

**SERVICE BULLETIN**

Original Issue Date: **5/07**  
 Model: **5-2800 kW**  
 Market: **All Generator Sets**  
 Subject: **12/24 V Relay Substitution**

**Introduction**

Typical applications are K5 (run) relay, K6, K7, or K11 (ECM power/control) relays, and K20 (crank/starter) relay but may have additional applications.

If relay replacement is necessary, replace the following 12 V and 24 V relays with a new relay on the generator set range listed above. The new relay contains an integrated diode, eliminating the need for the external diode in the wiring harness.

Compare the relay part numbers on the generator set to Figure 1 to determine which relay coil voltage to install.

Old Relay Part No.	Voltage	New Relay Part No.
259391	12 V	GM49746
GM28787		
272684	24 V	GM49747

**Figure 1** Relay Coil Voltages

**If the existing relay does not have the external diode connected to the terminals, the new relay is a direct replacement.**

To replace an old-style relay with an external diode, order the new relay with an internal diode and modify the wiring harness. Remove and replace the relay as instructed in this bulletin. Read the entire installation procedure and perform steps in the order shown.

**Required Tools and Supplies**

- Wrenches or sockets
- Phillips® screwdriver
- Wire cutter and crimper
- 1/4 in. push-on terminals (qty. 2), 18-22 gauge
- 1/4 in. push-on terminals (qty. 2), 14-16 gauge

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**Safety Precautions**

Observe the following safety precautions while performing the starter relay replacement procedure.

**⚠ WARNING**

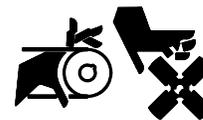


**Accidental starting.  
 Can cause severe injury or death.**

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.

**⚠ WARNING**



**Rotating parts.  
 Can cause severe injury or death.**

Operate the generator set only when all guards, screens, and covers are in place.

**Servicing the generator set when it is operating. Exposed moving parts can cause severe injury or death.** Keep hands, feet, hair, clothing, and test leads away from the belts and pulleys when the generator set is running. Replace guards, screens, and covers before operating the generator set.

## Installation Procedure

### 1. Remove the generator set from service.

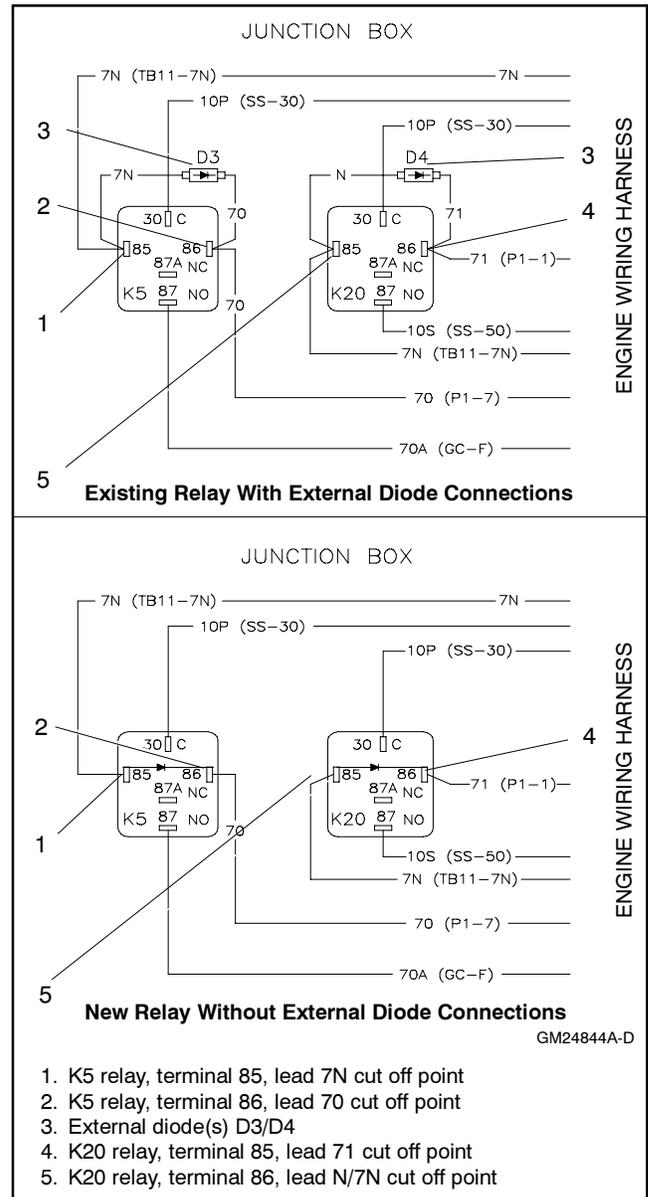
- 1.1 Place the generator set master switch in the OFF position.
- 1.2 Disconnect the power to the battery charger if equipped.
- 1.3 Disconnect the generator set engine starting battery(ies), negative (-) lead first.

### 2. Remove the existing relay with external diode.

- 2.1 Locate and remove access panel to the junction box.
- 2.2 Locate and remove the relay and hardware located in the junction box.
- 2.3 Locate relay terminal 85 as shown in Figure 2.
  - Remove the female push-on terminal from the old relay.
  - Cut off the terminal.
  - Remove the external diode lead.
  - Strip and crimp on a new push-on terminal to the remaining wire.
  - Reconnect to new relay terminal 85.
- 2.4 Locate relay terminal 86 as shown in Figure 2.
  - Remove the female push-on terminal from the old relay.
  - Cut off the terminal.
  - Remove the external diode lead.
  - Strip and crimp on a new push-on terminal to the remaining wire.
  - Reconnect to new relay terminal 86.

### 3. Install the new relay.

- 3.1 Use the existing hardware to mount new relay in the same location.
  - 3.2 Install the access panel to the junction box.
  - 3.3 Discard the old relay, diode, and unused relay terminals/wires.
4. **Restore the generator set to service.**
  - 4.1 Check that the generator set master switch is in the OFF position.
  - 4.2 Connect power to the battery charger, if equipped.
  - 4.3 Reconnect the generator set engine starting battery, negative (-) lead last.



**Figure 2** Wiring Harness Connections, Typical

- 3.2 Install the access panel to the junction box.
- 3.3 Discard the old relay, diode, and unused relay terminals/wires.
4. **Restore the generator set to service.**
  - 4.1 Check that the generator set master switch is in the OFF position.
  - 4.2 Connect power to the battery charger, if equipped.
  - 4.3 Reconnect the generator set engine starting battery, negative (-) lead last.