# SolarEdge TerraMax™ Inverter Relay replacement - Support kit manual

This manual describes the procedure for replacing the SolarEdge TerraMax Inverter Relay.

## Revision history

- Version 1.2, July 2024 – Updated name of DC switch and required tools
- Version 1.1, March 2024 – Changed name to TerraMax
- Version 1.0, January 2024 – Initial release.

## Kit contents

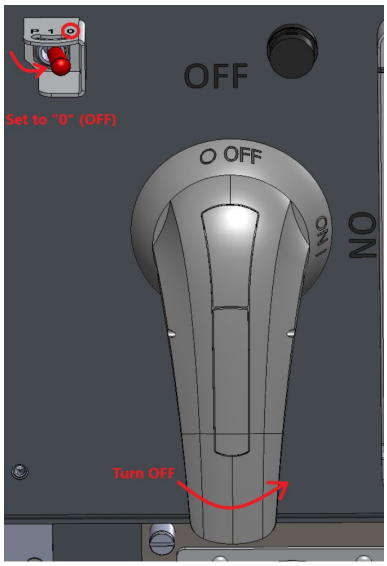
- SolarEdge TerraMax Inverter Relay PN FLD-3PH-OR-RELAY.

## Required tools

- Torque screwdriver with 30cm extension
- Torque socket wrench with 17mm and 18mm deep sockets
- 4mm hex bit
- 5mm hex bit
- 6mm hex bit
- Torx T20 bit
- Philips screwdriver
- Voltmeter

## Before you begin

1. Set the P/1/0 switch to “0” (OFF).
2. Turn the DC Disconnect (DCD) switch to the OFF position.




3. To lock the DCD switch, pull the white tab out away from the blue handle and insert a padlock through one of the holes.

4. Lock the padlock.


DCD switch safety padlock

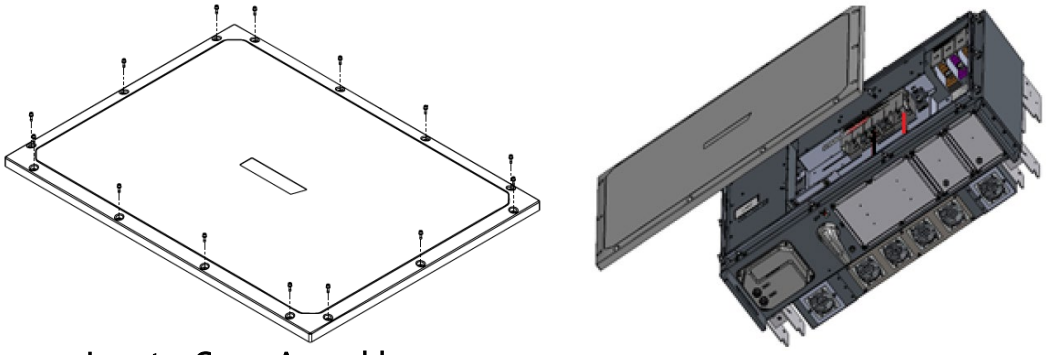
5. Disconnect AC power to the inverter by turning OFF the circuit breaker in the power distribution panel.
6. Wait at least five minutes for the DC Voltage inside the inverter to drop to a safe level.
7. As an additional safety precaution, lock the power distribution panel.

## Remove the cover

**NOTE**

The inverter cover assembly is too big for one person to handle safely. SolarEdge recommends that two people remove and handle the cover assembly.

To remove the inverter cover, use a screwdriver with a 4mm hex bit to release the screws holding the cover in place.

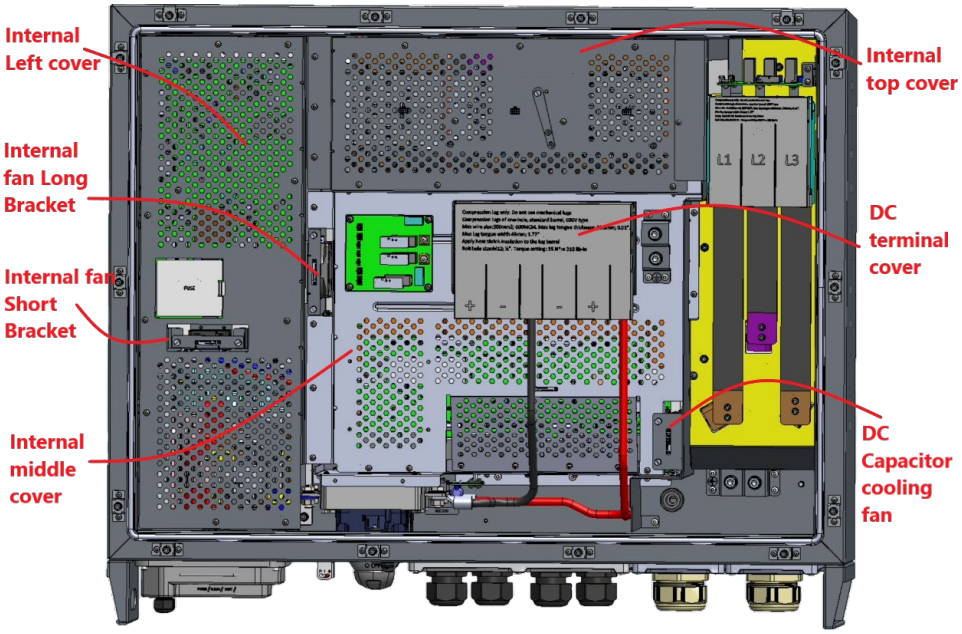


Inverter Cover Assembly

**WARNING!**

Before doing any maintenance work on the inverter, test for safe AC and DC voltages.

# Remove the damaged relay




Remove covers & fans

## Remove the DC Terminal cover

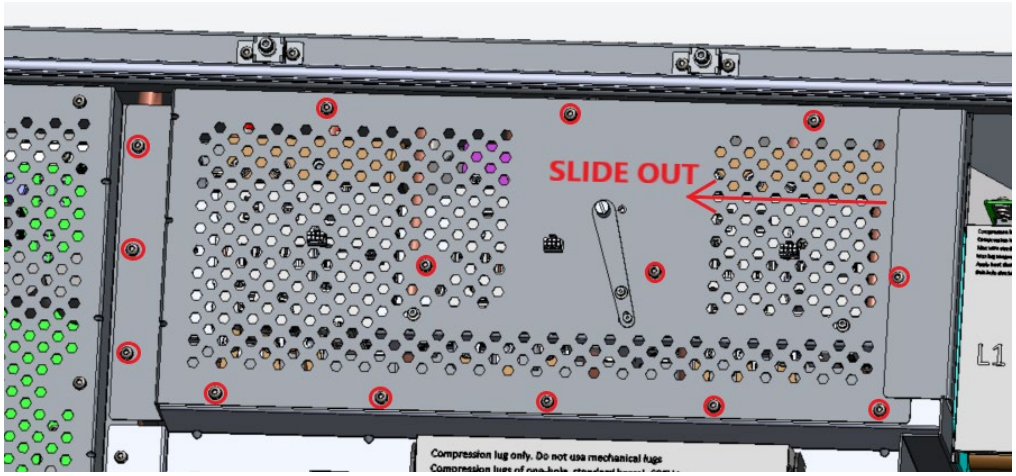
1. Locate the DC terminal cover and remove it.

## Remove the internal top cover

1. Using a Torx T20 bit, remove the screws holding the Internal top cover in place.
2. To remove the cover, slide it to the left and lift it out of the inverter.

**NOTE**

Do not change the position of the OPERATION SWITCH handle.



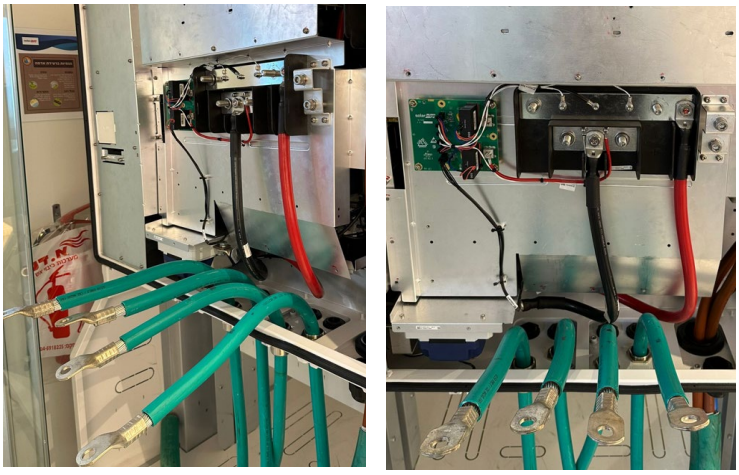

Remove the internal top cover

## Disconnect the cables

**NOTE**

Before disconnecting any cables, make a note of their exact connection points so that they can be connected back in their correct places.

1. Using 17mm and 18mm deep A/F socket and a wrench, remove all the nuts and washers securing the DC cables.
2. Remove the external DC cables from the DC Terminal Block.
3. Bend each cable enough to allow easy access to the inside of the inverter. Do not overbend the cables.



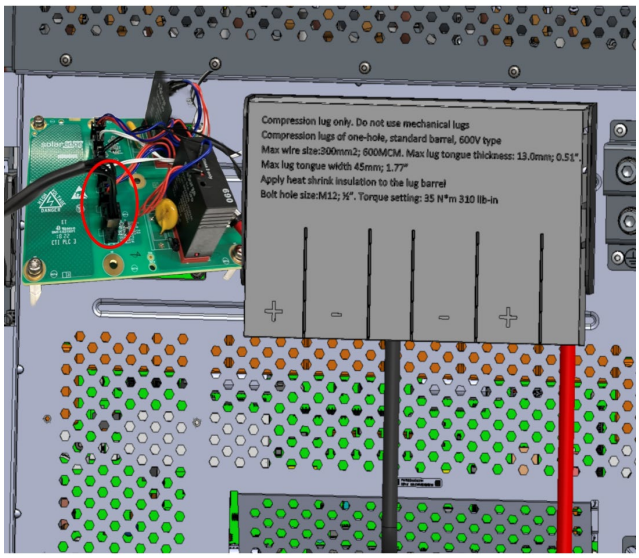
Bend the DC cables

4. Locate the Digital Board cable connector on the DC Surge Protection Device (DC-SPD).

**NOTE**

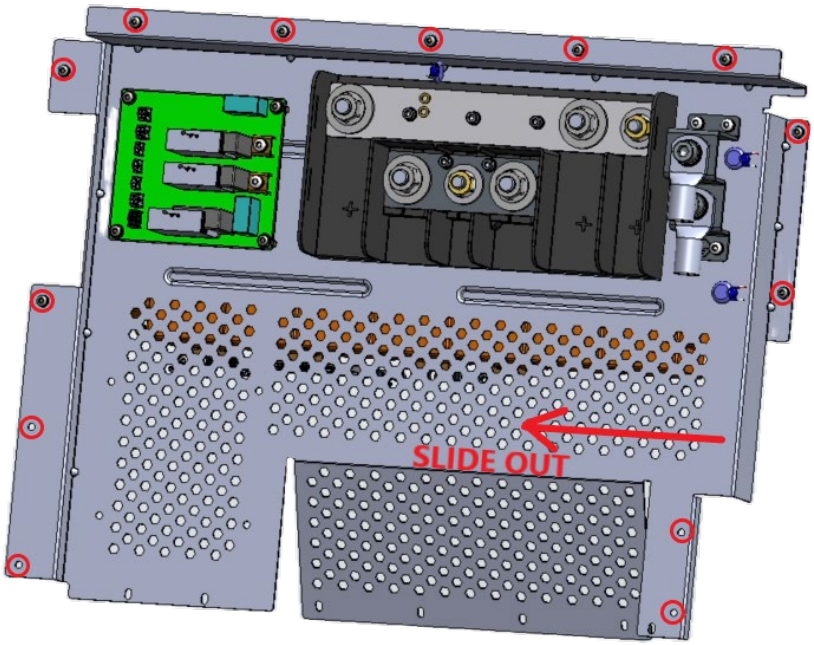
The cable connectors are fitted with locking mechanisms. To disconnect the connectors, release the locking tabs on the connectors. Never grip the wires to remove the connector from the socket.

5. Disconnect the Digital Board cable connector from the socket of the DC-SPD.




Disconnect the Connector

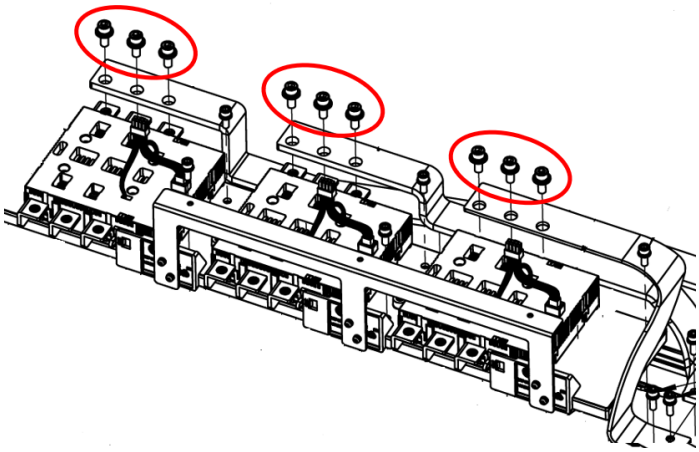
6. Using a Torx T20 bit and the 30cm extension, remove the screws holding the internal middle cover in place.
7. To remove the internal middle cover, slide it to the left and lift it out of the inverter.

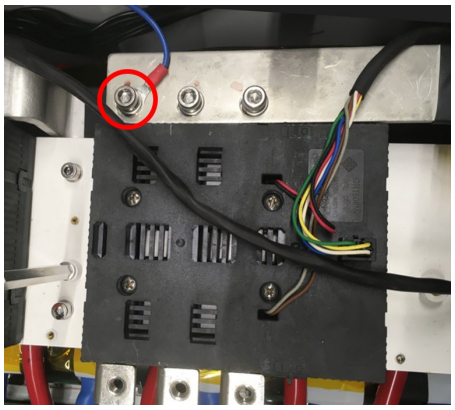



**Remove the internal middle cover**

## Move the relay busbars

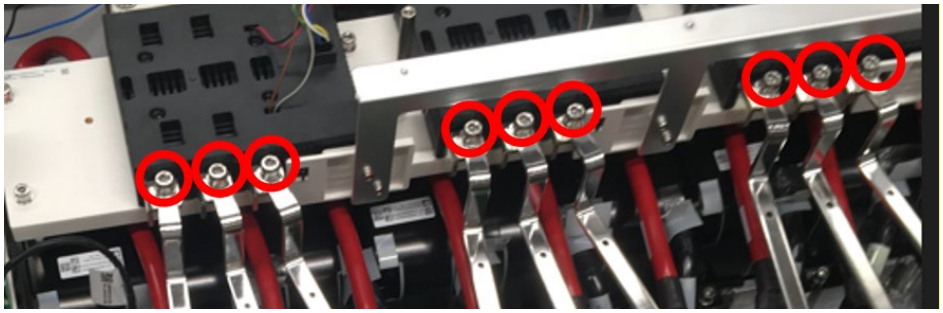
1. Using a 6mm hex bit, remove the screws holding the AC busbars and small cables in place.





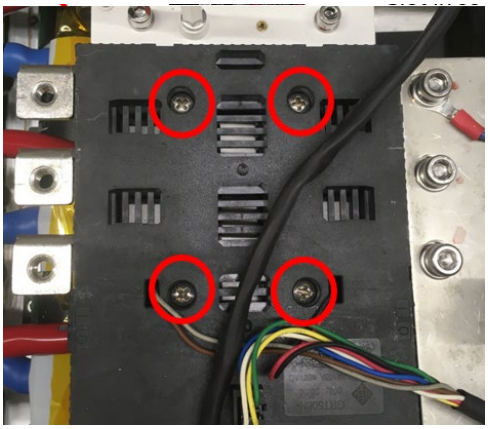
**Remove the AC busbars and cables**

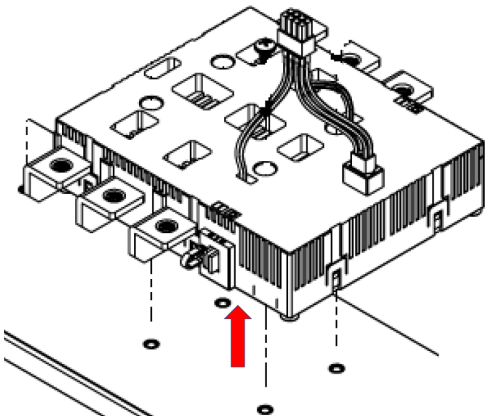
2. Using a 5mm hex bit, loosen the screws at the filter board side (not the relay side) of the relay busbars. Do not remove the screws.
3. Using a 6mm hex bit, remove the screws holding the busbars in place at the relay side and move the busbars out of the way.



Move the relay busbars

4. Using a Philips screwdriver, remove the four (4) screws holding the damaged relay to the relay holder plate.

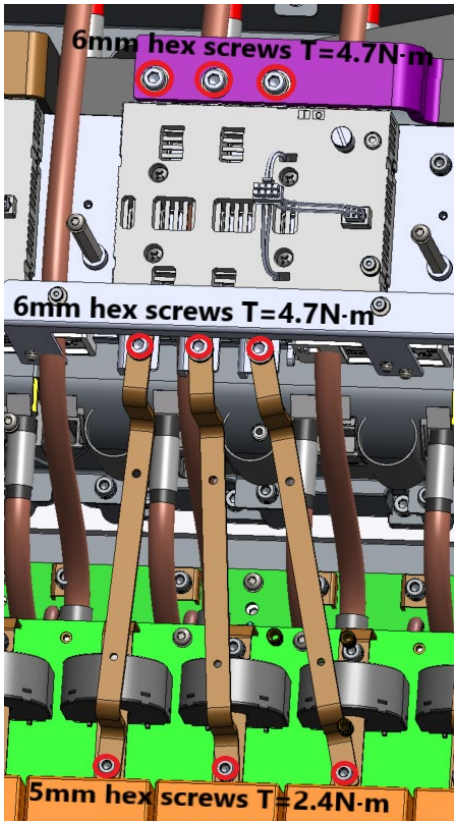




Remove the relay

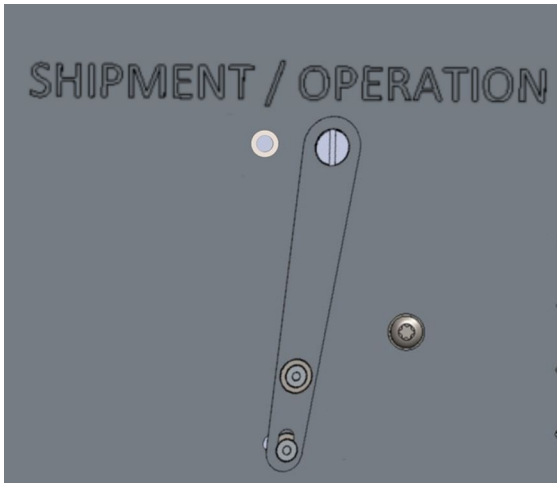
## Install the replacement relay

1. Place the new relay in position in the correct orientation.
2. Insert the four (4) screws and using a Philips screwdriver, tighten the screws to a torque of 2.4N·m (21.2lbf·in).
3. Reposition the relay busbars from the filter board onto the relays and insert the three (3) screws.
4. Using a 6mm hex bit, tighten these three (3) screws to a torque of 4.7N·m (41.6lbf·in).
5. Using a 5mm hex bit, tighten the three (3) screws holding the relay busbars to the filter board to a torque of 2.4N·m (21.2lbf·in).
6. Reposition the AC busbars onto the relays.
7. Retrieve the small cables and attach them with each left screw.
8. Insert the remaining two (2) screws and, using a 6mm hex bit, tighten the three (3) screws to a torque of 4.7N·m (41.6lbf·in).




## Refit the covers

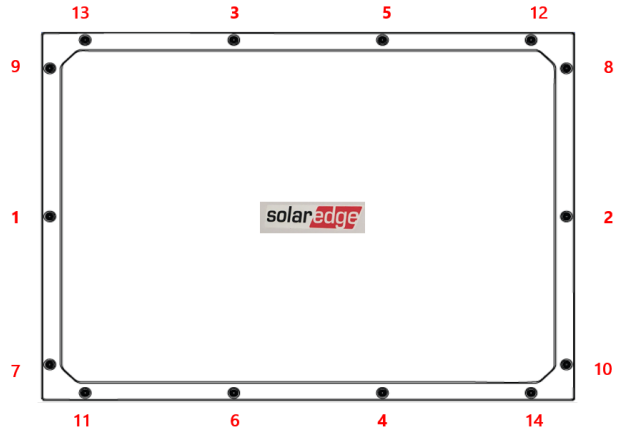
1. Place the internal middle cover into position (slide to the right) and insert the screws.
2. Using a Torx T20 bit with the 30cm extension, tighten the screws to a torque of 3.5N·m (31lbf·in).
3. Reconnect all the DC cables.
4. Replace all the nuts and washers. Make sure the cables do not interfere with the Cover Assembly.
5. Using a 17mm deep A/F socket and a wrench, tighten the M10 nuts to a torque of 18N·m (159lbf·in).
6. Use a 18mm deep A/F socket and a wrench, tighten the M12 nuts to a torque of 35N·m (310lbf·in).
7. Reconnect the Digital Board cable to the socket of the DC-SPD.
8. Place the DC terminal block cover in position. The molded text must face upwards.
9. Push the cover down till the locking tabs engage and lock with the slots provided in the DC Terminal Block.
10. Place the Internal top cover into position and insert the screws.
11. Using a Torx T20 bit, tighten the screws to a torque of 3.5N·m (31lbf·in).
12. Make sure the OPERATION SWITCH is in the OPERATION position.




**Operation switch in correct position**

## Reattach the cover assembly

1. Place the cover assembly in position and, using a torque wrench with a 4mm hex bit, tighten the screws to a torque of 3.9N·m (34.5lbf·in).
2. Tighten the screws in the following sequence:




**Screw tightening sequence**

## Turn on the power

1. Unlock the power distribution panel and turn ON the AC circuit breaker/s.
2. Remove the padlock and turn the DCD switch ON.
3. Set the P/1/0 switch to “1” (ON).