power button of the Any-Grid(s) is in the ON position (depressed), but no loads are connected:

The Any-Grid(s) should now be running, the display(s) on.

6. Apply the following setting on the Any-Grid to which the Revov battery bank is connected with the communication cable. This setting refers to the Any-Grid manual, chapter **Operation → Device Operation Settings → Settings menus**.

7. *Battery type*
   Menu 05: RS-485

   RS-485 (MODBUS RTU) battery

   05

   ⚙   ⊢54

   Boost charge voltage
   Menu 26: 56V

   Float charge voltage
   Menu 27: 54.5V

   Low voltage disconnect
   Menu 29: 48.0V

8. Once the setting has been applied, exit the settings menu by pressing ⊗ to return to the main view.

9. Activate the circuit breakers or insert the fuses to energize the various inputs and outputs on the Any-Grid in the following order (skip any that are not connected):

   a) AC input

   b) PV input

   c) AC output

10. If you are using more than one Any-Grid, this procedure ensures that the unit to which the Revov battery is connected, will communicate with the Revov battery BMS. The battery type of all other connected Any-Grid units will be set to "User-defined".

The commissioning and programming of the battery-related settings of the Any-Grid is now complete.

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