SolarEdge TerraMax[™] Inverter communications board assembly replacement - support kit manual

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

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 Communications Board PN FLD-3PH-OR-PRT.

Required tools

- Torque screwdriver
- 🟉 4mm hex bit
- Voltmeter
- Small flat 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.

WARNING!

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

7. As an additional safety precaution, lock the power distribution panel.

Remove the damaged communications board assembly

- 1. Using a 4mm hex bit, loosen the screws holding the communications board assembly in place.
- 2. Pull the communications board assembly off the guide pins.



Remove the communications board assembly

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The communications board plastic cover is connected to the inverter by a metal cable. You must release the cable before you can replace the assembly.

Identify the cables

The cables and connectors connected to the communications board are shown below:



No. Connector Identification

- 1 LTE antenna
- 2 Zigbee antenna (if connected)
- 3 P1012 (6-pin)
- 4 RS485
- 5 CAN bus
- 6 P321 (3-pin)
 - Ethernet

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Disconnect connectors

··· NOTE

Some cable connectors have a locking mechanism. Make sure to press and release the locking mechanism when removing the connector from the socket. Do not grip the wires to pull the connector from the socket.

1. Disconnect the connector between the inverter and the communications board assembly.





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- This connector combines the cables from P321 and P1012.
- 2. Release the RS485 and CAN-bus green connector.



- 3. Using a small flat screwdriver, release the screws holding the RS485 and CAN bus wires in the connector. Take careful note of the position of each wire so that you can reconnect the wires correctly. If necessary, take a photograph.
- 4. Disconnect the ethernet cable from its socket.
- 5. Disconnect the antenna cable/s.
- 6. Loosen the cable gland nuts.
- 7. Carefully pull the cables out of the communications board assembly.



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Install the replacement communications board assembly

- 1. Feed the cables back through the gland holes of the new communications board assembly.
- 2. Connect the 6-pin connector to the P1012 socket and the 3-pin connector to the P321 socket Make sure the connectors are pushed all the way into their sockets.
- 3. Reconnect the antenna cable/s.
- 4. Reconnect the ethernet cable.
- 5. Insert the wires of the RS485 and the CAN bus into their correct positions and tighten the screws. Reconnect the connector.
- 6. Reconnect the connector that connects the communications board assembly to the inverter.
- 7. Reconnect the metal cable holding the communication board plastic cover to the inverter.
- 8. Tighten the cable gland nuts.

IMPORTANT NOTE

When replacing the communications board in either the first or the last inverter in multiple inverter systems, it is very important to set the "termination" switch to ON. The switch is located on the board as shown in the figure below.



9. Guide the holes in the communications board assembly over the two guide pins. Make sure you don't bend or trap the cables.



Install the new communications board assembly



10. Insert the screws and using a 4mm hex bit, tighten them to a torque of 2.4N·m (21.2 lbf·in).

Turn on the power

- 1. Turn ON the AC circuit breaker.
- 2. Remove the padlock and turn the DCD switch ON.
- 3. Set the P/1/0 switch to "1" (ON).

Communication board replacement done on a leader inverter

- 1. Using SetApp, scan the QR code on the leader inverter.
- 2. Hold the P/1/0 switch at the P position for 2 seconds to connect to the inverter.
- 3. In the Commissioning screen, tap Site Communication > CAN > Protocol > SolarEdge leader.
- 4. Go back.
- 5. Select Followers > Detect followers.

Communication board replacement done on a follower inverter

- 1. Using SetApp, scan the QR code of the affected follower inverter.
- 2. Hold the P/1/0 switch at the P position for 2 seconds to connect to the inverter.
- 3. Follow the on-screen instructions on SetApp.
- 4. Make sure the inverter was activated.
- 5. Set country and grid.
- 6. At the leader inverter, scan the QR code and connect to the inverter by holding the P/1/0 switch at the P position for 2 seconds.
- 7. In the **Commissioning** screen tap **Site communication** > **CAN** > **followers**.
- 8. Ensure that the serial number of the affected follower appears.
- 9. If it doesn't appear, tap **Detect followers**.