

## INSTALLATION INSTRUCTIONS

Original Issue Date: 4/08

Model: 8.5/12/17/18RES Generator Sets with the ADC-RES Controller

Market: Residential/Commercial

Subject: Run/Common Fault Relay Kit GM53102-KP1, GM53102-KP2

### Introduction

Run/common fault relay kits GM53102-KP1 and GM53102-KP2 apply only to generator sets equipped with the ADC-RES controller. The controller's user interface is shown in Figure 1.

**Note:** Do not use this kit with the ADC 2100 controller.

The run/common fault relay kit provides two optional relays to control customer-provided equipment:

- Common fault relay
- Auxiliary run relay

The common fault relay is energized on a fault. The auxiliary run relay is energized when the generator set is running. Connect customer-provided equipment to each relay's normally open or normally closed contacts depending on the application. See the relay contact ratings in Figure 8. Use 14 AWG maximum wire for customer connections; obtain locally as required for the application.

Read the entire installation procedure and compare the kit parts with the parts list before beginning installation. Perform the steps in the order shown.

See Figure 2 for GM53102-KP1 relay board mounting location. See Figure 3 for GM53102-KP2 relay board mounting location.

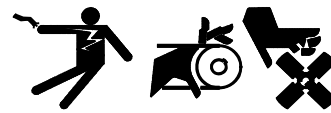


**Figure 1** ADC-RES Controller Identification

### Safety Precautions

Observe the following safety precautions while installing the kit.

#### ⚠ WARNING



**Accidental starting.**  
**Can cause severe injury or death.**

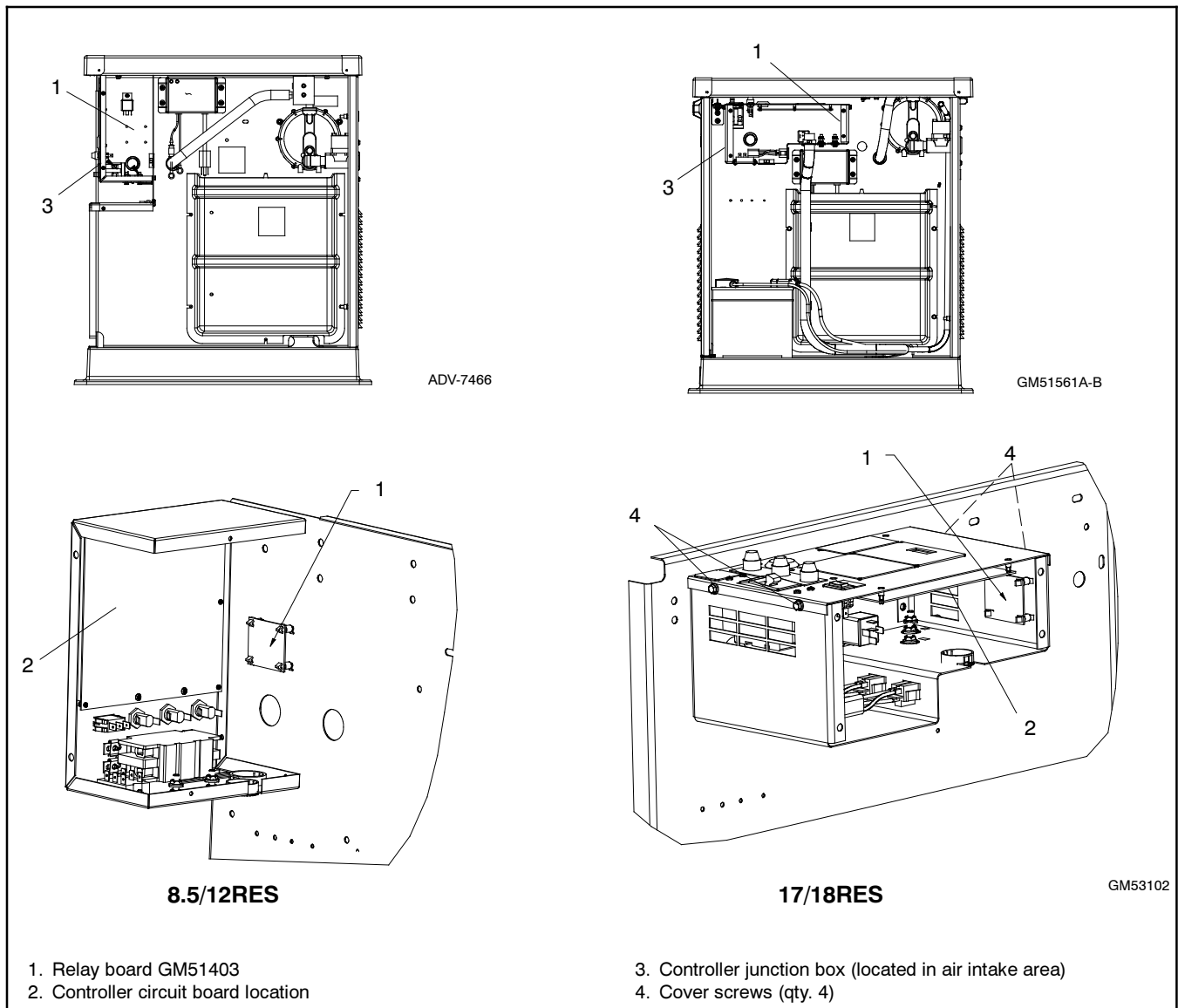
Disconnect the battery cables before working on the generator set. Remove the negative (-) lead first when disconnecting the battery. Reconnect the negative (-) lead last when reconnecting the battery.

**Disabling the generator set. Accidental starting can cause severe injury or death.** Before working on the generator set or connected equipment, disable the generator set as follows: (1) Move the generator set master switch to the OFF position. (2) Disconnect the power to the battery charger. (3) Remove the battery cables, negative (-) lead first. Reconnect the negative (-) lead last when reconnecting the battery. Follow these precautions to prevent starting of the generator set by an automatic transfer switch, remote start/stop switch, or engine start command from a remote computer.

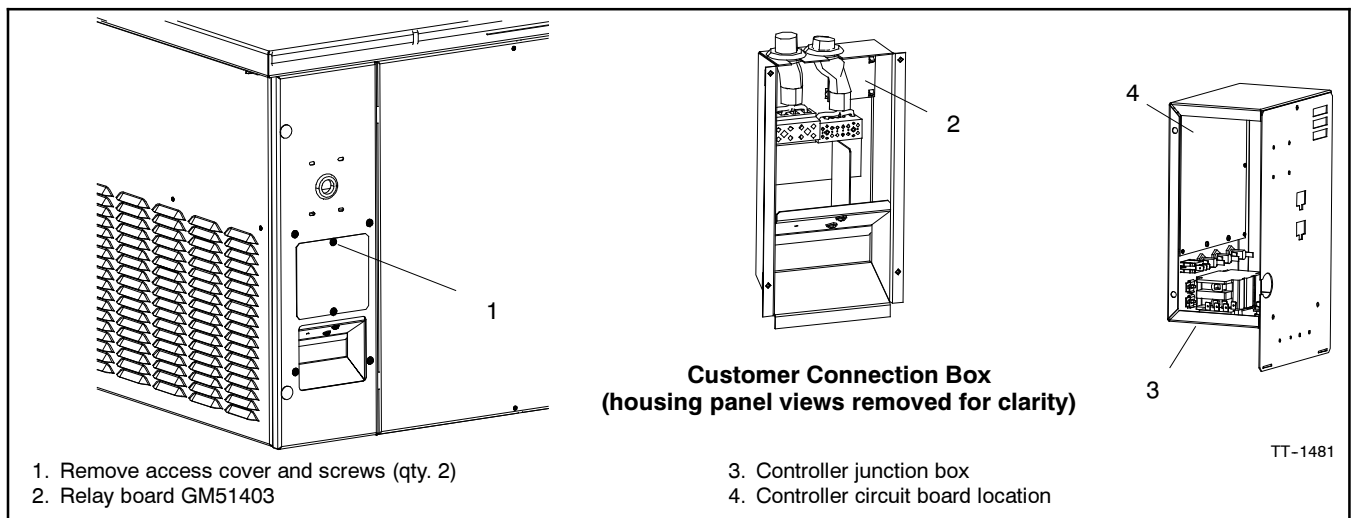
### Parts List

#### Run/Common Fault Relay

Kit: GM53102-KP1		
Qty.	Description	Part Number
4	Standoff, circuit board	360459
1	PCB Assy, Relay Interface Brd	GM51403
1	Harness, Wiring Relay Board	GM52936
Kit: GM53102-KP2		
Qty.	Description	Part Number
4	Standoff, circuit board	360459
1	PCB Assy, Relay Interface Brd	GM51403
1	Harness, Wiring Relay Board	GM84967



**Figure 2** GM53102-KP1 Relay Board Location (inside controller junction box)

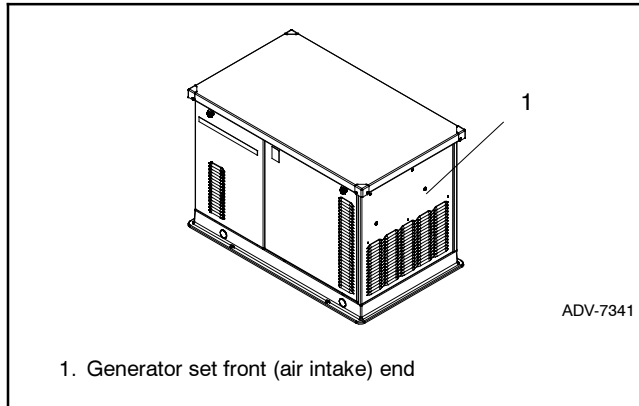


**Figure 3** GM53102-KP2 Relay Board Location (inside customer connection box)

## Installation Procedure

Install the relay board during generator set installation while the front end panel is removed for generator set connection, or carefully remove the top panel of the controller junction box as described in these instructions.

Kit GM53102-KP2: Remove the cover from the electrical connection access area.



**Figure 4** Front end Panel Location

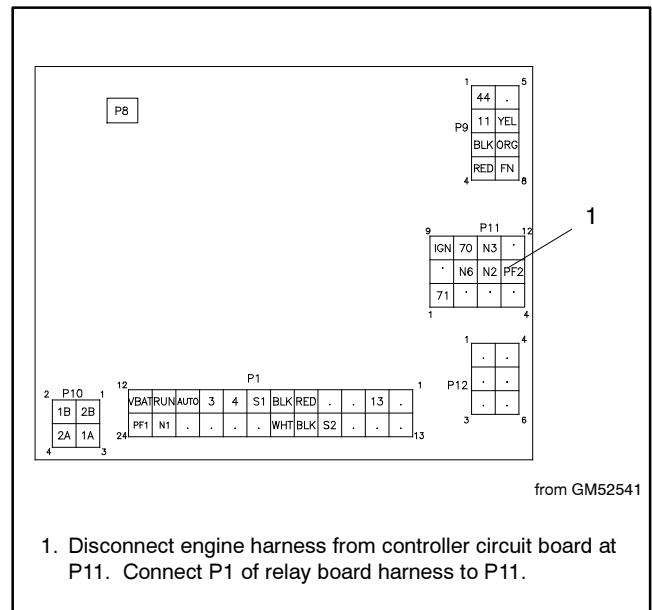
1. Place the generator set master switch in the OFF position.
2. Disconnect the power to the battery charger, if equipped.
3. Disconnect the generator set engine starting battery(ies), negative (-) lead first.
4. This step applies to 17 kW models. This step is not required if the front end panel is removed.

Remove the four screws securing the top panel of the controller junction box and *carefully* lift the panel. Note connections to the panel and disconnect as necessary to access the inside of the junction box.

**Note:** Be careful of the leads and harness connected to the controller panel.

5. See Figure 2 or Figure 3 for the relay board location. If the mounting standoffs are not already installed, insert four standoffs 360459 (provided) into the four holes in the box.
6. Press relay board GM51403 onto the four (4) standoffs inside the box. See Figure 2 or Figure 3.
7. Disconnect the engine harness from the control board at P11. See Figure 2 or Figure 3 for the control board location inside the junction box. See Figure 5 for P11 connector identification.

8. Connect P1 of the relay board harness provided to P11 on the control board. See Figure 5 and Figure 9.
9. Connect P2 of the relay board harness to the engine harness connector that was disconnected in the previous step. See Figure 9.
10. Kit GM53102-KP2: Route the P3 connector end of the relay board harness through one of the grommets on the top of the customer connection box. Tuck the harness leads into existing harness conduit for protection.
11. Connect three-pin connector P3 of the relay board harness to P14 on relay board GM51403. See Figure 6 and Figure 9.



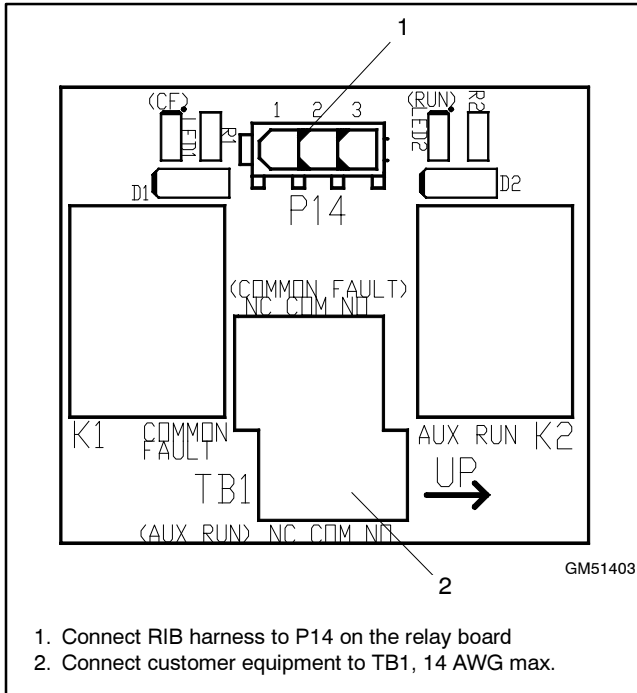
**Figure 5** Connection to Controller Circuit Board

12. Connect customer equipment to TB1 on relay board GM51403, following the terminal markings on the board. Use size 14 AWG maximum wire for connections to TB1. See Figure 6, Figure 7 and Figure 8.

The common fault relay is energized on a fault. The auxiliary run relay is energized when the generator set is running. Connect to each relay's normally open or normally closed contacts as required for the application.

13. Reconnect any leads that were disconnected from the controller in step 4 and replace the top panel, if removed.
14. Kit GM53102-KP2: Replace the electrical connection access cover.

15. Check that the generator set master switch is in the OFF position.
16. Reconnect the generator set engine starting battery, negative (-) lead last.
17. Reconnect power to the battery charger, if equipped.



**Figure 6** Relay Board GM51403

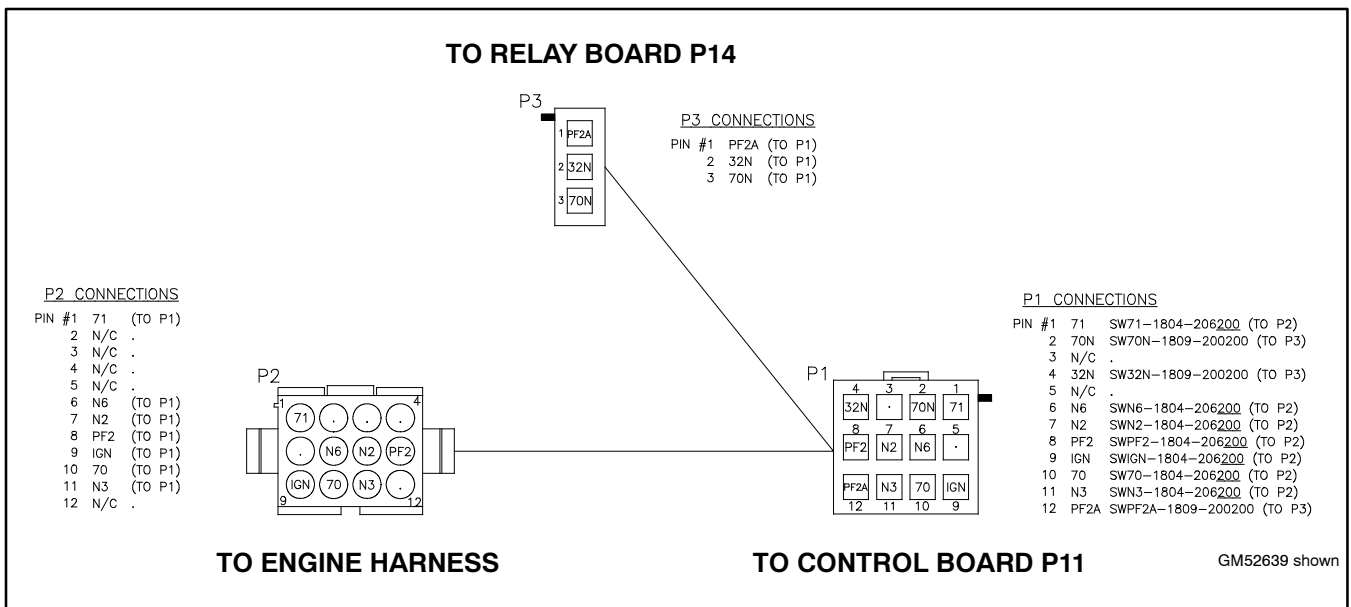
Terminal Label	Description
COMMON FAULT NC	Common fault relay normally closed contact. Opens on a fault.
COMMON FAULT COM	Common fault relay common
COMMON FAULT NO	Common fault relay normally open contact. Closes on a fault.
AUX RUN NC	Auxiliary run relay normally closed contact. Open when generator set is running.
AUX RUN COM	Auxiliary run relay common
AUX RUN NO	Auxiliary run relay normally open contact. Closed when generator set is running.

**Note:** Use maximum 14 AWG wire for TB1 connections.

**Figure 7** TB1 Connections

Relay Contact Ratings	
Contact Ratings	10 A @ 120 VAC 10 A @ 28 VDC
Maximum Operating Voltage	250 VAC/60 VDC
Maximum Switching Capacity	440 VA/75 W

**Figure 8** Relay Contact Ratings



**Figure 9** Relay Board Harness