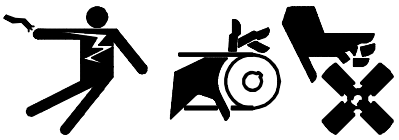
INSTALLATION INSTRUCTIONS

Common Fault Relay Kits PA-225196 and PA-256882 For 5-18 kW Standby Generator Sets

The common fault relay kit allows remote monitoring of the standby system by using one set of contacts to trigger 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 one of the generator functions selected by the customer. Accessories are typically connected to signal an overspeed, emergency stop, high engine temperature, low oil pressure, or auxiliary condition.

When the selected generator fault occurs, the common fault relay (K1) is energized. The customer has the option of selecting normally open or normally closed contacts from the relay, depending upon application requirements. 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.

⚠ WARNING



Accidental starting.
Can cause severe injury or death.
Disconnect battery cables before working on generator set (negative lead first and reconnect it last).

Accidental starting can cause severe injury or death. Turn generator master switch to OFF position, disconnect power to battery charger, and remove battery cables (remove negative lead first and reconnect it last) to disable generator set before working on any equipment connected to generator. The generator set can be started by automatic transfer switch or remote start/stop switch unless these precautions are followed.

INSTALLATION

1. Move generator master switch to OFF position.

2. Disconnect battery, negative lead first.

3. Remove microprocessor controller cover.

4. Install the common fault relay circuit board assembly (C-294301) on mounting bracket (225195) with four spacers (X-712-9), plain washers (X-25-48), and 8-32 whiz nuts (X-6210-4) as shown in Figure 1.

5. Install diode circuit board assembly (A-256884) on mounting bracket with three spacers (X-712-9), plain washers (X-25-48), and 8-32 whiz nuts (X-6210-4).

   NOTE

   If the microprocessor controller already has a single-relay dry contact kit installed, install common fault relay circuit board assembly and diode circuit board assembly to open positions of existing mounting bracket.

6. Install mounting bracket (225195) to existing holes in controller housing base plate with 10-24 x 0.375-in. hex screws (X-97-3), plain washers (X-25-36), and 10-24 whiz nuts (X-6210-5).

   NOTE

   If additional clearance is required to install mounting bracket washers and nuts, remove microprocessor controller mounting nuts and washers and lift controller.

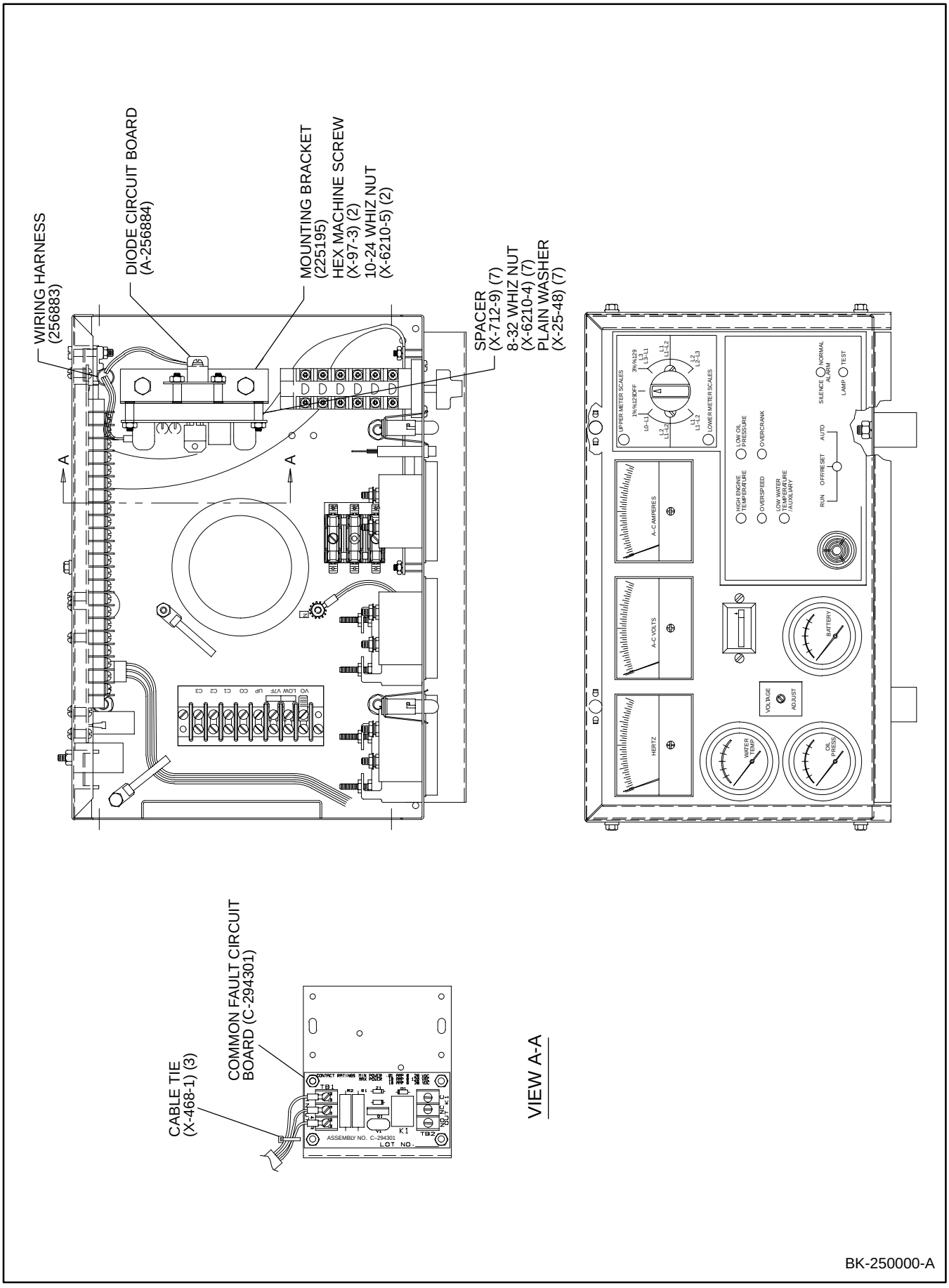


Figure 1. Kit Installation

7. Connect the common fault relay kit with wiring harness (256883) according to the wiring diagram shown in Figure 3. Power to operate the K1 relay should be connected between terminals 2 (ground) and 42A (battery voltage) of the controller (or connection kit) and the relay terminal strip.

   NOTE

   The customer can select one of several functions. Typical functions are provided on the wiring diagram.

8. Customer-provided accessories require their own electrical source and must not exceed the relay contact ratings given below. If supply voltage is to be 12 volts DC, make connections to battery positive at starter solenoid and to battery negative at engine ground. Do not use terminals 42A and N of controller (or connection kit) to supply voltage to relay contacts. These must be separate leads direct from battery. Leads should be sized according to appropriate electrical codes.

9. Use cable ties (X-468-1) to bundle and secure wiring harness.

10. Reinstall the microprocessor controller cover.

11. Reconnect battery cables, negative lead last.

RELAY CONTACT RATING

Maximum Switching Voltage	120 volts AC
Maximum Switching Current	10 amps
Minimum Switching Power	10 milliamps at 28 volts DC (or equivalent)

TESTING

After installation, common fault relay operation may be tested by connecting an ohmmeter across terminals N.O. and C on relay terminal strip (see Figure 2). Disconnect power source (if connected) to terminals N.O. and C prior to performing ohmmeter test. Start the generator set and ground any connected shutdown switch on controller TB1 terminal strip. During generator set shutdown (caused by grounding procedure), the relay contacts should close and a continuity reading should be obtained. When test is complete, place generator set master switch in OFF position.

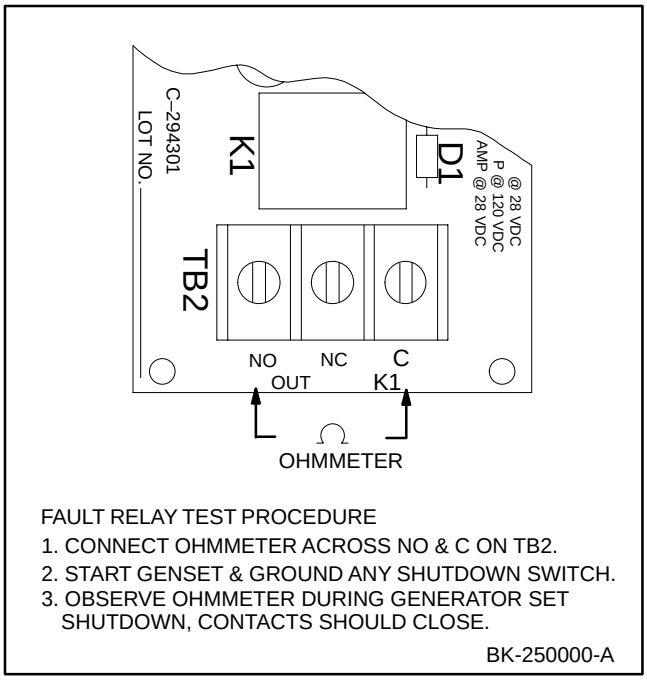


Figure 2. Common Fault Relay Test Procedure

Parts List

Kits PA-225196 and PA-256882

Qty.	Description	Part Number
1	Circuit Board Assembly, diode	A-256884
1	Circuit Board Assembly, common fault relay	C-294301
2	Washer, 0.219 x 0.500 x 0.049 in. plain	X-25-36
7	Washer, 0.188 x 0.438 x 0.049 in. plain	X-25-48
3	Tie, cable	X-468-1
7	Nut, 8-32 whiz	X-6210-4
2	Nut, 10-24 whiz	X-6210-5
7	Spacer	X-712-9
2	Screw, 10-24 x 0.375 in. hex	X-97-3
1	Bracket, mounting	225195
1	Harness, wiring	256883

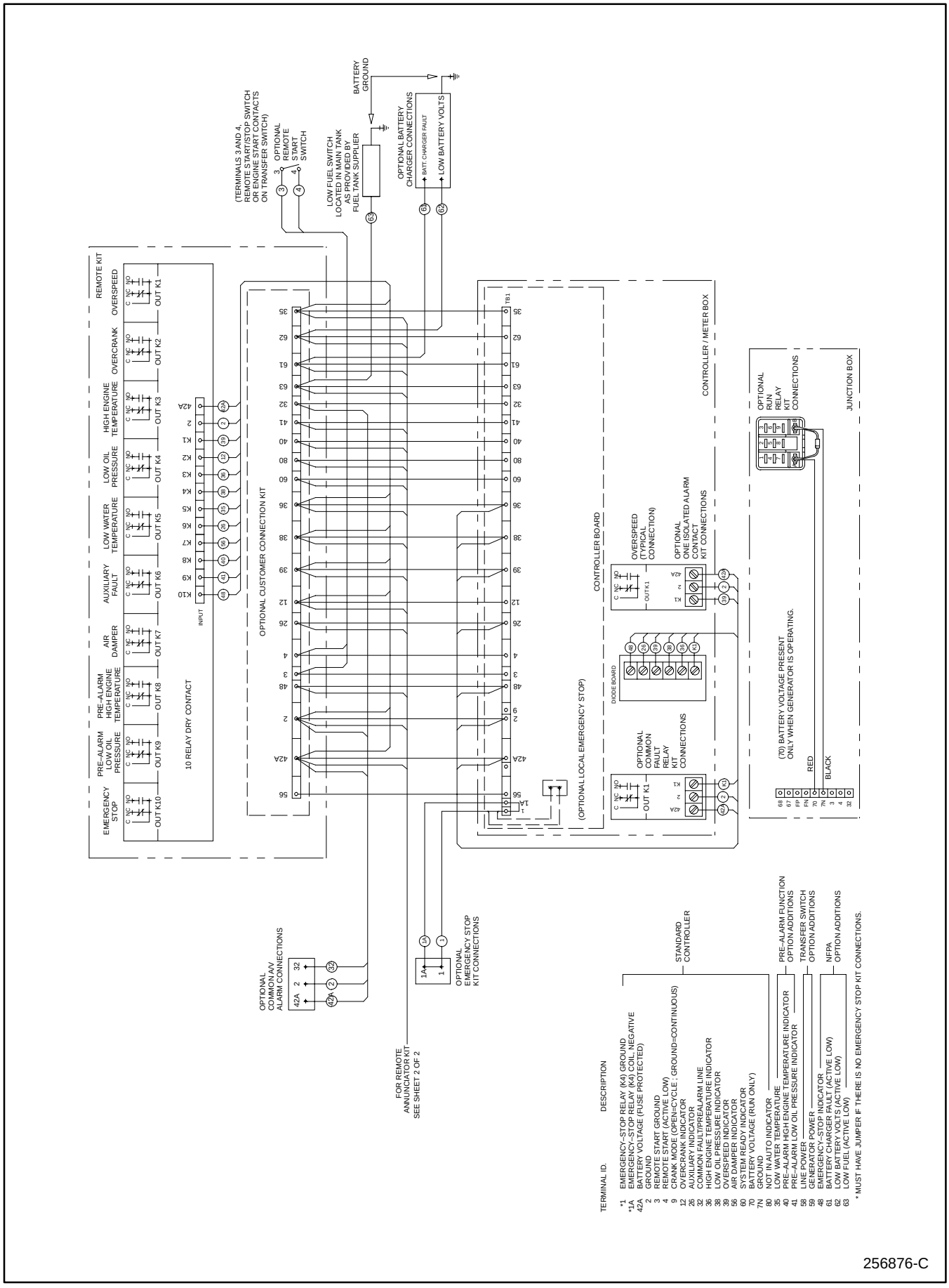


Figure 3. Wiring Diagram