solar**edge** *architects of energy™*

SolarEdge Quick Installation Guide - English

NOTE: Make sure you read, fully understand and follow the detailed instructions in the *SolarEdge Inverter Installation Guide* before any installation. **Failure to do so could result in injury or loss of life and damage or destruction of the equipment.** This Quick Installation Guide must be used only after reading the *SolarEdge Installation Guide*.

Step 1: Connecting Optimizers to Modules

1 Mount the optimizers in a shaded location near the PV modules, on the structure or racking to which the module is attached using both mounting holes. Avoid mounting optimizers in locations where they will be exposed to direct sunlight. Make sure that each optimizer is positioned within reach of each module's cables.

2 Verify polarity and connect the modules to the optimizer inputs.
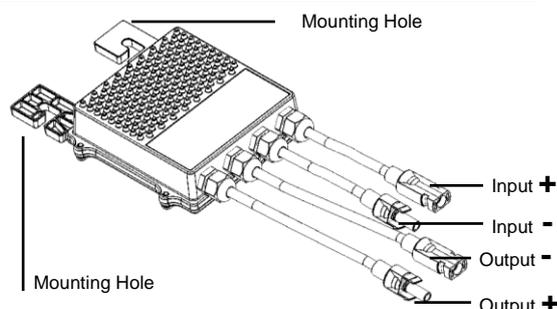
## Step 2: Connecting Optimizers to a String

1 Make sure that the inverter ON/OFF switch is switched OFF during installation.

2 Connect the optimizers' outputs in series.

- The minimum string length is:
  - Single phase inverter: 8 optimizers
  - Three phase inverter: 16 optimizers
- The maximum string length is:
  - Single phase inverter: 25 optimizers and no more than 5.25kW
  - Three phase inverter: 50 optimizers and no more than 11.25kW
- Consult the SolarEdge Site Designer for verification.
- Strings **DO NOT** have to be the same length.
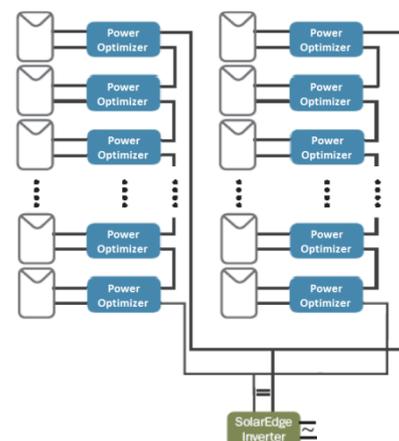
3 **Verify proper connection:** Before the inverter is turned ON, each optimizer produces *1V safety-voltage*, which should be verified for each string with a voltmeter. The voltage on a string is the number of modules multiplied by 1V, with a deviation of 0.1V per module. Note: If several strings are connected in parallel, verify voltage for each string separately.

4 In order to benefit from the physical mapping of the installation in the SolarEdge Monitoring Portal, you must record each optimizer's location by peeling off its removable barcode sticker and sticking it on the mapping template, or by scanning the barcode with the SolarEdge iPhone Site Mapper app, and uploading the map to the SolarEdge website, using the site registration page at http://monitoring.solaredge.com/.

Step 3: Installing the Inverter and Connecting the String to the Inverter

1 Make sure that the inverter ON/OFF switch is switched OFF during inverter installation and that the AC circuit breaker is OFF.

2 Install the mounting bracket on the wall with the u-shaped part on top. Mount the inverter on the bracket. Secure it to the bracket using the two supplied screws.

3 Leave clearance areas open in order to cool the inverter: 20cm above and below, 10cm on both sides.

4 Open the inverter cover by opening the six cover screws.

5 Connect the AC cable to the AC connection terminal block found in the lower right hand corner of the inverter.

- Single phase inverter: the AC connection terminal block is a three terminal block. When used with European Standard grids (220/230 Vac, 50 Hz) the inverter should be connected Line to Neutral. The connections from left to right are: Protective Earth (PE), Neutral, and Line 1.
- Three phase inverter: the AC connection terminal block is a five terminal block. When used with European Standard grids (380/400 Vac, 50 Hz) the inverter should be connected Line to Line. The connections from left to right are: Line 1, Line 2, Line 3, Neutral, and Protective Earth (PE).
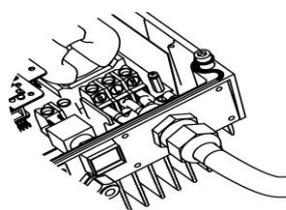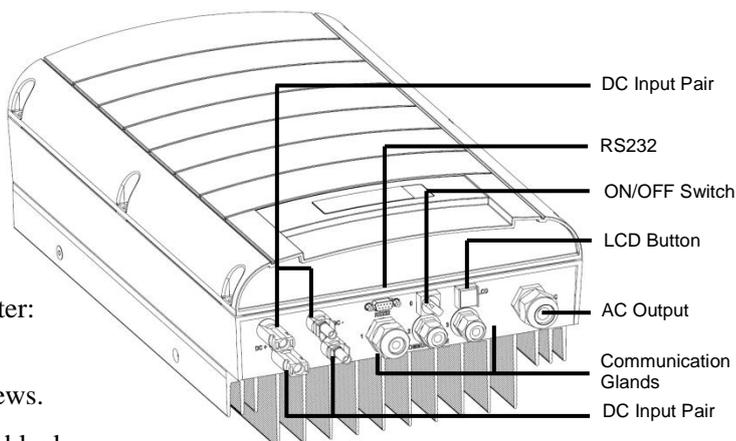
**AC Connections – Single Phase Inverter**   **AC Connections – Three Phase Inverter**
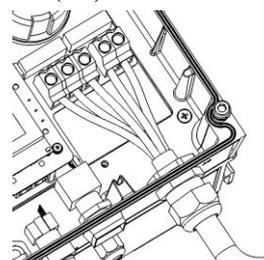
6 Connect the DC wires to the DC connectors on the bottom of the inverter. Check polarity before connecting!

7 If necessary, connect the Ethernet and the RS485 connections. Ethernet and RS485 are connected to a connector inside the inverter. An inverter communication board has either RJ45/RJ11 connectors or block terminal connectors for communication.

**Ethernet Pin Out**   **RS485 Pin Out**
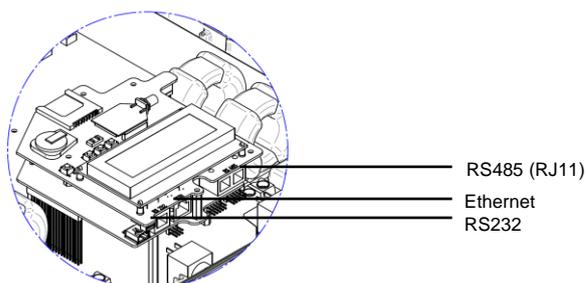
Communication Board - RJ45/RJ11 Connectors   **Communication Board – Terminal Blocks**
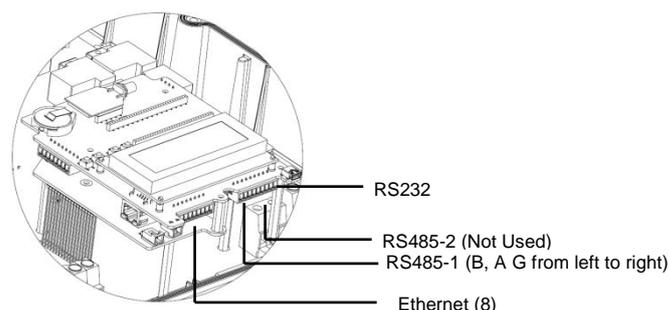
- The RS485 option is used to create a bus of connected inverters, as shown below:
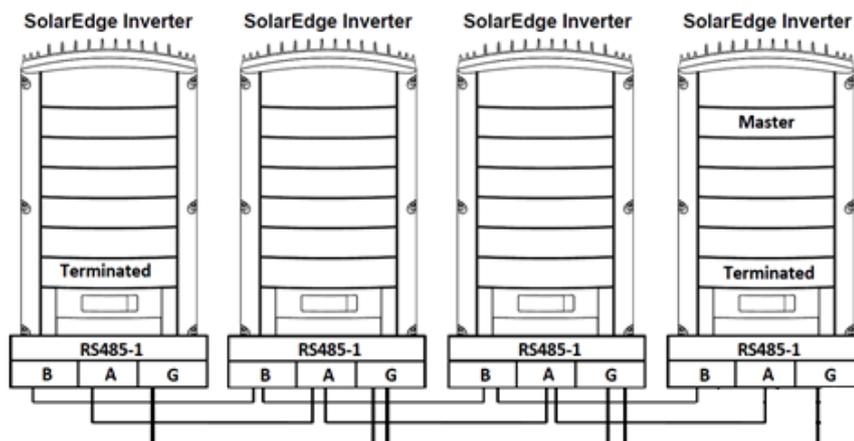
- For configuration of the Ethernet and RS485 options refer to Step 5.

Step 4: Commissioning and Activating the Installation

SolarEdge inverters are designed for global use and must be configured for use in each country. If the inverter has not been configured it may display a voltage or frequency error at first startup. Incorrect configuration will not damage the inverter but it will not operate normally unless properly configured. Inverter configuration should be verified for all installations at time of installation.

1 Turn ON the AC circuit breaker.

> **WARNING!**
> High AC voltages are present in the inverter – handle with care.

2 Verify (and set, if required) the correct country code, display language and communication configuration using the inverter user buttons and LCD. Enter the menus by pressing ENTER for five seconds and then inputting the password **12312312**.

3 Verify the following in the LCD display:

```
V a c [ v ]    V D c [ v ]    P a c [ w ]
2 3 0 . 7        1 4 . 1          0 . 0
P _ O K :    0 0 0 / 0 0 0    < S _ O K >
                                  O F F
```

- **Vac:** Specifies the grid voltage.
- **Vdc[V]:** Shows the total string voltage (1V for each power optimizer properly connected in series).
- **Pac:** AC power production. At this stage it should be 0w.
- **P-OK:** Specifies the number of properly connected power optimizers.
- **S-OK:** Indicates the status of the connection to the SolarEdge Monitoring Server.
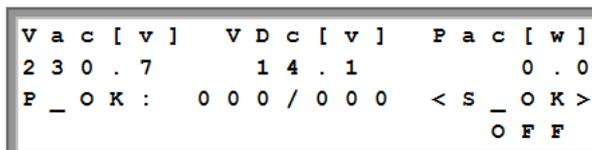
4 Close the inverter cover.

> **WARNING!**
> Before proceeding to the next step, make sure that the inverter cover is closed!
>
> High DC voltage will be present in the inverter following the next step!

5 To pair the power optimizers to the inverter turn the ON/OFF switch at the bottom of the inverter to OFF. Press and hold down the inverter LCD button for about **10 seconds**. The following screen is displayed:
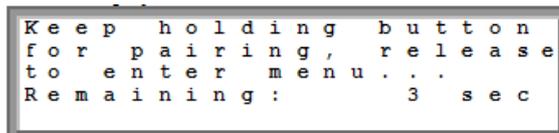
```
Keep  holding  button
for  pairing,  release
to  enter  menu...
Remaining:      3  sec
```

6 Continue to hold for five seconds more. The following screen is displayed:
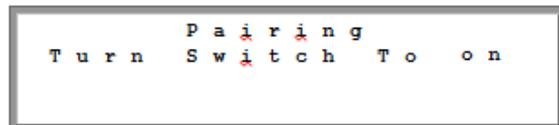
```
        Pairing
Turn  Switch  To  on
```

7 Turn ON the inverter by using the ON/OFF switch. If you fail to turn ON the switch within five seconds, then repeat the pairing step above. The following screen is then displayed indicating that the inverter is performing the process of pairing and is assigning power optimizers to the inverter.
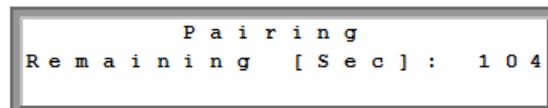
```
        Pairing
Remaining  [Sec]:  104
```

8 After commissioning succeeds, the following message is displayed:

```
        Pairing
Pairing  Completed
```

9 At the end of the pairing process, the system will start producing power. Verify on the LCD screen that the number next to **P_OK** equals the number of installed Power optimizers. It may take up to 15 minutes until all the power optimizers display an indication that they are up.

IMPORTANT SAFETY FEATURE:
After switching the inverter ON/OFF switch to ON, there is HIGH DC VOLTAGE.
After switching the inverter ON/OFF switch to OFF, wait for the LCD to indicate that the DC voltage is safe before opening the cover or disconnecting the strings.

Step 5: Setting Up Communication

Verify that the inverter ON/OFF switch is OFF, and remove the inverter cover.

For RS485 configuration, after connecting the RS485 cable:

1 Enter the inverter menus as described above, and select the **Communication/Bus** menu.

2 Select the **RS485 Master** or **RS485 Slave** option, according to the inverter that is being configured.

3 Enter the **Communication** menu:

- For slave inverters enter the **Server** menu and select the **RS485** option.

- For the master inverter enter the **RS485 Conf** menu and select the **Master Set** option. Return to the **RS485 Conf** menu and select the **Detect Slave** option.

For Ethernet configuration, after connecting the Ethernet cable:

1 Enter the inverter menus as described above, and select the **Communication/Server** menu.

2 Select the **LAN** option.

Refer to the *SolarEdge Inverter Installation Guide* for detailed instructions.