



1.0 Description

Use these instructions to remove/replace an AC board in MS, ME, RD, MS-E, RD-E, MS-PAE, and MS-PE Series inverter/chargers.



Info: If you have an MSH Series inverter/charger, refer to Service Instructions: 64-1008 for information on removing/replacing its AC board.

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 an AC board, read this entire document 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 and 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 and DC power is removed. After disconnecting all AC and DC power to the inverter, wait 5 minutes for the energy in the capacitors to dissipate before working on the unit.



Caution: Observe all ESD safety precautions while working with the AC board and within the inverter. Failure to follow ESD safety precautions could result in damage to internal components and the inverter.

2.2 Included Materials

Before dismantling the inverter, inspect the new AC board to ensure there is no obvious physical damage. Check that the part label on the box containing the new AC board corresponds to the model number of the inverter that is being repaired (see Table). Compare the two AC boards to ensure you have the right board. Contact Sensata if any item appears to be damaged, missing or incorrect.

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.

Inverter Model	Part Label (on box)	Figure
ME Series	TACB-ME/MS	Figure 3
MS Series	TACB-ME/MS	Figure 3
ME2000-B w/ breakers	TACB-MS2000/B	Figure 4
MS2000-B w/ breakers	TACB-MS2000/B	Figure 5
ME2000 w/o breakers	TACB-ME2000	Figure 6
MS2000 w/o breakers	TACB-MS2000	Figure 7
MS-PAE Series	TACB-MSPAЕ	Figure 8
MS-AE Series	TACB-MSAE	Figure 9
MS-E Series	TACB-MS-E	Figure 10
MS-PE Series	TACB-MS-PE	Figure 11
RD Series	TACB-RD	Figure 12
RD-E Series	TACB-RD-E	Figure 13

2.3 Required Tools and Equipment

Before disassembling the inverter, ensure you have the following tools and equipment to remove and replace the AC board:

- T15 Torx head screwdriver (≥6" shaft required) – for #6-32 screws
- T25 Torx head screwdriver – for #10-32 screws
- Wire cutters (with ability to crimp)
- Phillips screwdriver

3.0 Removing and Replacing an AC Board

This section provides information on removing and replacing the AC board.

3.1 Locating the AC Board

1. Remove the inverter's top cover and review the internal components as described in the *Top Cover Removal and Replacement with Internal Component Identification, Service Instructions: 64-1001*.

2. Locate the AC board in the inverter.

Note: If you have an RD, RD-E, MS2000, MS2000-B, MS-E, MS-PE, or any ME Series inverter, proceed to Section 3.3.

If you have an MS, MS-PAE, and MS-AE inverters: The unit's filter board must be removed before you can access the AC board – see Section 3.2.

3.2 Removing the Filter Board

3. Remove the four #6-32 screws (T15 Torx head) and support posts securing the filter board (see Figure 1).

Note: Mark any wires on the filter board before disconnecting them, and then lift the filter board up and away from the AC board.

MS/RD AC Board Removal and Replacement

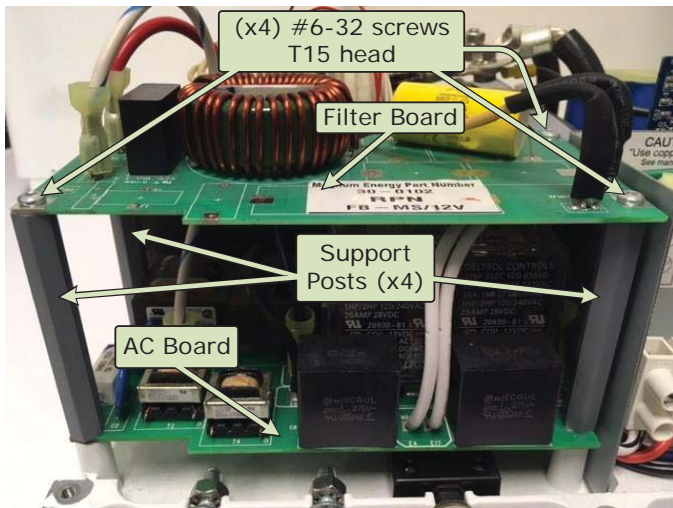


Figure 1, Filter Board Removal

3.3 Removing the AC Board

- Remove the four #6-32 screws (T15 Torx head) securing the AC board to the inverter's base.
- Use the wire cutters to snip the four small wires (x2 red, x2 white*) connecting the AC board to the inverter's transformer. See Figure 3.
* – Some models may have two brown wires instead of two white wires.
Note: Snip the wires approximately halfway between the AC board and the transformer.
Note: Take care when working with these wires that you do not loosen/detach those wires at their connection point on the transformer.
- IMPORTANT:** Mark any wires on the AC board before disconnecting them.
- Disconnect the cable ribbon from the AC board, and move out of the way.
- Loosen the terminal block screws that secure the input/output wires coming from the AC board, and then remove those wires from the terminal block.
- Disconnect all wires running from the AC board to any breakers.
Note: *PAE only:* Squeeze and pull out the connector (with attached small red, white, and blue wires) from front of AC board. See Figure 8.
- The AC board is now removed, using ESD precautions, place this AC board aside until it can be placed in an antistatic bag to be returned with any other replaced components.

4.0 Replacing the AC Board

4.1 Replacing the AC Board

- Reconnect all wires running from the AC board to any breakers.
Note: *PAE only:* Replace the connector (with attached small red, white, and blue wires) to front of AC board. See Figure 8.
- Route the AC board's input/output wires to the terminal block, and then secure each by tightening the respective terminal block screws.
- Reconnect the inverter's cable ribbon to the AC board.
- Insert the four small wires from the transformer (that you previously snipped) in to the new AC board's four butt splices, and then use the wire crimper to secure each wire. See Figure 2.
Note: Either red wire can be connected to either red-wired butt splice, and either white wire (or brown wire) can be connected to either white-wired butt splice.
- Replace and tighten the four #6-32 screws (T15 Torx head) securing the AC board to the inverter's base.
For MS, MS-PAE, and MS-AE inverters: The unit's filter board must be repositioned before you can secure the AC board – see Step 6.
- Reposition the filter board over the AC board (with the support posts in place), and then insert the four #6-32 screws (3½", T15 Torx head) to secure both boards to the inverter's base. See Figure 1.
Note: Make sure to reconnect all the wires to the filter board that you previously disconnected when removing the filter board.
- Replace the inverter's top cover, and then secure per the *Top Cover Removal and Replacement with Internal Component Identification, Service Instructions: 64-1001*.



Figure 2, Butt Splices

5.0 AC Boards for Magnum Inverter Models

Refer to Figures 3 thru 13 for examples of model-specific AC boards. Please note that the particular board you are working with may vary somewhat from what is pictured.

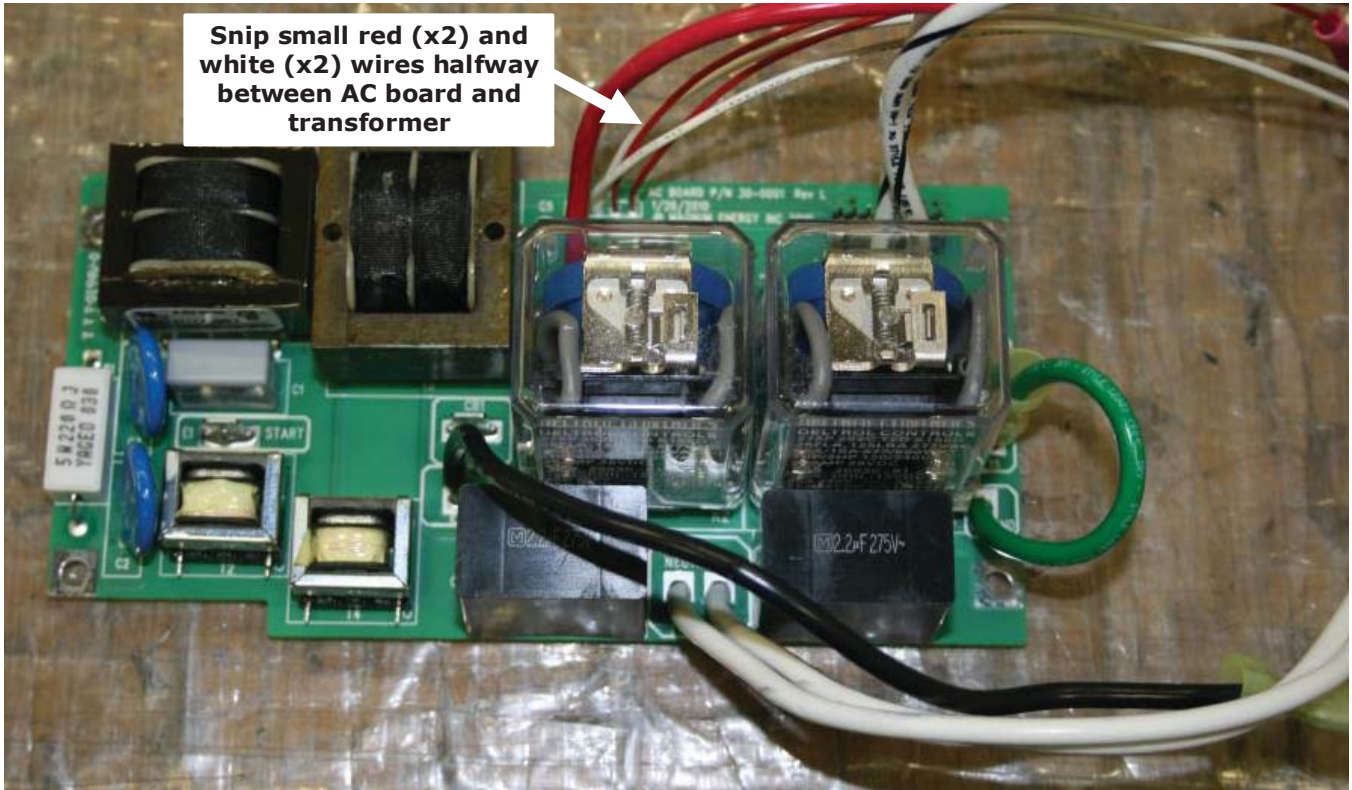


Figure 3, ME/MS Series AC Board (TACB-ME/MS)

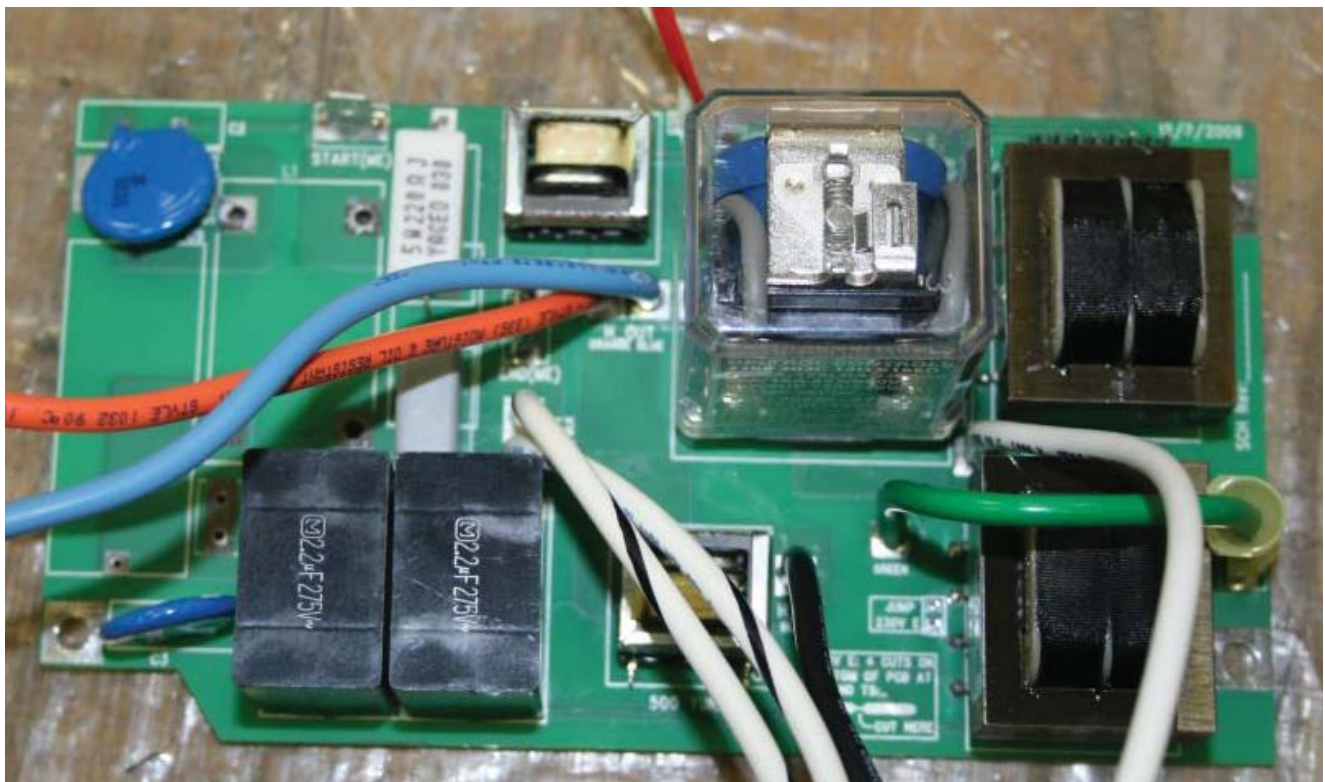


Figure 4, ME2000 Series AC Board with Breakers (TACB-ME2000/B)

MS/RD AC Board Removal and Replacement

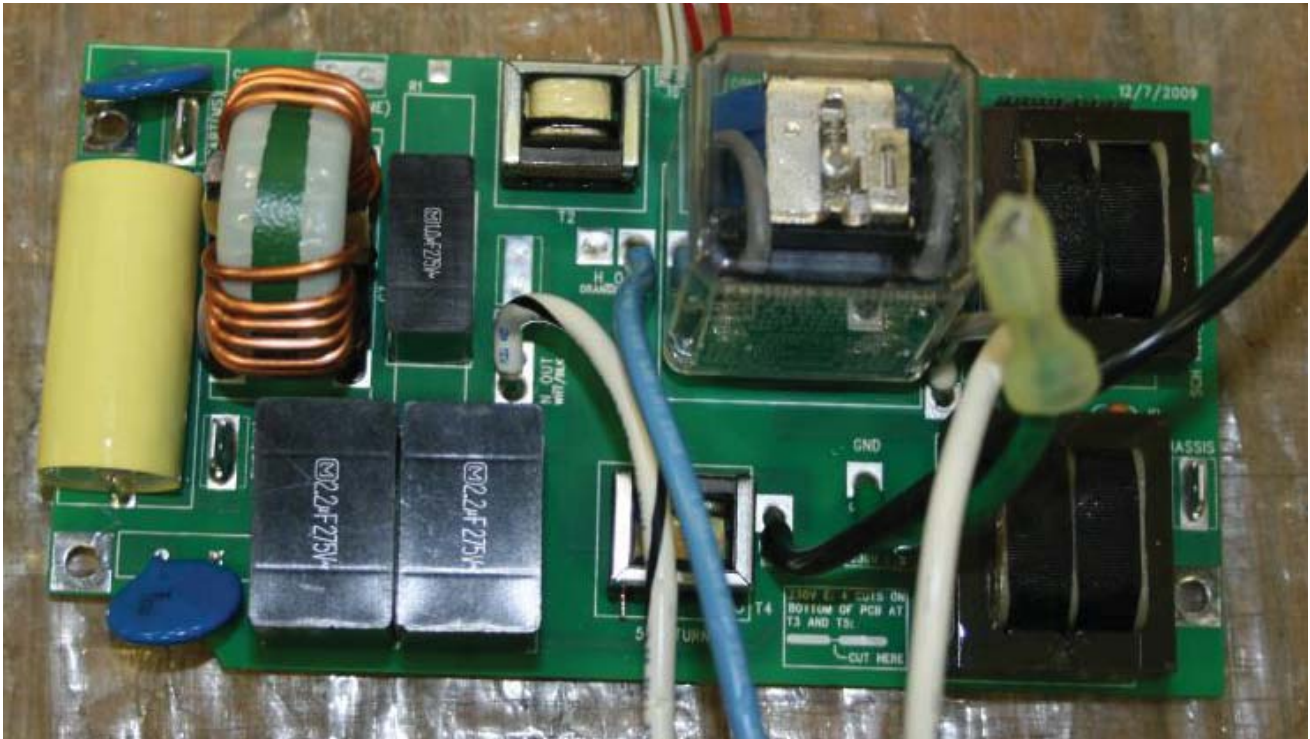


Figure 5, MS2000 Series with Breakers (TACB-MS2000/B)

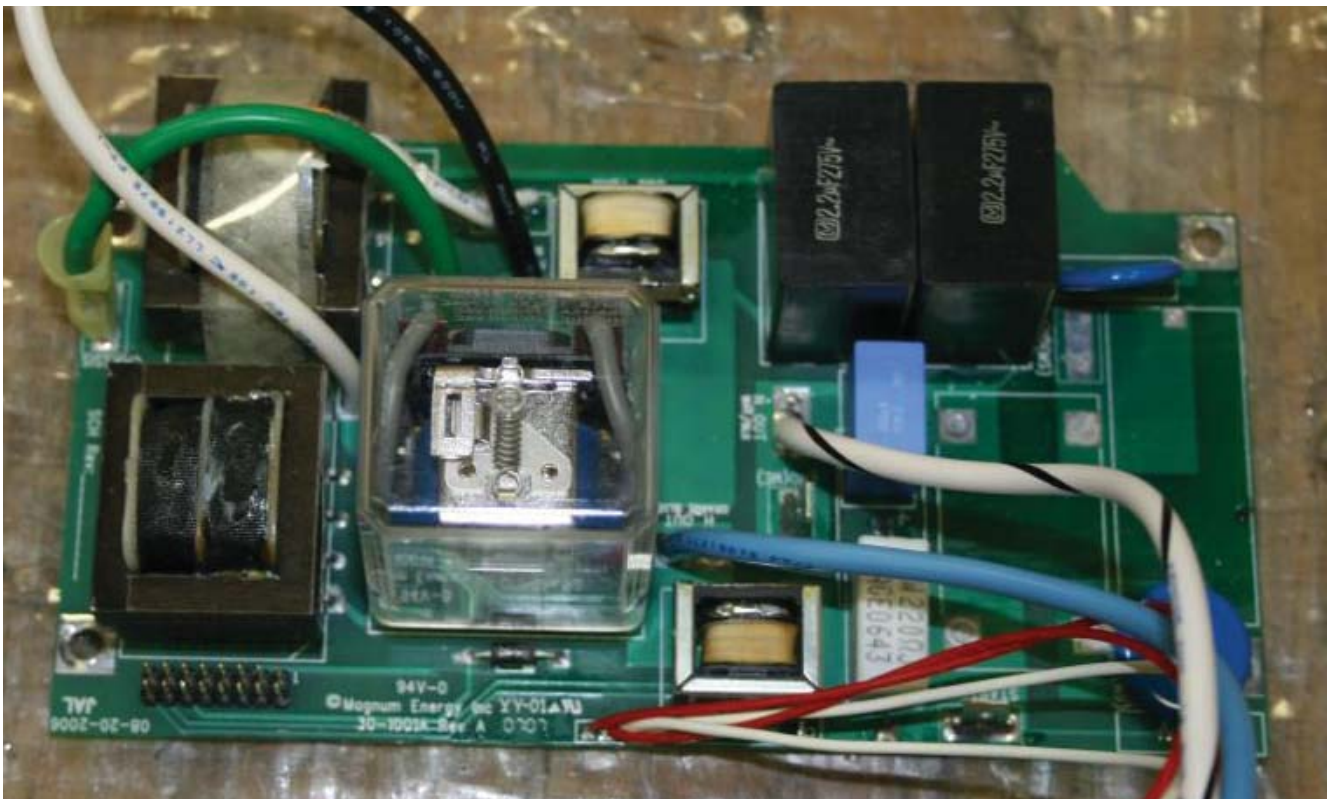


Figure 6, ME2000 Series AC Board without Breakers (TACB-ME2000)



Figure 7, MS2000 Series AC Board without Breakers (TACB-MS2000)

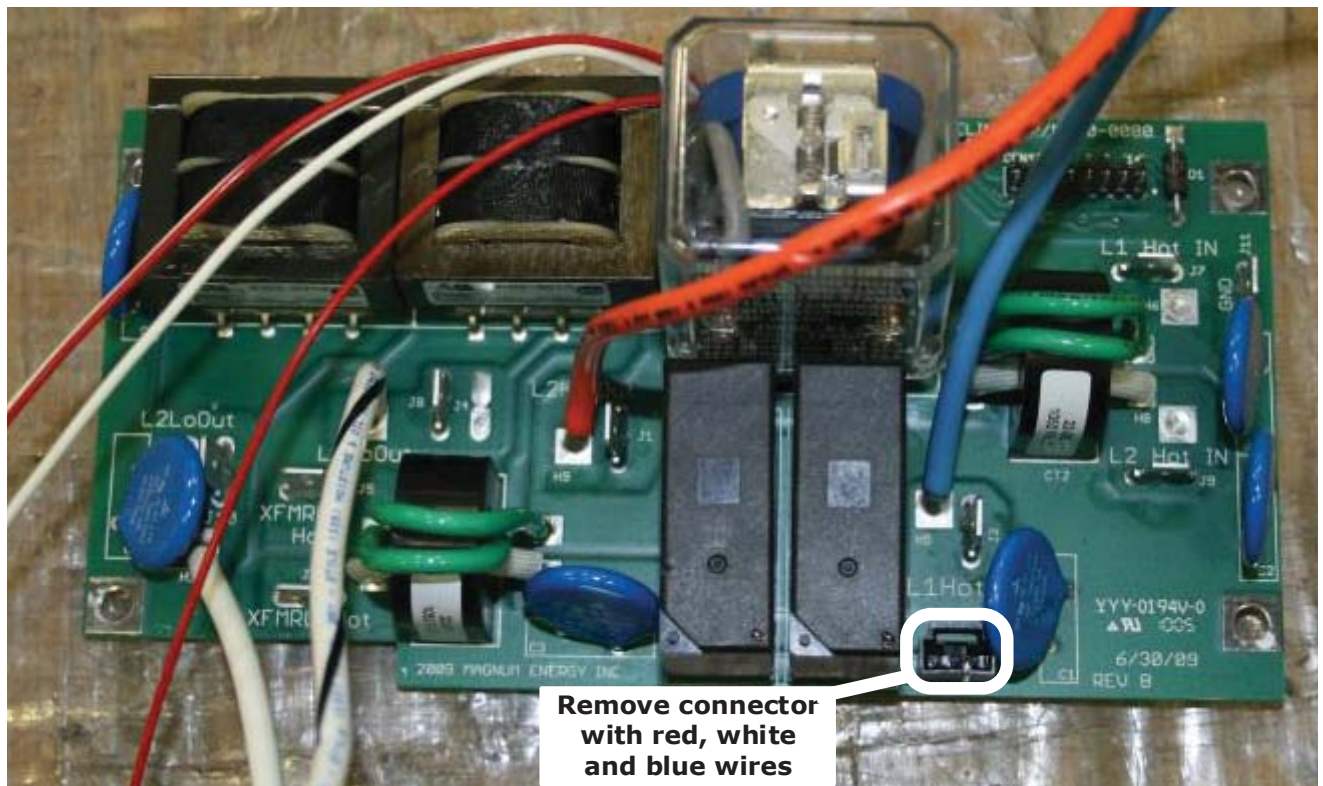


Figure 8, MS-PAE Series AC Board (TACB-MSPAЕ)

MS/RD AC Board Removal and Replacement



Figure 9, MS-AE Series AC Board (TACB-MSAE)

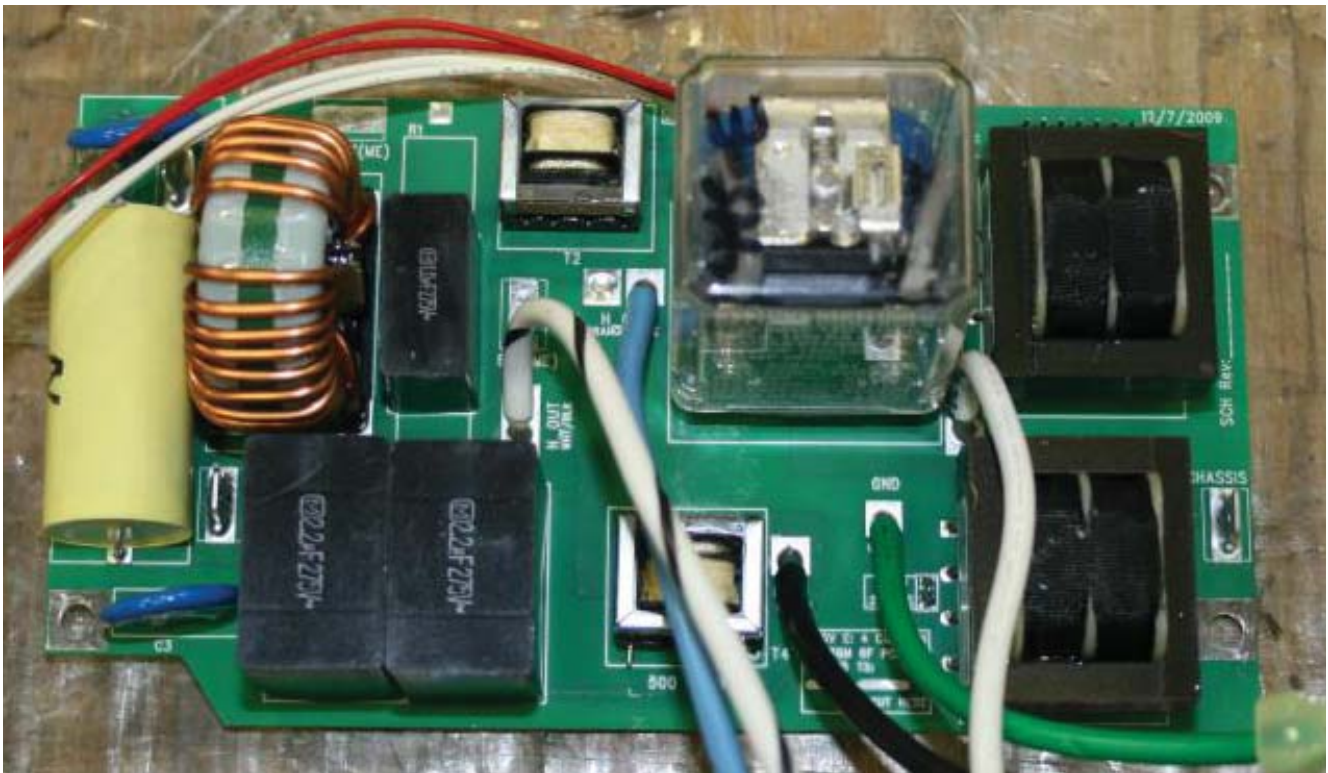


Figure 10, MS-E Series AC Board (TACB-MS-E)

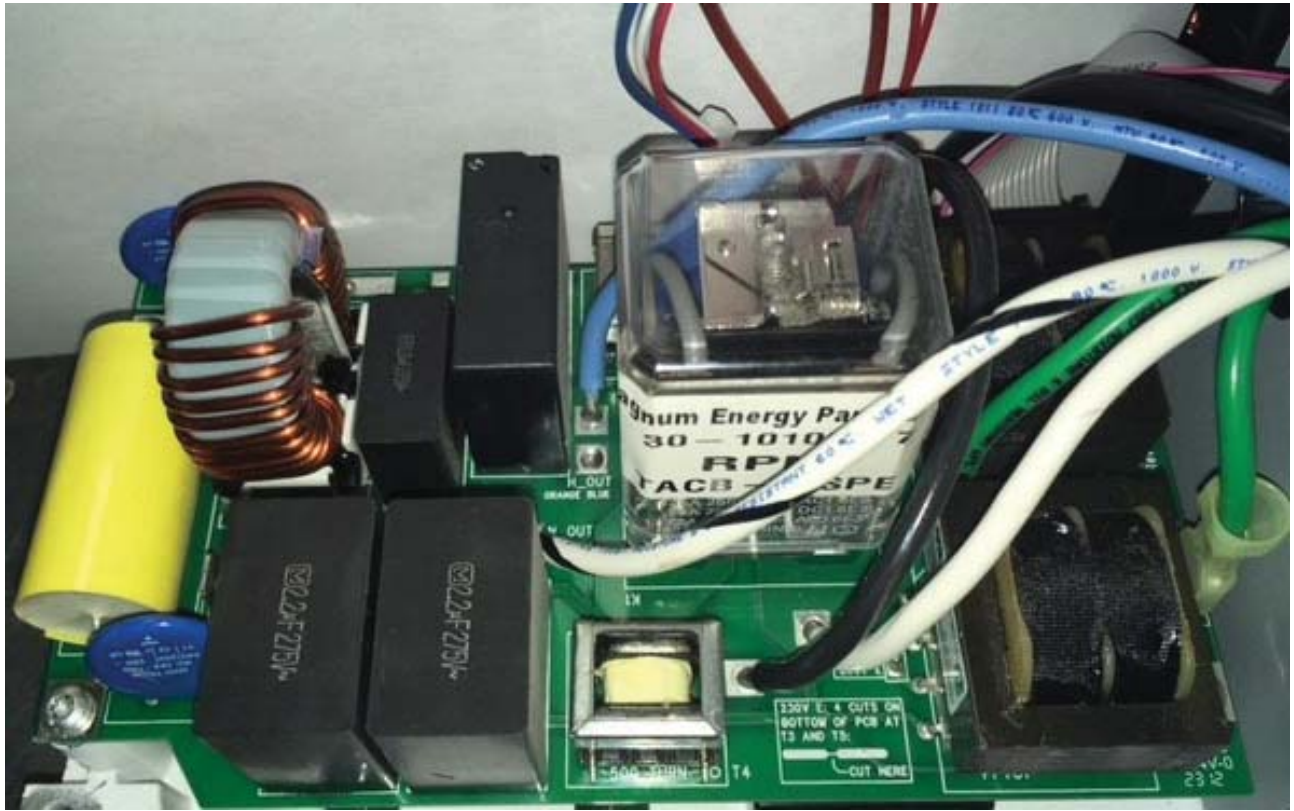


Figure 11, MS-PE Series AC Board (TACB-MS-PE)

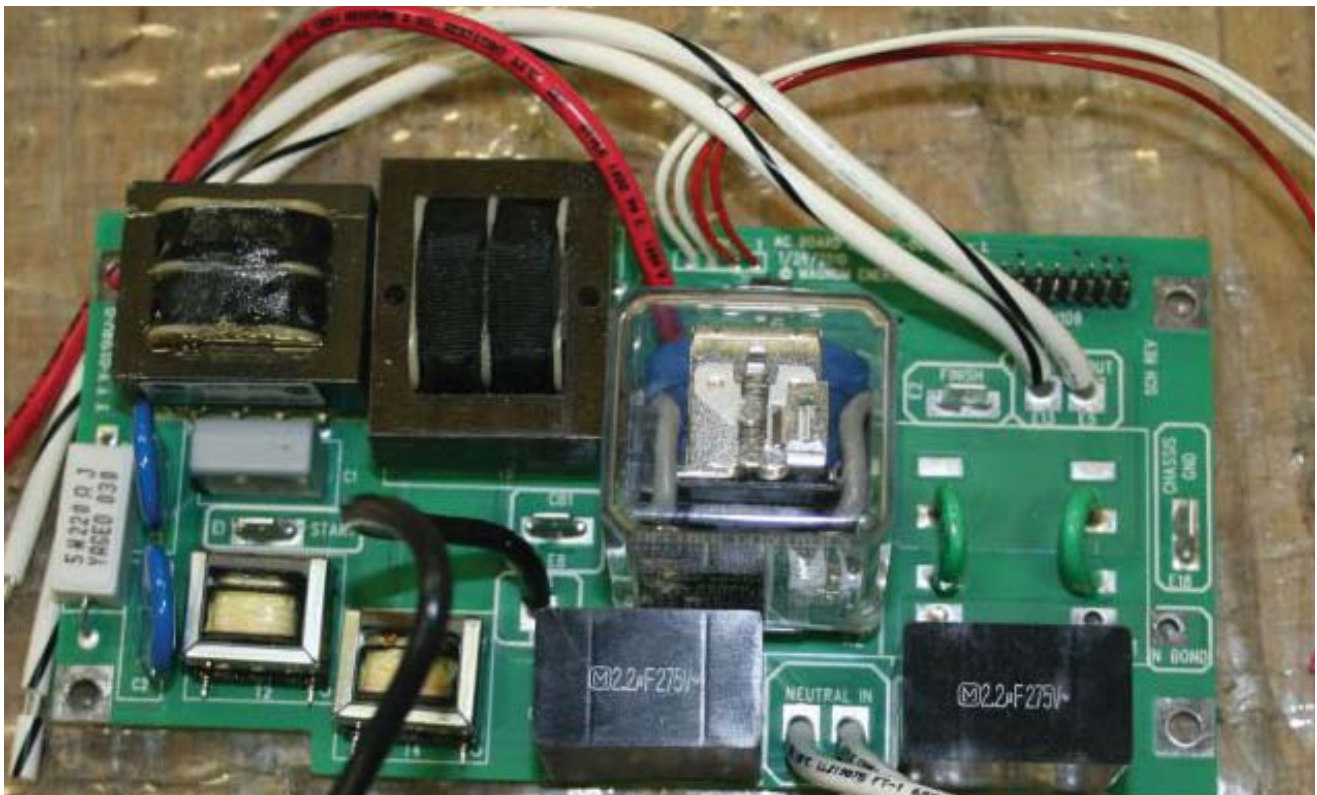


Figure 12, RD Series AC Board (TACB-RD)



Figure 13, RD-E Series AC Board (TACB-RD-E)

6.0 Service and Warranty Information

Sensata Technologies warrants this part to be free from defects in material and workmanship that result in product failure during normal usage, according to the following terms and conditions:

1. The limited warranty on this AC board continues for the remaining portion of the original warranty period, or for 90 days from the date of the return shipment to the original purchaser—whichever is greater.
2. This limited warranty is voided if:
 - the product has been modified without authorization
 - the product has been damaged from abuse, neglect, accident, high voltage or corrosion
 - the product was not installed/operated according to instructions

6.1 How to Receive Warranty Service

If your product requires warranty service, contact Sensata at:

- Telephone: 425-353-8833, or
- Email: MagnumWarranty@Sensata.com

If returning your product directly to Sensata, you must:

1. Return the unit in the original, or an equivalent, shipping container.
2. Receive a Return Materials Authorization (RMA) number from Sensata prior to the return of the product for service.
3. Place RMA numbers clearly on the shipping container or the packing slip.

When sending your product for service, please ensure it is properly packaged. **Damage due to inadequate packaging is not covered under warranty.** We recommend sending the product by traceable and insured service.

**BEFORE RETURNING ANY UNIT,
A RETURN MATERIAL AUTHORIZATION (RMA) NUMBER IS REQUIRED**