



1.0 Description

These instructions provide information on removing and replacing the DC terminal plate in a ME, RD, MS, MSH or MS-PAE Series inverter/charger. This is required when some internal components are replaced, or when the DC terminal plate has been damaged and needs to be replaced with a new plate (PN: TDC-Plate).

Note: This document is part of a series of Service Instructions to help qualified personnel replace components that have failed or have been damaged.

2.0 Installation Preparation

Before removing or replacing the DC terminal plate, read this entire document carefully and follow all instructions.

2.1 Safety Precautions

Follow all electrical safety precautions and the ESD prevention guidelines below, and in the *Electrical Safety Precautions and Electrostatic Discharge Prevention: Service Instructions: 64-1000*.



Warning: Hazardous voltages are present within the inverter when power is applied. Do not remove the inverter's top cover without first turning off and disconnecting all AC/DC power to the inverter. Always replace the top cover before reconnecting power.



Warning: The capacitors inside the inverter store electric energy even after all AC/DC power is removed. After disconnecting all AC/DC power to the inverter, wait 5 minutes for the energy in the capacitors to dissipate before working on the unit.



Figure 1, DC Terminal Plate

2.2 Included Materials

Before dismantling your inverter/charger, inspect the new DC terminal plate and confirm that there is no obvious physical damage. Ensure the DC terminal plate kit contains the items listed below. If any item appears to be damaged, missing or incorrect, contact Sensata.

- DC terminal plate kit – includes an insulated plate with positive and negative DC terminals, and two 5/16" nuts (see Figure 1).

Note: All removed items must be returned if repair is for warranty consideration. Save the packing material and shipping container to use when returning the removed items.

2.3 Required Tools and Equipment

Before disassembling the inverter, ensure you have the following tools and equipment to remove and replace the DC terminal plate:

- T25 Torx head screwdriver (≥ 6" shaft recommended) – for #10-32 screws
- 7/16" socket with ≥ 6" extension and socket wrench – for ¼-20 bolts
- 7/16" open end wrench – for ¼-20 nuts (only needed for inverters with the small FET board)
- Torque wrench (130 in-lbs torque required) – for ¼-20 bolts with 7/16" head

3.0 Removing and Replacing the DC Plate

3.1 Removing the DC Terminal Plate

1. Remove the inverter's top cover and familiarize yourself with the inverter's internal components as described in the *Top Cover Removal and Replacement* service instruction sheet for your inverter model.
2. Ensure all cables are removed from the positive and negative terminals on the DC terminal plate.
3. Remove the two ¼-20 bolts (7/16" head) on the back of the DC terminal plate (see Figures 2 and 3, Item B).
Note: Record how this hardware is removed, it will need to be reconnected in the same way.
Note: While unscrewing the ¼-20 bolts on the bus wires, (Figure 2, Item A) use a 7/16" wrench to hold the nut.
4. Remove the two #10-32 screws (T25 head) holding the DC terminal plate to the front wall of the inverter base (see Figure 4, Item B).
5. Remove the DC terminal plate by firmly lifting it straight up from the inverter base.

DC Terminal Plate Removal and Replacement

3.2 Replacing the DC Terminal Plate

The steps below assume the old DC terminal plate has been damaged and is being replaced with a new DC terminal plate. If only replacing the original DC terminal plate, ignore any reference to the "new" DC terminal plate.

1. Slide the new DC terminal plate down the front wall of the inverter base. Make sure the slots on the side of the DC terminal plate are aligned correctly (see Figure 4, Item A).

Note: The DC terminal plate has a slight V-shape (the top is slightly wider than the bottom) and can only be correctly installed one way.

2. Firmly push down on the DC terminal plate until it sits flush against the base of the inverter.
3. Screw in the two #10-32 screws (T25 head) that hold the front of the DC terminal plate to the inverter base (see Figure 4, Item B).
4. Connect the DC terminal plate to the DC busbars/bus wires using the two ¼-20 bolts (7/16" head). Refer to Figure 2 or 3, depending on the inverter's FET board. Torque these connections to 130 in-lbs.



Caution: Ensure these ¼-20 bolts are reconnected in the same way as they were removed and are correctly torqued. These connections are required to carry very high DC current, and an improper connection will affect the performance of the inverter and may cause damage.

5. The DC terminal plate is now installed. Review all the connections a final time to ensure they are correct.

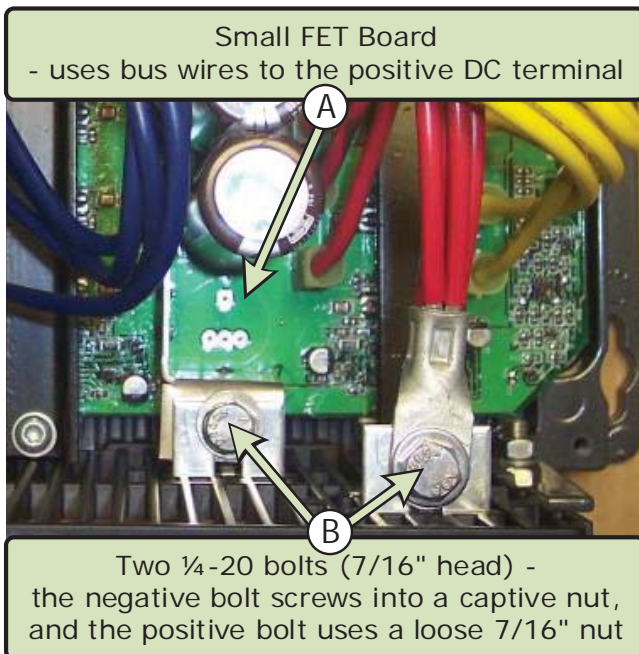


Figure 2, DC Terminal Plate to Small FET Board

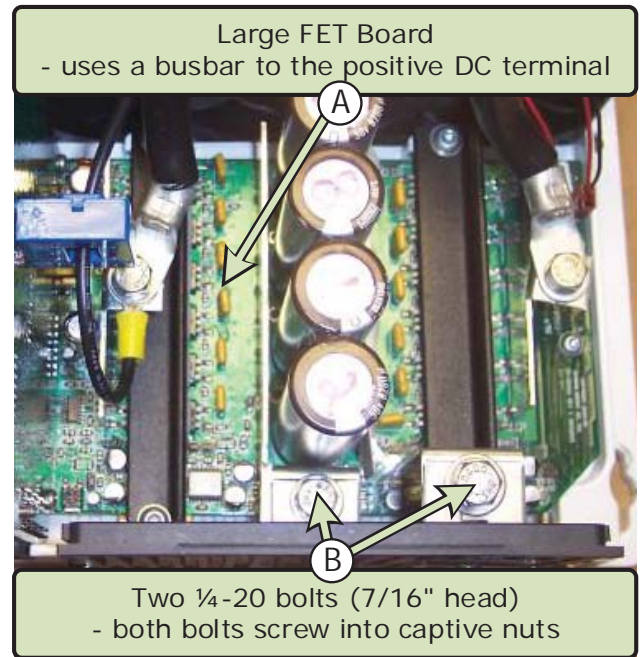


Figure 3, DC Terminal Plate to Large FET Board

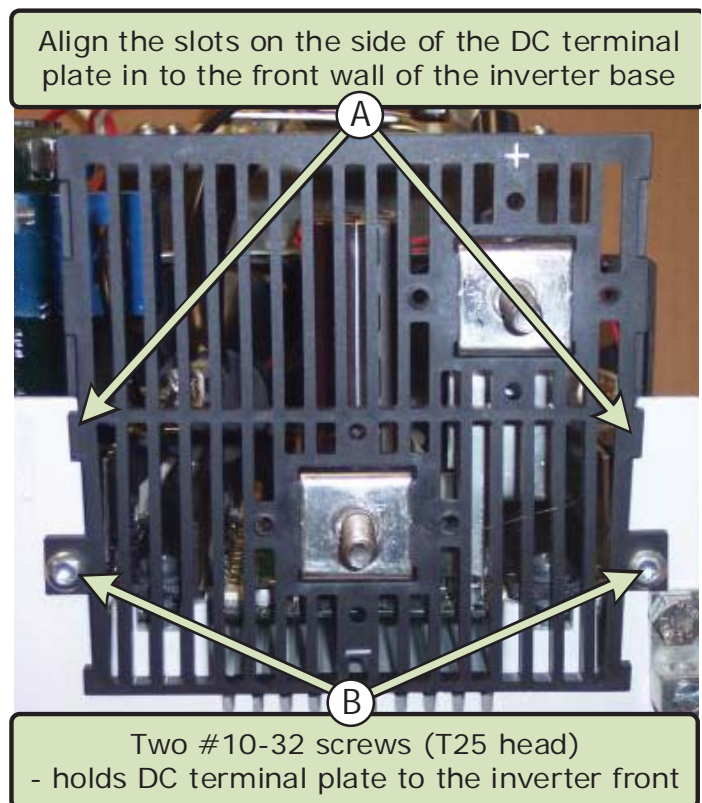


Figure 4, Front of the DC Terminal Plate

If you have no other internal repairs to perform, reinstall the top cover as described in the *Top Cover Removal and Replacement* service instructions for your inverter model.