SolarEdge TerraMax™ Inverter Aux-to-Digital cable replacement - Support kit manual

This manual describes the procedure for replacing the SolarEdge TerraMax Inverter Aux-to-Digital cable.

Revision history

- Version 1.2, July 2024 – Changed DC ON/OFF switch to DC Disconnect switch
- Version 1.1, March 2024 – Changed name to TerraMax
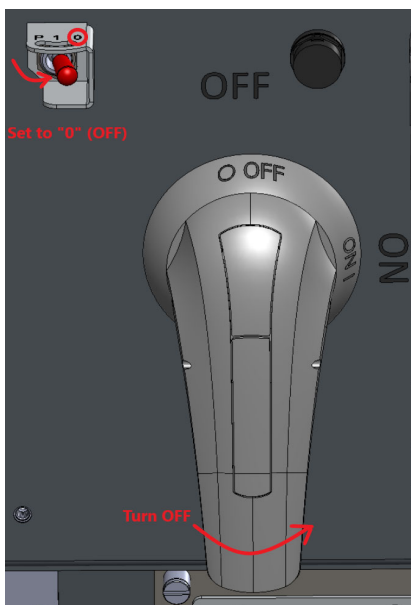- Version 1.0, January 2024 – Initial release

Kit contents

- SolarEdge TerraMax Inverter AUX to Digital cable PN: FLD-3PH-OR-CBL-DIG-AUX

Required Tools

- Torque screwdriver
- 30cm extension for screwdriver
- 4mm hex bit
- Torx T20 bit
- 17mm A/F deep socket wrench
- 18mm A/F deep socket wrench
- 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.
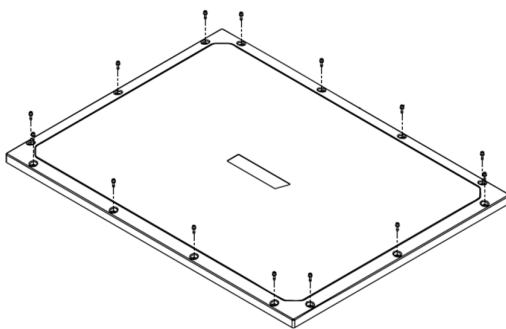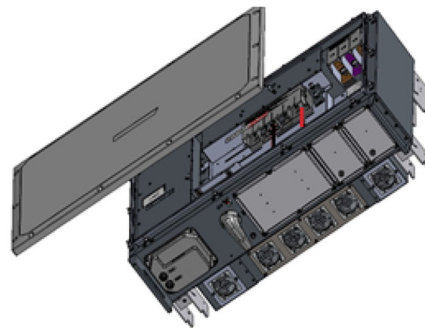7. As an additional safety precaution, lock the power distribution panel.

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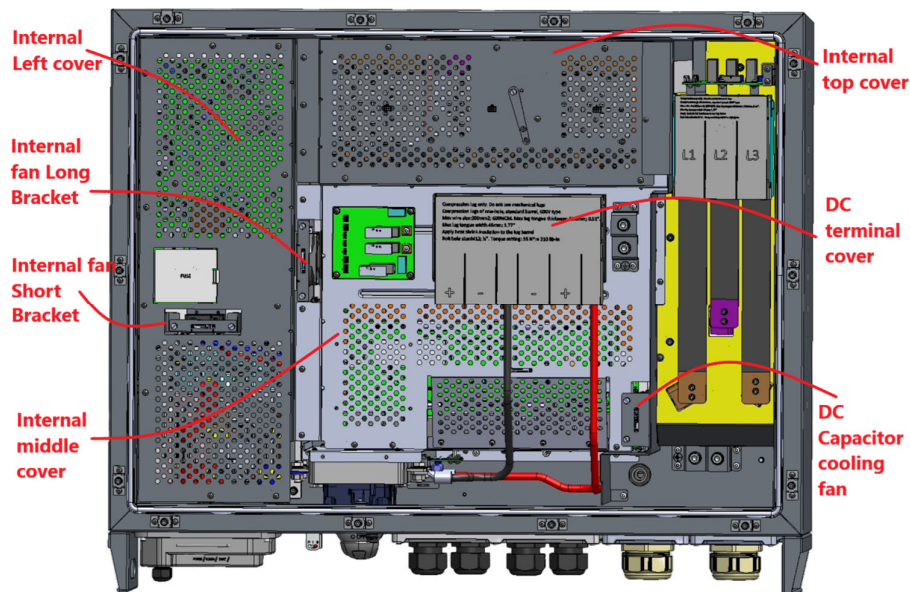

Inverter Cover Assembly

> **⚠ WARNING!**
> Before doing any maintenance work on the inverter, test for safe AC and DC voltages.

Remove the damaged AUX to Digital cable

Covers and fans

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. Remove the complete DC Capacitor cooling fan unit from the inverter.
3. Disconnect the fan power cable connector from its socket.

> 💬 **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.
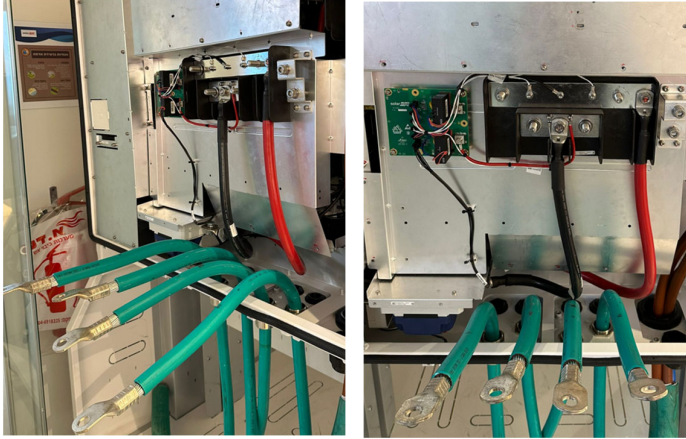
Remove the DC Terminal cover

Locate the DC terminal cover and remove it.

Disconnect the DC 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 sockets with 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.
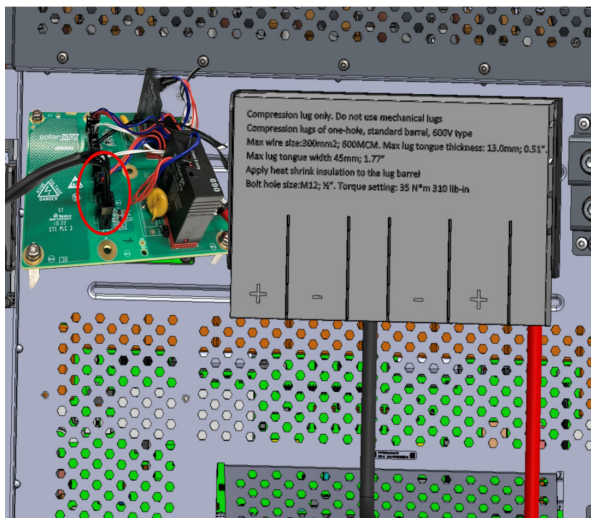

Bend the DC cables

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 board.
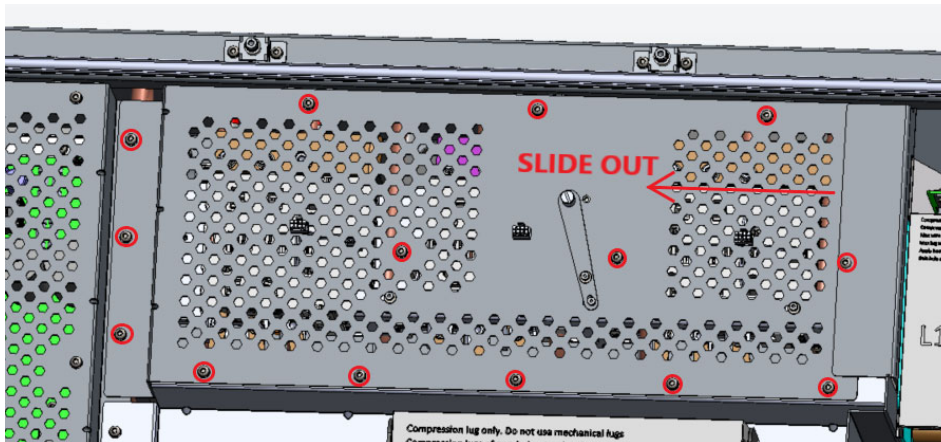

Disconnect the connector

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.
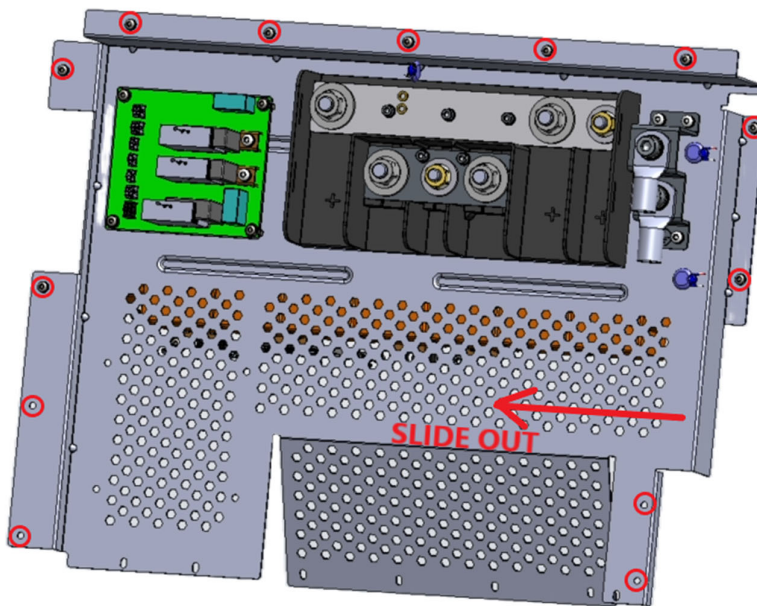
> **⌐⋯¬ NOTE**
>
> Do not change the position of the OPERATION SWITCH handle.

Remove the internal top cover

Remove the internal middle cover

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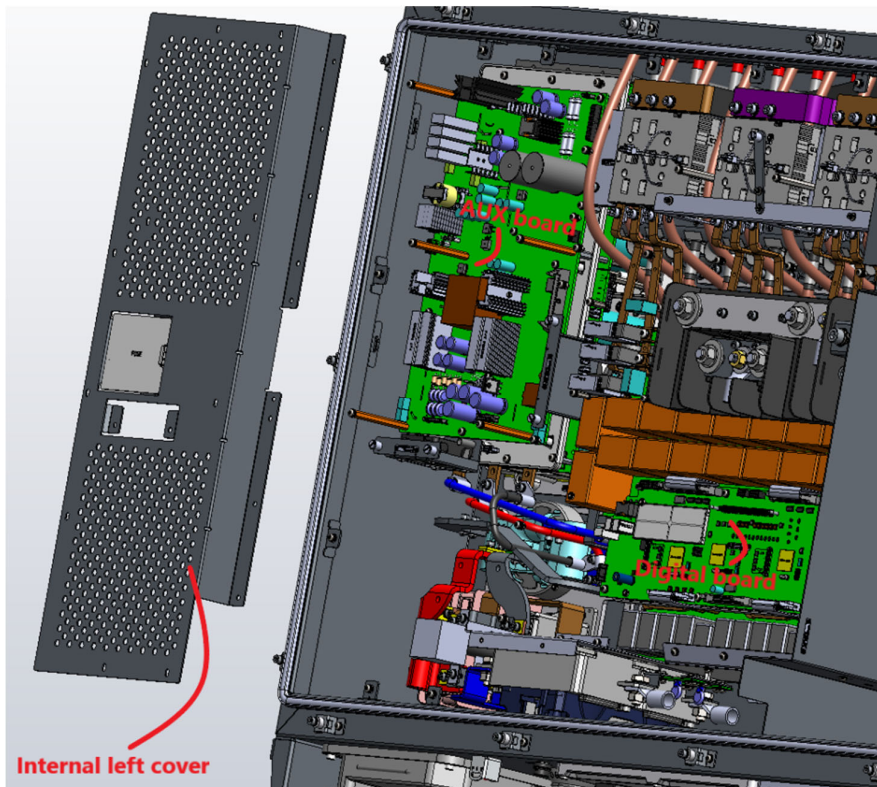2. To remove the internal middle cover, slide it to the left and lift it out of the inverter.

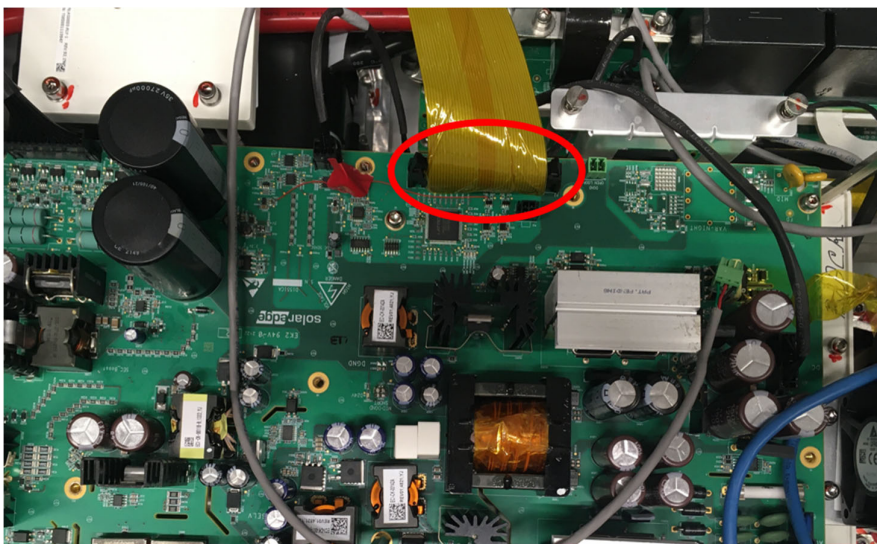
Remove the internal middle cover

Remove the internal left cover

1. Using a Torx T20 bit, remove the screws holding the internal left cover in place.
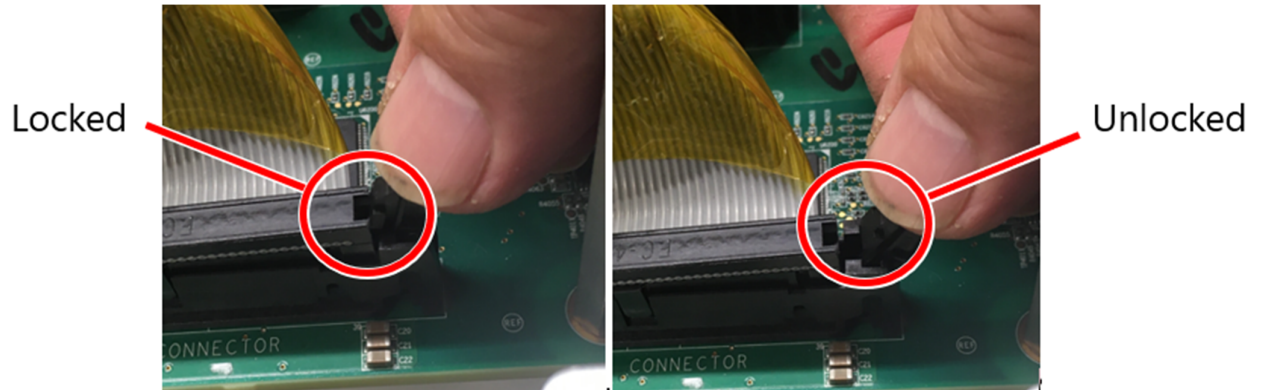2. Lift the cover out of the inverter.

Remove the Internal Left Cover

3. On the Aux board, locate the Aux-to-Digital cable.

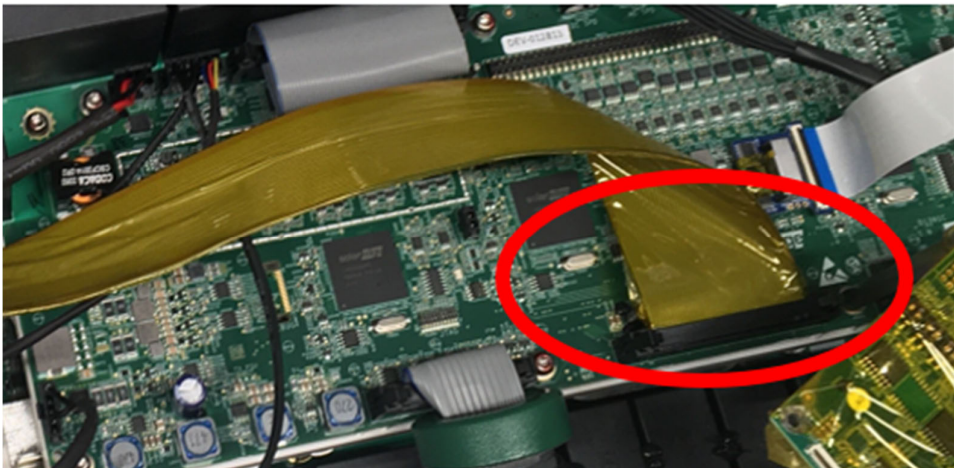**Aux-to-Digital cable on AUX board**

> 💬 **NOTE**
>
> The cable connectors are fitted with locking mechanisms. Before disconnecting the cable connector from the socket, release the two locks on either side of the socket. Never pull on the wires to remove the connector from the socket.

4. Disconnect the end of the Aux-to-Digital cable from the Aux board.
5. Cut the zip-tie holding the cable to the DC busbar.
6. Using the special tool provided, release the bead clamped onto the Aux-to-Digital cable.

7. On the Digital board, locate the other end of the Aux-to-Digital cable.
8. Disconnect it from the Digital board.
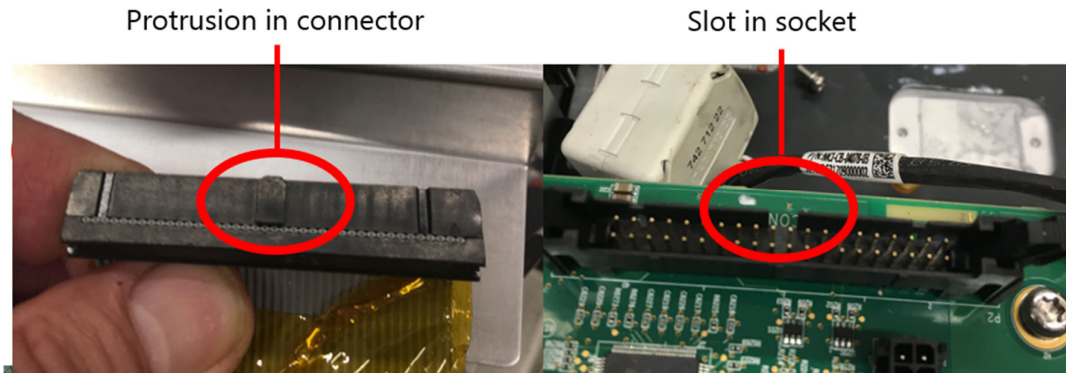

Digital board AUX-to-Digital cable

9. Discard the damaged AUX-to-Digital cable.
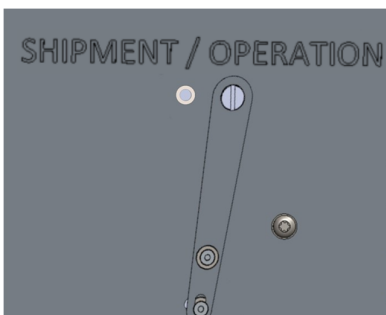
Install the replacement Aux-to-Digital cable

> **NOTE**
> Before connecting the new cable, make sure that:
> - The locking mechanisms are in the unlocked position.
> - The protrusion on the cable connector lines up with slot provided on the socket.

Protrusion in connector   Slot in socket

Protrusion and slot

1. Connect one end of the cable to the socket on the Digital board. Lock the locking mechanism.
2. Clamp the bead onto the new cable.
3. Using a zip-tie, tie the cable to the DC busbar.
4. Connect the other end of the cable to the AUX board. Lock the locking mechanism.
5. Place the Internal Left Cover into position and insert the screws.
6. Using a Torx T20 bit, tighten the screws to a torque of 3.5N·m (31lbf·in).
7. Place the internal middle cover into position (slide it to the right) and insert the screws.
8. Using a Torx T20 bit with the 30cm extension, tighten the screws to a torque of 3.5N·m (31lbf·in).
9. Place the Internal top cover into position and insert the screws.
10. Using a Torx T20 bit, tighten the screws to a torque of 3.5N·m (31lbf·in).
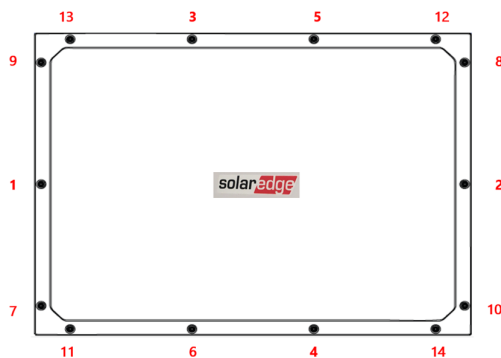11. Make sure the OPERATION SWITCH is in the **OPERATION** position.

Connect the cables and refit the fans

1. Reconnect all the DC cables.
2. Replace all the nuts and washers. Make sure the cables do not interfere with the Cover Assembly.
3. Using a 17mm A/F deep socket and a wrench, tighten the M10 nuts to a torque of 18N·m (159lbf·in).
4. Use an 18mm A/F deep socket and a wrench, tighten the M12 nuts to a torque of 35N·m (310lbf·in).
5. Reconnect the Digital board cable to the socket of the DC-SPD.
6. Place the DC terminal block cover in position. The molded text must face upwards.
7. Push the cover down till the locking tabs engage and lock with the slots provided in the DC Terminal Block.
8. Reconnect the cable for the DC Capacitor cooling fan.
9. Push the fan back into its position, taking care to keep the cable free from the fan blades.
10. Using a flat screwdriver, tighten the screws to a torque of 2.4N·m (21.2lbf·in).

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).