

## DC Safety Unit with Conduits, Addendum

This update is a supplement to the *SolarEdge Installation Guide version 3.1* (P/N MAN-01-00057-3.1; <http://www.solaredge.com/sites/default/files/se-inverter-installation-guide.pdf>).

This document describes how to connect DC and AC cables to the DC Safety Switch via conduits (instead of cable glands and connectors) in SolarEdge single and three phase inverters for Australia.



### NOTE

The SolarEdge DC Safety Unit is an integral part of the SolarEdge inverter and complies with relevant AS/NZS 5033: 2014 standards.

## Opening the Inverter and the DC Safety Unit

The conduits knockouts may be opened before or after mounting the inverter.

### ► To open conduit knockouts:

1. Turn OFF the following:
  - The inverter ON/OFF switch
  - The AC circuit breaker
  - The DC Safety Unit

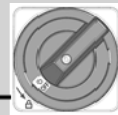


### NOTE

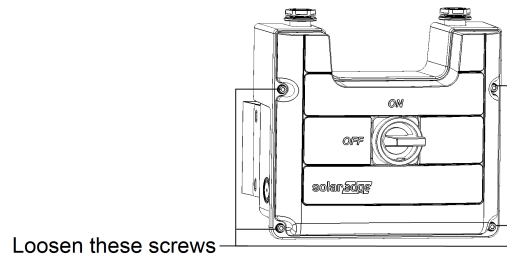
When the DC Safety Unit is OFF (for example during maintenance) it may be locked to prevent safety hazard:

1. Move the DC Safety Unit to the Lock position.
2. Insert the lock through the knob opening and lock.

Lock here



2. Loosen the screws on the front cover of the DC Safety Unit, as shown below:



Loosen these screws

Figure 1: Opening the DC Safety Unit cover

3. Remove the DC Safety Unit cover. The following figure shows an example of the internal components in the DC Safety Unit. Components may differ depending on inverter models.

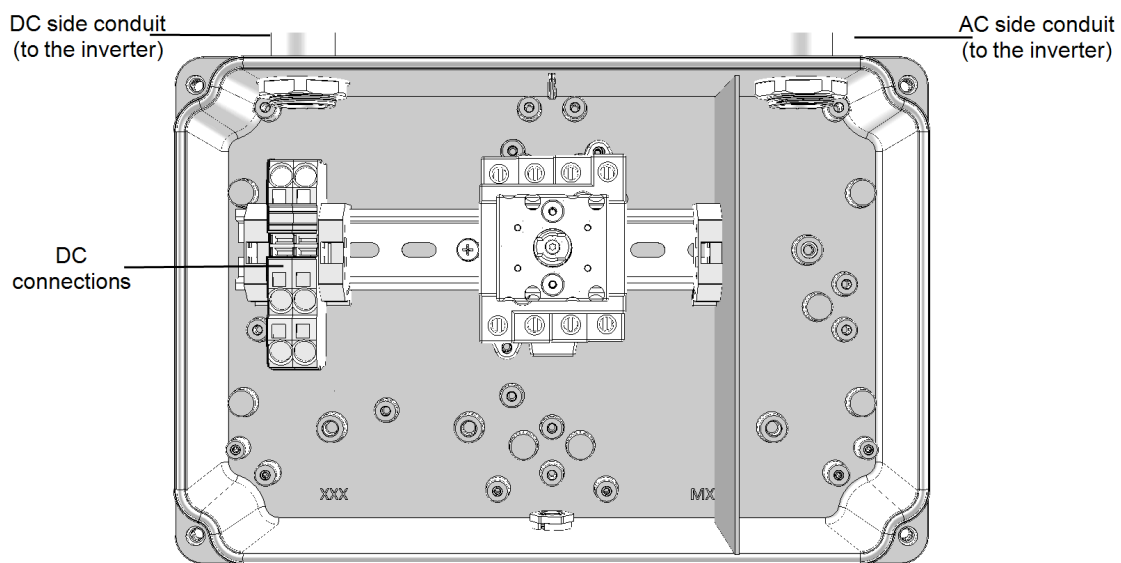


Figure 2: Inside the DC Safety Unit

- Open the required AC and DC conduit knockouts according to the conduits used in the installation: The knockouts are located at the bottom and sides of the enclosure, each with two sizes:  $\frac{3}{4}$ " and 1". Open the required pair, taking care not to interfere with any of the internal components. A step drill bit may be used.

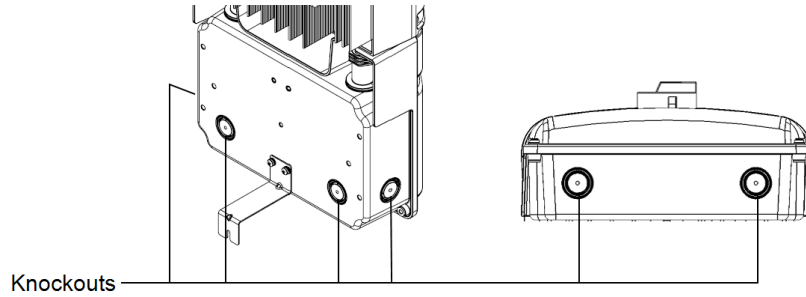


Figure 3: DC Safety Unit knockouts



**NOTE**

Unused conduit openings should be sealed with appropriate seals.

- Open the inverter cover: Release the Allen screws and carefully move the cover horizontally before lowering it.



**CAUTION!**

When removing the cover, make sure not to damage internal components. SolarEdge will not be held responsible for any components damaged as a result of incautious cover removal.

## Connecting the AC Grid to the Inverter

Use a three-wire cable for a single phase connection or a five-wire cable for three phase connection. The maximum wire size for the input terminal blocks is 16mm<sup>2</sup>.

**To connect the AC grid to the inverter via the DC Safety Unit:**

- Strip 35 cm of the external cable insulation and strip 8 mm of the internal wire insulation.

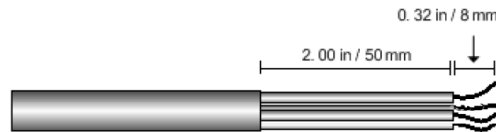


Figure 4: Insulation stripping – AC

- Insert the AC conduit into the AC-side knockout that was opened.
- Insert the AC cable through the conduit towards the AC terminals in the inverter.
- For single phase inverters - attach the supplied ferrite beads to the AC wires of the inverter as described in the ferrite bead kit.
- Depending on the inverter type (single phase or three phase), connect the AC wires as follows. Connect the PE (grounding) wire first.

Single Phase Inverter		
Wire type	Connect to terminal (use the 3-pin terminal block)	
PE (grounding)		
Line	L	
Neutral	N	

Figure 5: Single Phase Inverter AC Terminals

Three Phase Inverter		
Wire type	Connect to terminal	
Line 1	L1	
Line 2	L2	
Line 3	L3 (feeds the internal power supply)	
PE (grounding)		
Neutral	N	

Figure 6: Three Phase Inverter AC Terminals

6. Tighten the screws of each terminal with a torque of 1.2-1.5 N\*m / 0.88-1.1 lb\*ft.
7. Check that the wires are fully inserted and cannot be pulled out easily.
8. Verify that there are no unconnected wires to the inverter and that the unused terminal screws are tightened.

## Connecting the Strings to the DC Safety Unit

The terminals are suitable for connection of copper conductors only.

### ► To connect the strings to the DC Safety Unit:

1. Strip 8 mm of the DC wire insulation.
2. Insert the DC conduit into the AC-side knockout that was opened.
3. Connect the DC wires according to the DC+ and DC- labels: Use a standard flat-blade screwdriver to connect the wires to the spring-clamp terminals.
  - The screwdriver blade should fit freely in the terminal opening. Too large a blade can crack the plastic housing.
  - Insert the screwdriver and press the release mechanism and open the clamp.
  - Insert the conductor into the round opening and remove the screwdriver – the wire is automatically clamped.

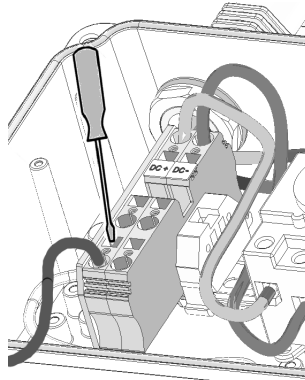


Figure 7: Spring-clamp terminals

4. Verify that there are no unconnected wires.
5. Close the DC Safety Unit cover: Attach the cover and secure it by tightening the four screws with a torque of 1.2 N\*m / 0.9 ft. \*lb.
6. Ensure proper cable entry sealing: inspect the entire cable run and use standard sealants to avoid water penetration.

## Mechanical Specifications

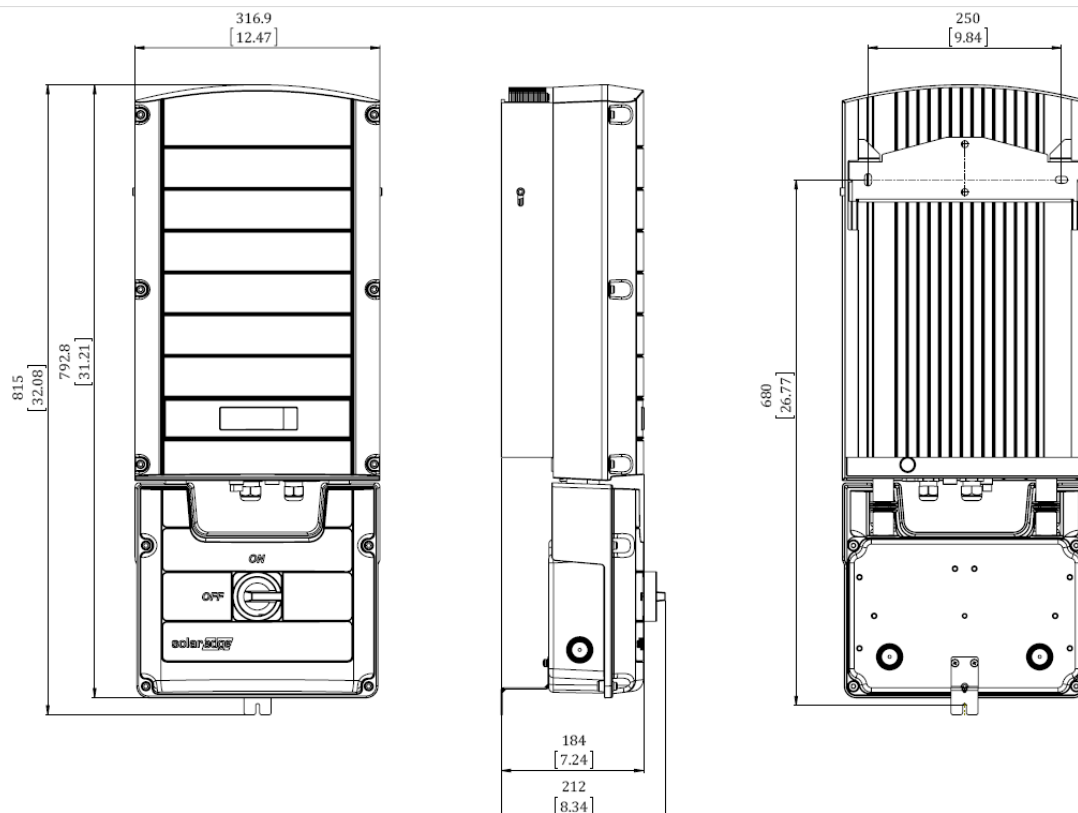


Figure 8: Single phase inverter dimensions

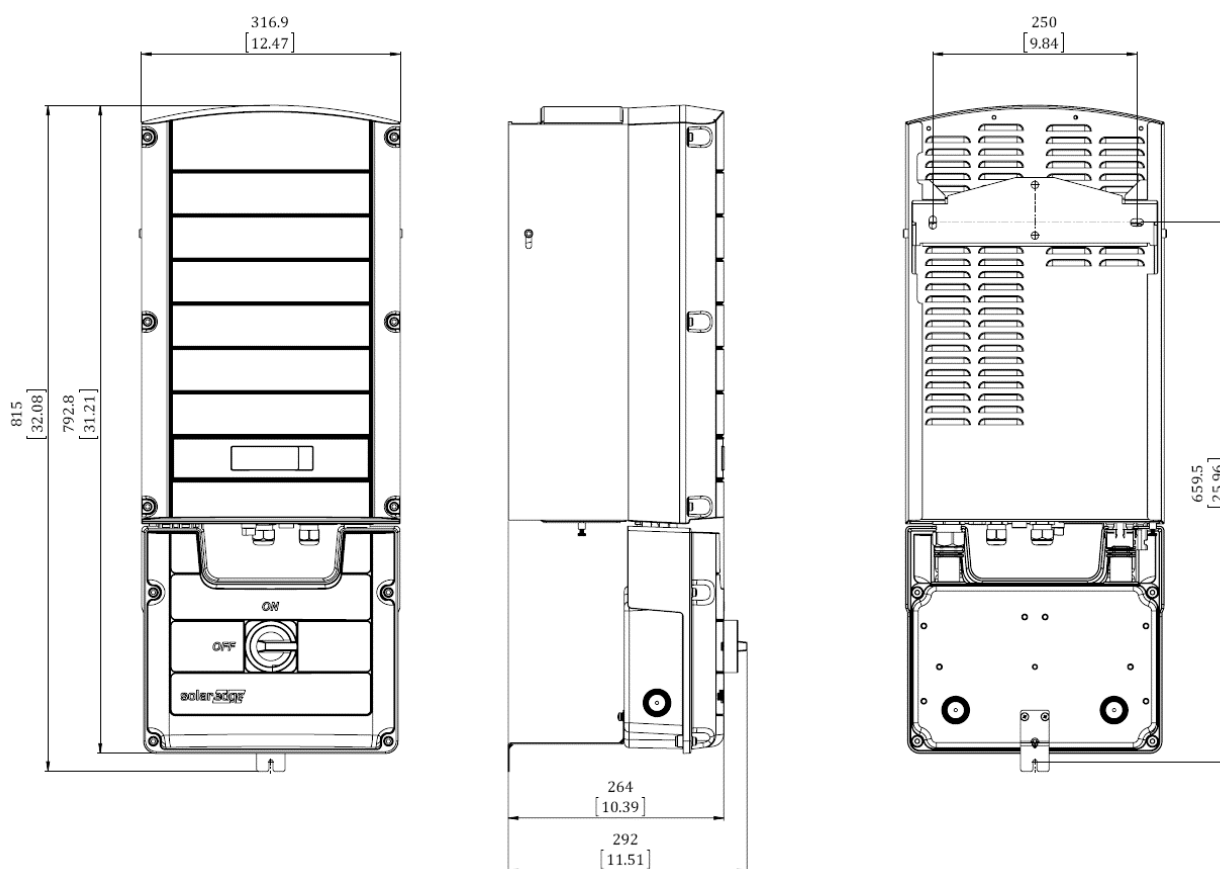


Figure 9: Three phase inverter dimensions