SolarEdge TerraMax™ Inverter Aux board replacement - Support kit manual

This manual describes the procedure for replacing the SolarEdge TerraMax Inverter Aux board.

Revision history

- Version 1.2, July 2024 – Updated procedures and tools
- Version 1.1, March 2024 – Changed name to TerraMax
- Version 1.0, January 2024 – Initial release

Kit contents

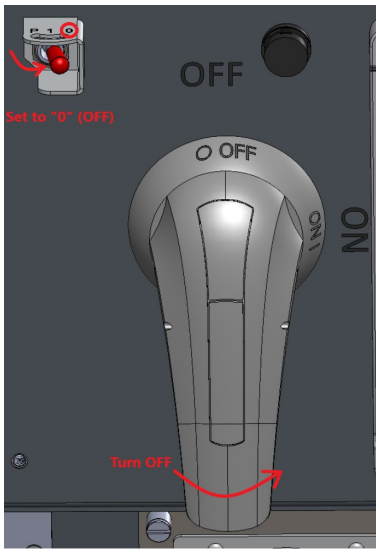
- SolarEdge TerraMax Inverter External Aux Board PN FLD-3PH-OR-AUX.

Required tools

- Torque screwdriver
- 30cm extension for screwdriver
- 4mm hex bit
- Voltmeter
- 7mm A/F socket wrench
- Long Torx T20 bit
- Flat Screwdriver
- Philips screwdriver

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

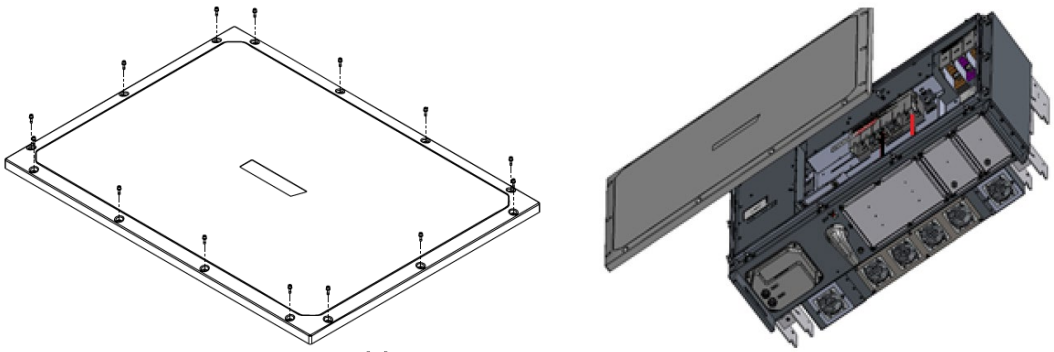
5. Disconnect AC power to the inverter by turning OFF the circuit breaker in the power distribution panel.
6. Wait at least five minutes for the DC Voltage inside the inverter to drop to a safe level.
7. As an additional safety precaution, lock the power distribution panel.

Remove the cover

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

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.



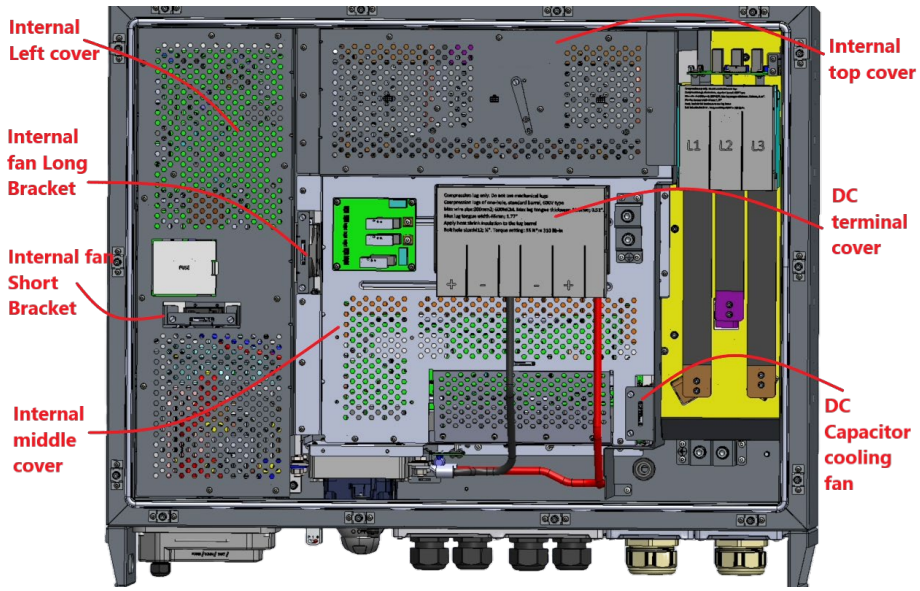
Inverter Cover Assembly

WARNING!

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

Remove the damaged AUX board

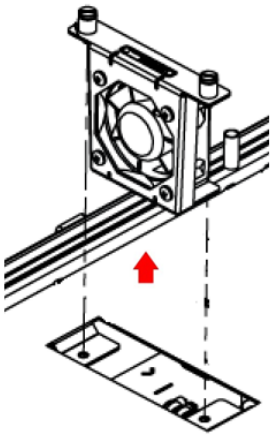
To reach the AUX board, first remove the fans and covers.



Covers and Fans

Remove the Internal Fan (Short Bracket)

1. Using a flat screwdriver, loosen the screws holding the Internal Fan (Short Bracket).
2. Disconnect its power cable.



Remove the Internal Fan (short bracket)

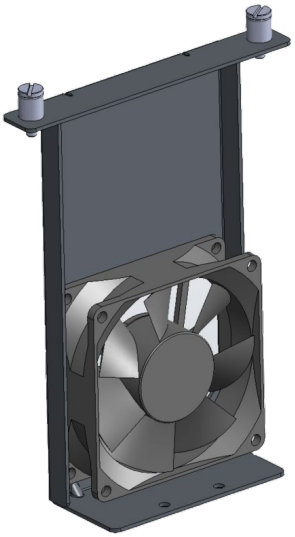
NOTES

The cable connectors are fitted with locking mechanisms. Make sure to press the lever to release the locking mechanism before disconnecting the connector. Do not pull on the wires to remove the connector from the socket.

3. Remove the fan unit from the inverter.

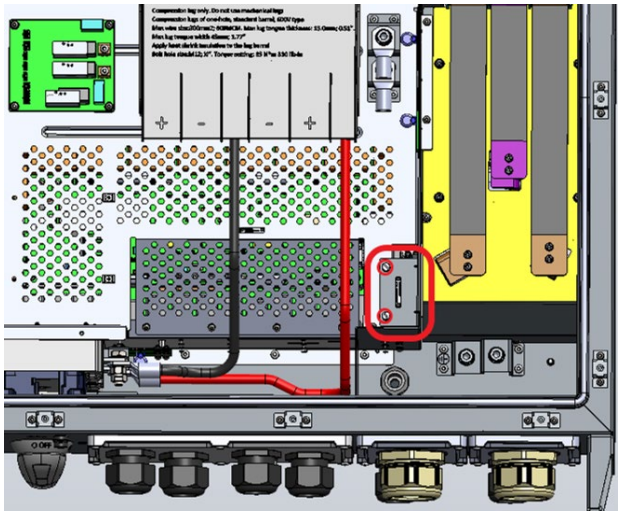
Remove the Internal Fan (Long Bracket)

1. Using a flat screwdriver, loosen the screws holding the Internal Fan for Long Bracket.
2. Disconnect the power cable.
3. Remove the Internal Fan for Long bracket from the inverter.



Remove the Fan (Long Bracket)

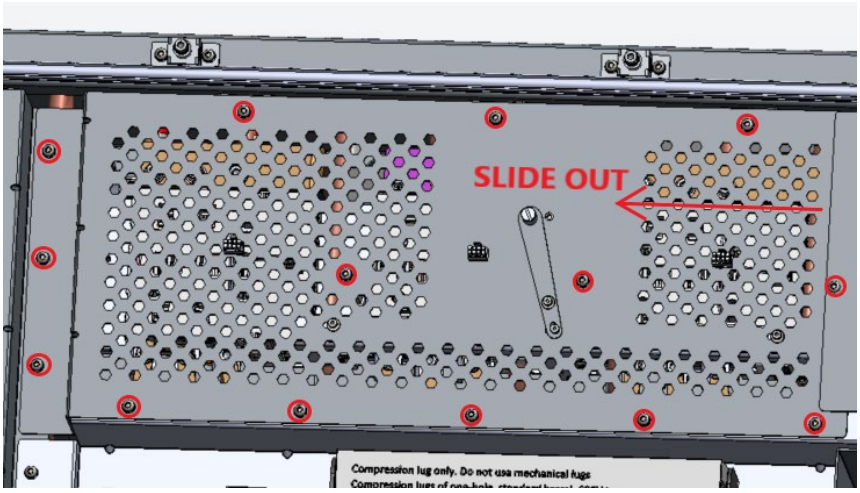
Remove the DC capacitor cooling fan



1. Using a flat screwdriver, loosen the two (2) captive screws holding the DC Capacitor cooling fan unit in position.
2. Disconnect the power cable connector.
3. Remove the complete DC Capacitor cooling fan unit from the inverter.

Remove the Internal top cover

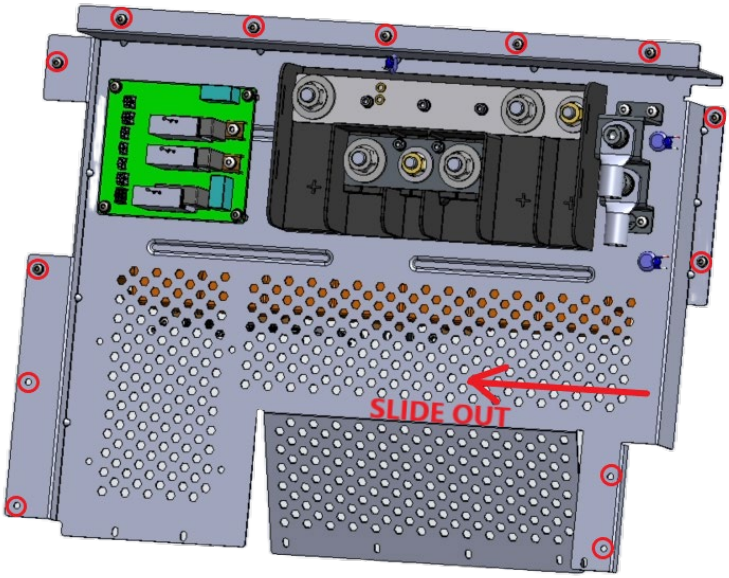
1. Using a Torx T20 bit, remove the screws holding the Internal top cover in place. Note the position of the OPERATION SWITCH and do not move the handle.
2. To remove the cover, carefully slide it to the left before lifting it out the inverter.



Remove the Internal top cover

Remove the Internal middle cover

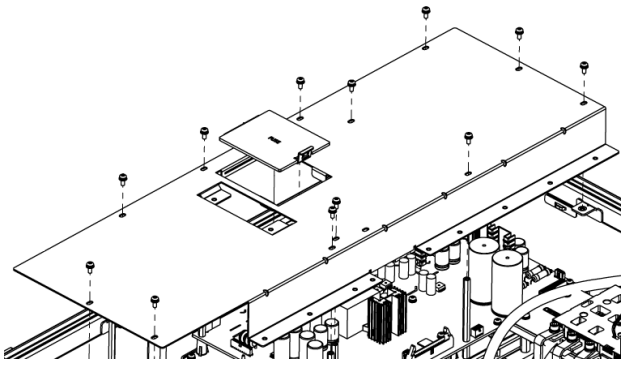
1. Using the screwdriver with the 30cm extension and a Torx T20 bit, remove the screws holding the Internal middle cover in place.
2. Carefully slide the cover to the left so that it is free from any obstacles.
3. Move the Internal middle cover aside making sure not to bend the cables excessively.



Remove the Internal middle cover

Remove the Internal left cover

Using a Torx T20 bit, remove the screws holding the Internal Left Cover in place.



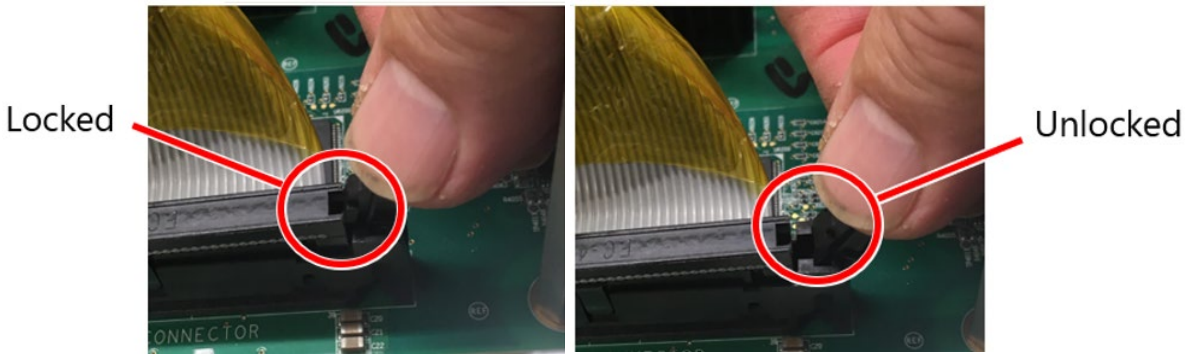
Remove the Internal Left Cover

Remove the damaged AUX board

Before disconnecting any cables from the AUX Board, make sure that you know exactly where to reconnect the cables. Mark them or take a photograph if necessary.

NOTE

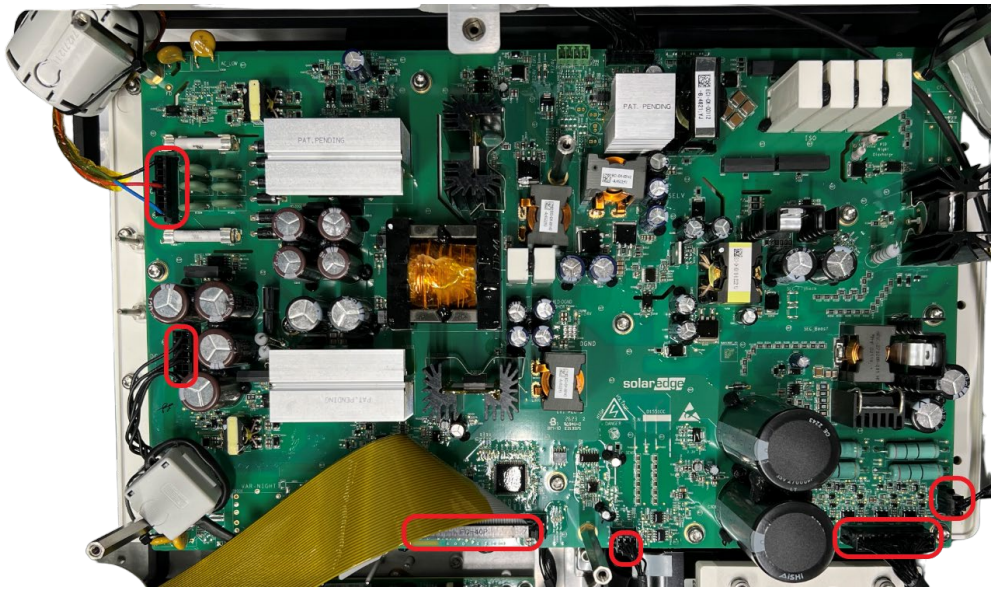
The flat cable connector is fitted with locking mechanisms. You must release the locks on each side of the connector. Do not pull on the wires to remove the connector from the socket.



Connector Locking Mechanisms

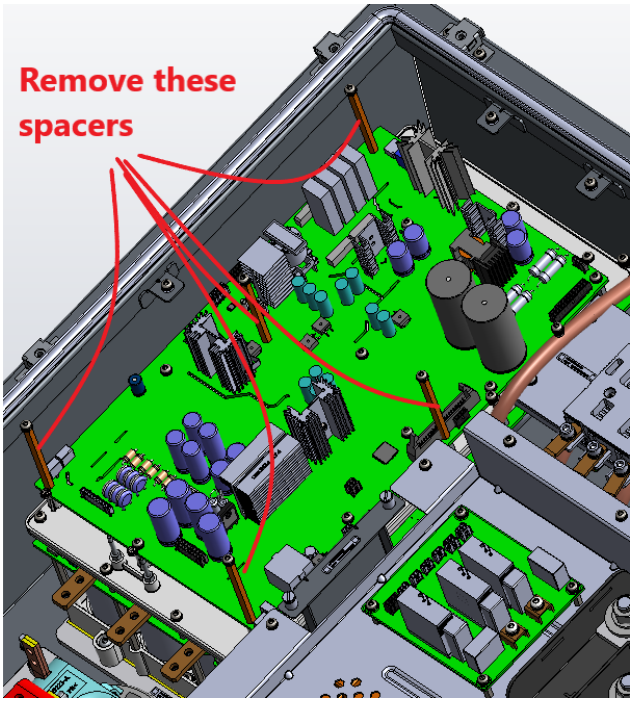
1. Disconnect the following cables from the AUX board:

- DC SPD cable
- AUX digital cable
- Power cable
- 24PE cable
- NTC cable
- Relay cable



Disconnect these cables from the AUX board

2. Take a photograph of the AUX board so that you can see where the spacers are located.
3. Using an 7mm socket wrench, remove five (5) spacers on the AUX board.



4. Using a screwdriver with a long Torx T20 bit, remove the screws holding the AUX board in place, and remove the board.

CAUTION

Always use a long bit when removing or inserting these screws to avoid damage to the board.

Install the replacement AUX board

1. Place the new AUX Board into position.
2. Insert the screws and, using a long Torx T20 bit, tighten the screws to a torque of 2.4N·m (21.2lbf·in).
3. Insert the spacers and, using an 7mm A/F socket wrench bit, tighten the spacers to a torque of 4.7N·m (41.5lbf·in).
4. Reconnect all the cables. Make sure the connectors are pushed all the way into the sockets and the locks are locked.

Install the covers

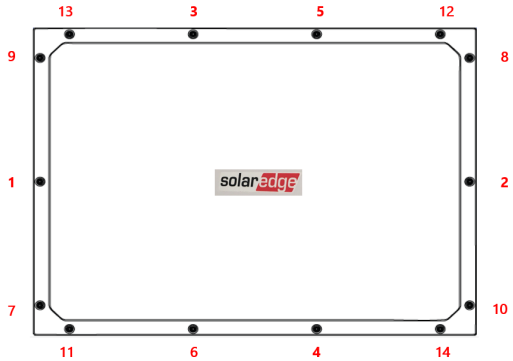
1. Place the Internal Left Cover into position, insert the screws, and using a Torx T20 bit, tighten the screws to a torque of 2.4N·m (21.2 lbf·in).
2. Replace the Internal middle cover, sliding it to the right so that it is in its correct position.
3. Replace the DC Terminal Block cover.
4. Place the Internal top cover into position sliding it to the right before inserting the screws.
5. Make sure the Operation Switch is in the OPERATION position as it was before disassembly.
6. Using a Torx T20 bit, tighten the screws to a torque of 2.4N·m (21.2lbf·in).

Install the fans

1. Reconnect the fan connector to its power socket and insert the Internal Fan (Long Bracket) into position.
2. Ensure that the holes at the bottom of the bracket engage with the two guide pins.
3. Using a flat screwdriver, tighten the screws to a torque of 2.4N·m (21.2lbf·in).
4. Reconnect the fan power cable and insert the Internal Fan (Short Bracket) into position.
5. Make sure the holes at the bottom of the bracket engage with the two guide pins.
6. Using a flat screwdriver, tighten the screws to a torque of 2.4N·m (21.2lbf·in).
7. Connect the fan power cable connector to its socket and insert the DC Capacitor Cooling Fan into position.
8. Using a flat screwdriver, tighten the two (2) screws to a torque of 2.4N·m (21.2lbf·in).

Reattach the Cover Assembly

1. Place the cover in position.
2. Using a 4mm hex bit and a torque wrench, tighten the screws to a torque of 3.9N·m (34lbf·in).
3. Tighten the screws in the following 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).