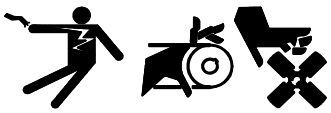
# INSTALLATION INSTRUCTIONS

Original Issue Date: **4/99**
Model: **8.5/11RMY and 17/22RY**
Market: **Residential/Commercial**
Subject: **Common Fault Relay Kit PA-358374**

The common fault relay kit allows remote monitoring of the standby system by using one set of contacts to send a contact closure signal to customer-provided warning devices if a fault condition occurs. Any controller fault (from controller TB1 terminal strip) can be connected to the common fault relay kit. Lamps, audible alarms, or other devices may be connected to the relay contacts.

When a generator fault occurs, the common fault relay energizes. The installer has the option of selecting normally open or normally closed contacts from the relay, depending upon application requirements. 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.

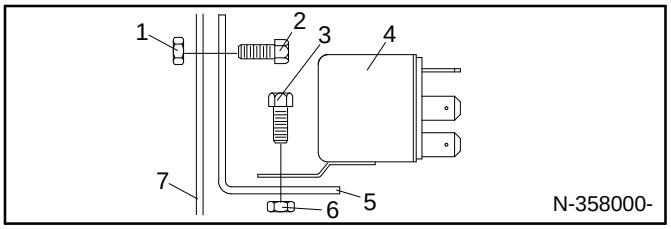
**Disabling the generator set. Accidental starting can cause severe injury or death.** Before working on the generator set or connected equipment, disable the generator set as follows: (1) Move the generator set master switch to the OFF position. (2) Disconnect the power to the battery charger. (3) Remove 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.

# Installation

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. **8.5/11RMY:** Remove the generator set housing roof to gain access to the controller.

   **17/22RY:** Remove the four junction box cover screws and remove the junction box cover.
5. Connect the fault relay wiring harness (358375) to the common fault relay (259391). See the wiring diagram in Figure 3.
6. Connect customer-supplied leads for the warning devices to the common fault relay NO or NC and C contacts with 1/4 in. female fasteners. Devices that are to be activated whenever the generator set is running, and no fault is present are normally connected to the relay normally closed contacts. Devices that are to be activated whenever the generator set has stopped (fault shutdown) are usually wired to the relay normally open contacts.
7. **8.5/11RMY:** Secure the common fault relay to the controller using a 10-32 x 0.5 in. round head machine screw (X-50-1) and a 10-32 whiz lock nut (X-6210-1). See Figure 2 for the relay mounting location.

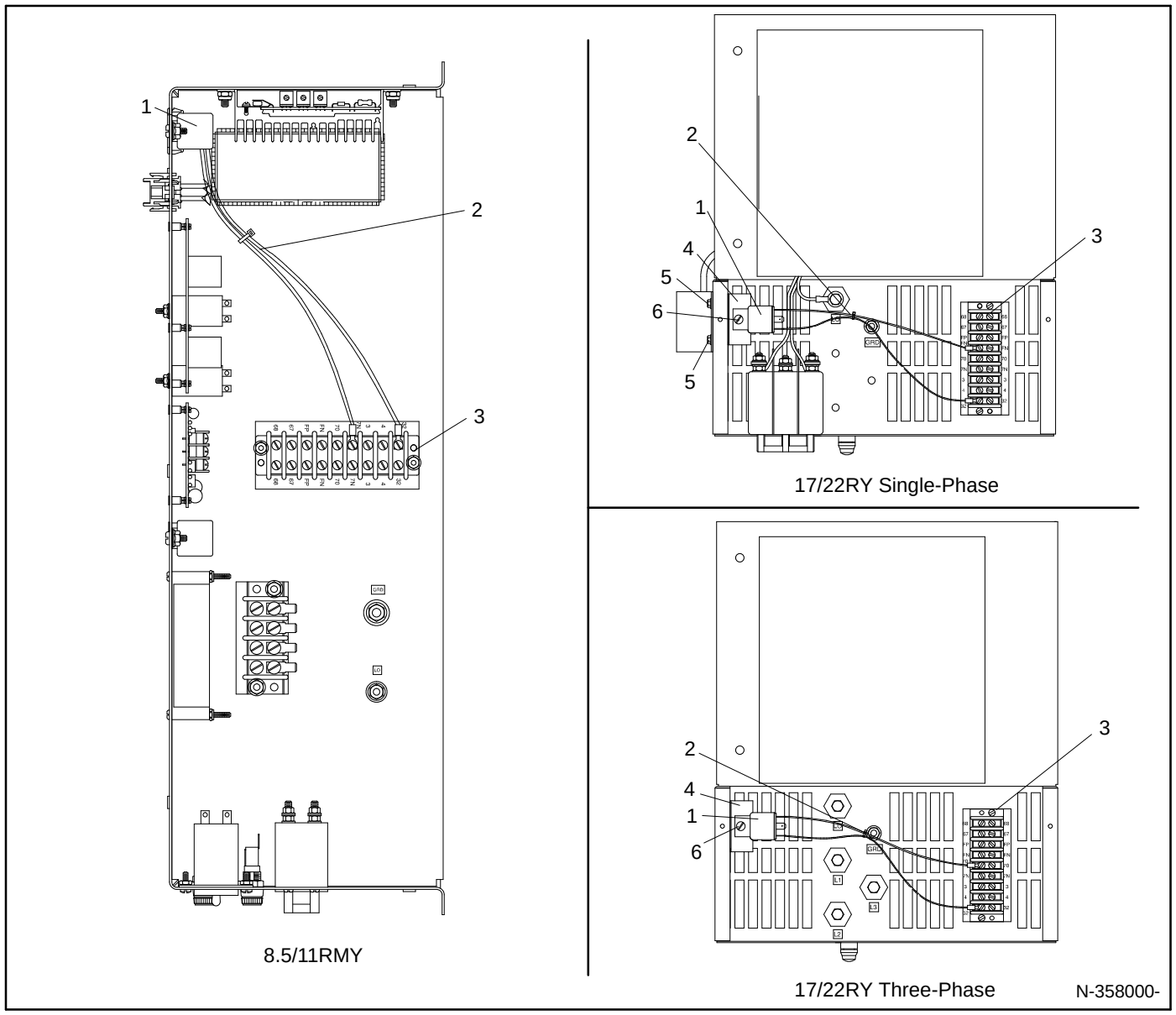
   **17/22RY:** Secure the common fault relay (259391) to the common fault relay bracket (358376) with one 10-32 x 0.5 in. round head machine screw (X-50-1) and one 10-32 nut (X-6210-1). See Figure 1. Secure the common fault relay and bracket to the generator set junction box with two 10-24 x 0.5 in. round head machine screws (X-50-15) and two 10-24 nuts (X-6210-5). See Figure 2 for the relay mounting location.




1. Whiz lock nut, 10-24 (X-6210-5)
2. Round head machine screw, 10-24 x 0.5 in. (X-50-15)
3. Round head machine screw, 10-32 x 0.5 in. (X-50-1)
4. Relay (259391)
5. Common fault relay bracket (358376)
6. Whiz lock nut, 10-32 (X-6210-1)
7. Controller

**Figure 1. Relay Mounting**

8. Connect the spade terminal ends of the fault relay wiring harness to the interconnect terminal block (TB1) inside the controller or junction box. See Figure 2 for the location of TB1 and Figure 3 for the terminal connections.
9. Check that the generator master switch is in the OFF position.
10. Reconnect the generator set engine starting battery, negative (–) lead last.
11. Reconnect the power to the battery charger, if equipped.




1. Relay (259391)
2. Fault relay wiring harness (358375)
3. Interconnect terminal block (TB1)
4. Fault relay bracket (358376)
5. 10-24 x 0.5 in. (X-50-15) round head machine screw and 10-24 (X-6210-5) whiz lock nut
6. 10-32 x 0.5 in. (X-50-1) round head machine screw and 10-32 (X-6210-1) whiz lock nut

**Figure 2. Common Fault Relay Installation and Connections– Controller/Junction Box Top View**

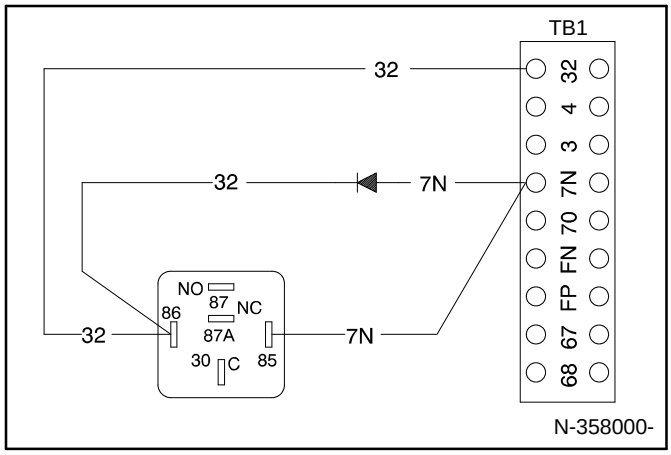



**Figure 3. Wiring Diagram**

# Testing

Test the common fault relay operation by connecting an ohmmeter across terminals NO and C on the relay. See Figure 4.

1. Disconnect the power source to terminals NO and C, if connected.
2. Connect an ohmmeter from terminals C to NO. Observe no continuity, high ohms. See Figure 4.

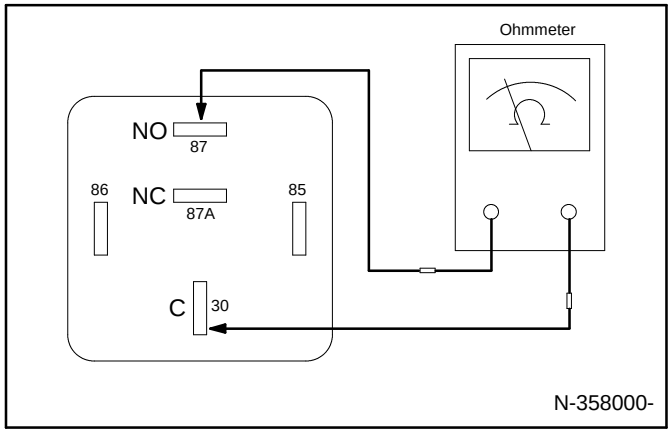



**Figure 4. Common Fault Relay Test Ohmmmeter Connections**

3. Start the generator set and ground any connected engine shutdown switch/sensor. See Figure 5. During generator set shutdown, caused by the grounding procedure, the relay contacts should close and a continuity reading (zero ohms) should be obtained on the ohmmeter.

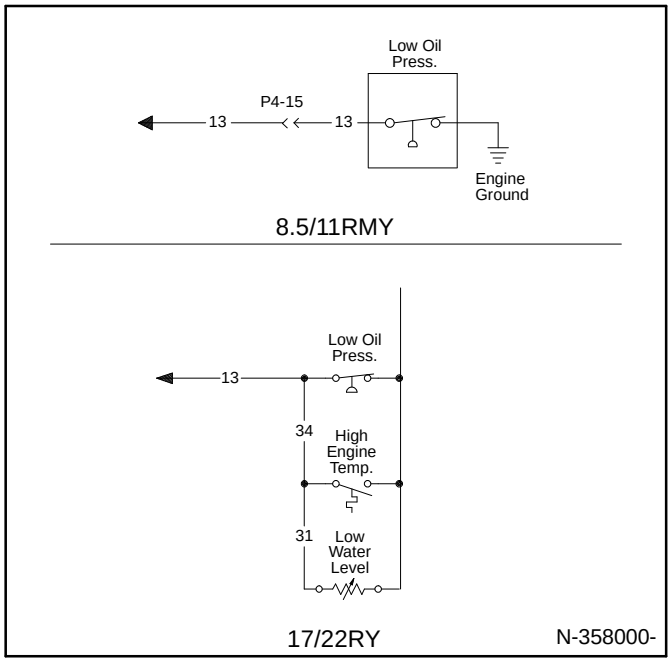



**Figure 5. Generator Set Fault Shutdown Switches and Sensors**

4. Place the generator set master switch in the OFF position.
5. **8.5/11RMY:** Reinstall the generator set housing roof.

   **17/22RY:** Reinstall the junction box cover. Secure the junction box cover with the four screws removed in step 4.

**Common Fault Relay Kit**

| Parts List | | |
|---|---|---|
| **Kit: PA-358374** | | |
| **Qty.** | **Description** | **Part Number** |
| 1 | Screw, r.h.m., 10-32 x 1 in. | X-50-1 |
| 2 | Screw, r.h.m., 10-24 x 1 in. | X-50-15 |
| 1 | Nut | X-6210-1 |
| 2 | Nut | X-6210-5 |
| 1 | Relay | 259391 |
| 1 | Harness, fault relay | 358375 |
| 1 | Bracket, fault relay | 358376 |