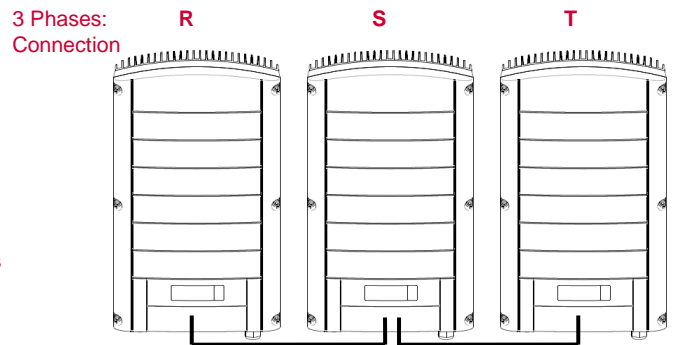
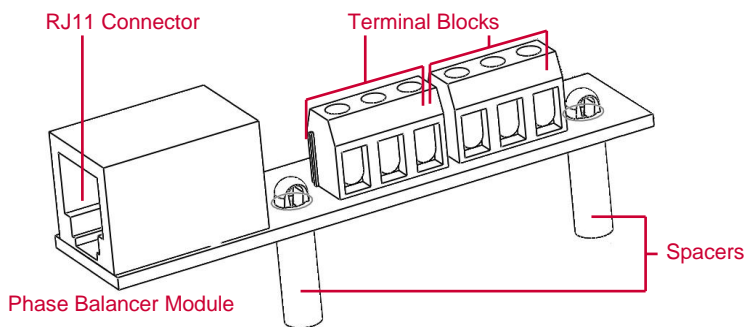


# SolarEdge Phase Balancer Installation Guide

## General

This document describes how to install a SolarEdge phase balancer in one of each three Single Phase Inverters in a three-phase connection in order to ensure symmetrical power supply. Each inverter must be connected to a different phase (R, S and T). The inverters must be the same SolarEdge model.



## Tools and Materials

The following tools and materials are required for installation and are not provided:

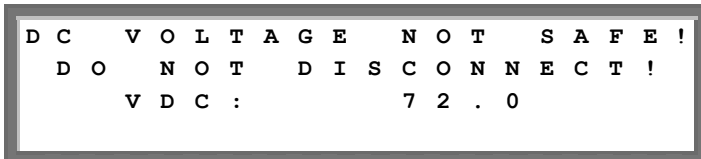
- 2 x RJ11 6 pin connector
- Communication cable (minimum 4 wires)
- Crimper tool for RJ11 6 Pin
- Tool box

## Installing the Phase Balancer

- 1 Make sure that all the inverters are properly installed, as described in the *SolarEdge Installation Guide*.

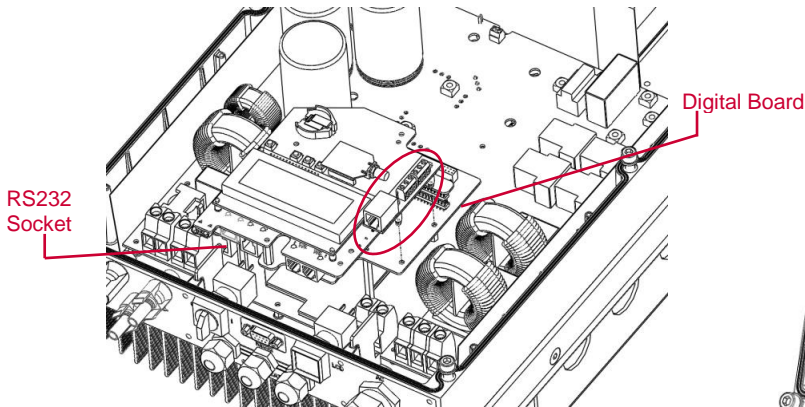
**WARNING!**  
 Installation of the phase balancer must only be performed after the inverters in the site have been installed properly and have been shut down, as described in the *SolarEdge Installation Guide*. Failure to do so may result in injury or loss of life and damage or destruction of the instrument.

- 2 Shut down the inverter by turning OFF the inverter ON/OFF switch. The following message will be displayed:

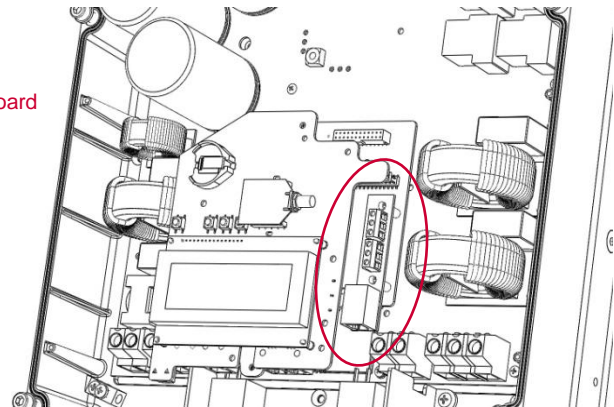


This message is displayed until the DC voltage is safe. (below 50 VDC).

- 3 Switch off the AC voltage to the inverter.
- 4 Open all three of the inverters' covers, as described in the *Opening the Cover* section of the *SolarEdge Installation Guide*.
- 5 Attach the phase balancer to the digital board of one of the inverters. To do so, simply snap in the two plastic spacers that are located on the bottom of the phase balancer into the two holes on the digital board. The spacers should leave two centimeters space between the phase balancer board and the digital board. The following shows where to insert the phase balancer.

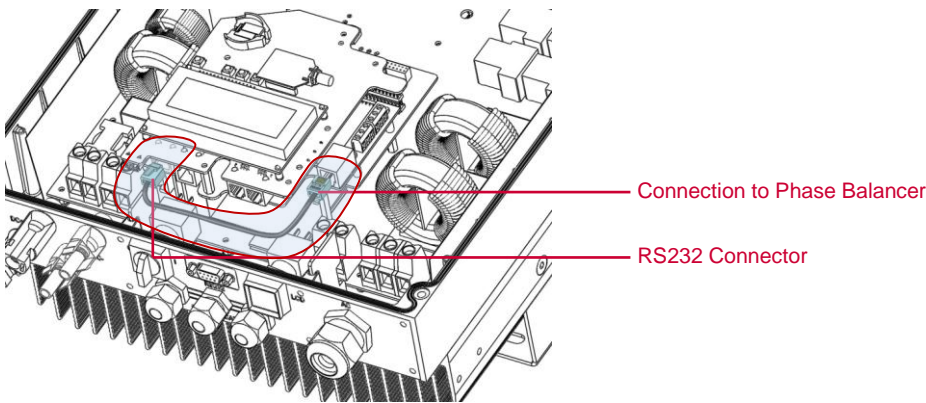


Attaching the Phase Balancer



Phase Balancer – After Installation

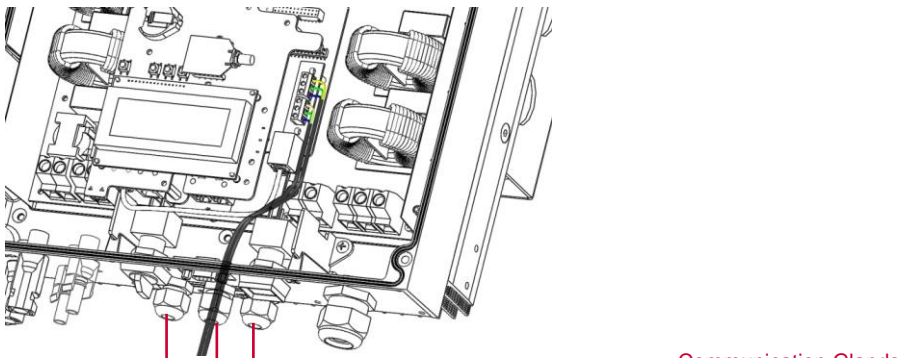
- 6 Disconnect the cable attached to the RS232 socket (as shown in the drawing above). Secure this unused cable by attaching it to the cable connecting to the on/off switch (a cable tie can be used for that).
- 7 The phase balancer is provided with a 20cm cable with RJ11 connectors on each side. Connect one end of the cable to the phase balancer's RJ11 connector.
- 8 Connect the other end of this cable to the RS232 connector on the LCD board, as shown below:



Connecting the Phase Balancer to the Inverter's RS232

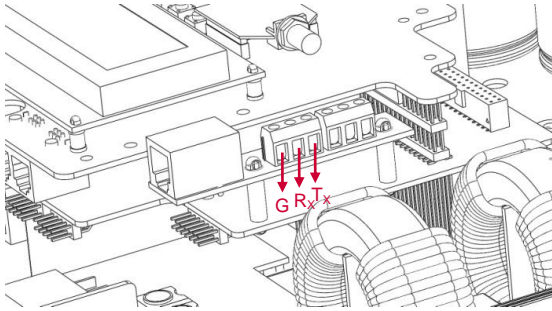
## Connecting the Other Two Inverters to the Phase Balancer

- 1 Insert two cables suitable for RJ11 connectors (minimum of three wires and must be able to withstand temperatures of at least 85°C. The cables not provided) through the Inverter's cable gland, as shown below:



Three Communication Glands

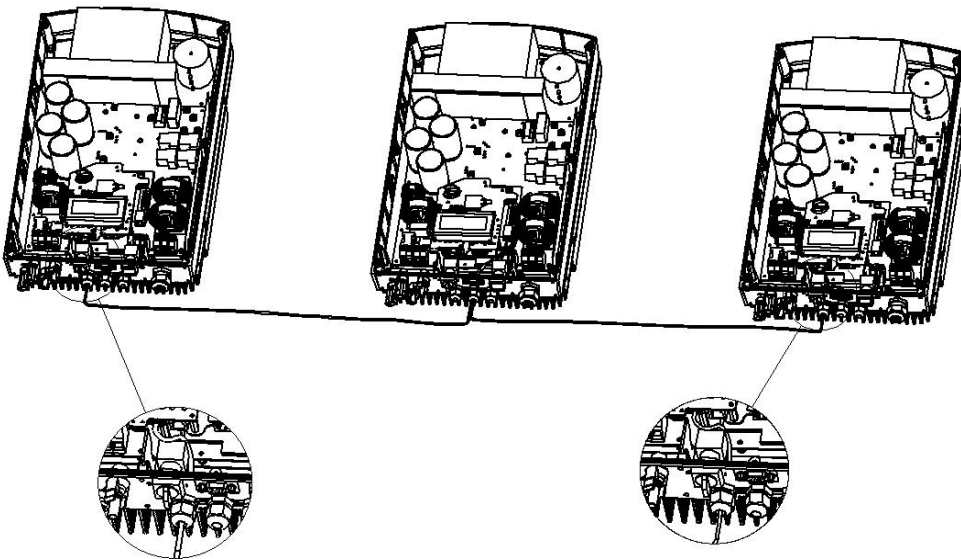
- 2 Strip and connect the cables to the two terminal blocks on the phase balancer (one cable to each terminal block). In each of the two terminal blocks, connect the cable's wires from left to right, as follows:



- Connect the Gnd wire to the left terminal block entry point
- Connect the Rx wire to the middle terminal block entry point
- Connect the Tx wire to the right terminal block entry point

**Connecting to the Terminal Blocks**

- 3 Tighten the bolt on each communication gland through which you threaded the cable.
- 4 Connect the two communication cables to their respective Inverters. Pass the cable through the cable glands as shown below.

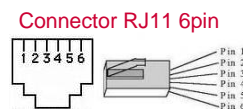


**Inverter Phase Balancer String**

- 5 Disconnect the cables attached to the RS232 socket (as shown in ‘Installing the Phase Balancer’ chapter, page 2) in each inverter.  
Secure those unused cables by attaching them to the cable connecting to the on/off switch (a cable tie can be used for that).

- 6 After the cables are threaded through the communication glands, crimp the end of each cable into an RJ11-6 connector, as follows:

- Connect the Tx wire to pin 2
- Connect the GND wire to pin 3
- Connect the Rx wire to pin 5



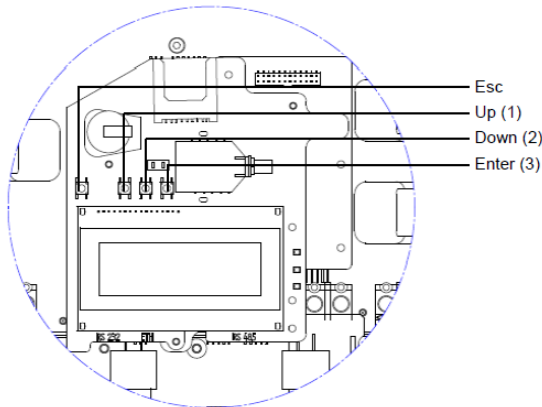
- 8 Insert the RJ11 connector, described above, into the RS232 socket of the LCD Board of the inverters.
- 9 Tighten the bolt on each communication gland through which you threaded the cables.

**NOTE:** If the inverter is installed outdoors, make sure the cable glands are sealed around the cable, and if necessary, improve sealing using RTV glue.

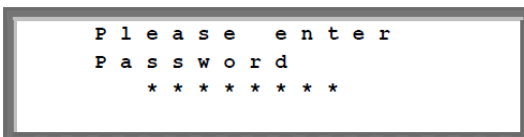
## Activating the Phase Balancer

Perform the following steps in each of the three inverters in order to activate the phase balancer feature.

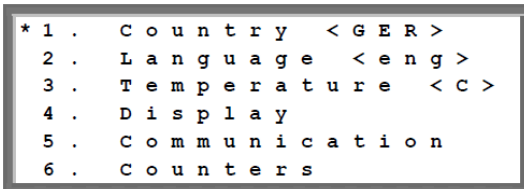
- 1 Switch on the AC power
- 2 To activate the Phase balancer, use the LCD buttons that can be accessed by removing the inverter cover, as shown below.



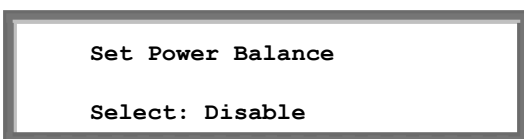
- 3 Press the **Enter** button for at least five seconds. The following message is displayed:



- 4 Use the three right-most buttons inside the inverter (the UP-1, Down-2 and Enter-3 buttons), shown above, to type in the following default password: **12312312**. The following menu is displayed:



- 5 Use the Down button inside the inverter to move the asterisk (\*) to the **Power Balance** option (#7) and then press the **Enter** button to select it.
- 6 After selecting the **Power Balance** option, the following message is displayed in which you can enable the phase balancer, as shown below:



- 7 Toggle to **Enable** and press **Enter** to confirm.
- 8 Close the inverters' cover, as described in the *Closing the Cover* section in the *SolarEdge Installation Guide*.
- 9 Switch on the DC of each inverter.

## Verifying Phase Balancer Operation

The following procedure should be performed in order to verify the proper operation of the phase balancer:

- 1 Switch off the AC to any of the inverters. The message **PHASE UNBALANCED** should be displayed on the LCD of the two other inverters in the three phase connection.
- 2 Switch the AC back on.

### Support and Contact Information

If you have technical questions concerning our products, please contact us:  
 USA & Worldwide Support Line: +1.650.319.8843  
 Germany: +49.(0)89.4161703-30  
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 Fax: +972.73.2403117  
 Email to: [support@solaredge.com](mailto:support@solaredge.com)