INSTALLATION INSTRUCTIONS

Original Issue Date: **11/95**
Model: **350-1600 kW**
Market: **Industrial**
Subject: **Twenty-Relay Dry Contact Kits PA-342415, PA-342415-SD**

The twenty-relay dry contact kit activates warning devices and other customer-provided accessories to allow monitoring of the industrial system from a location remote from the generator set. Lamps, audible alarms, and other devices may be connected to twenty generator functions selected by the customer. Accessories are typically connected to signal engine overspeed, overcrank, high engine temperature, low oil pressure, and low coolant temperature conditions. Use contact kit as an alternate or in conjunction with the remote annunciator panel.

NOTE

A maximum of three dry contact kit relays may be connected to each microprocessor controller terminal block output.

Customer-provided accessories require their own electrical power source and must not exceed the relay contact rating given below. Make connections directly to battery positive at starter solenoid, and battery negative at engine ground if supply voltage is 12 volts DC. Do not use terminals 42A and N of dry contact kit terminal strip to supply voltage to relay contacts. Size leads according to electrical codes.

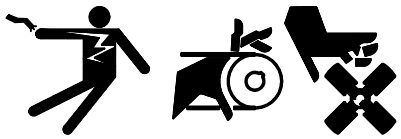
Relay Contact Ratings

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

NOTE

Observe applicable local, state, and national electrical codes when installing the alarm contact kit and related accessories.

⚠ 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 set 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 set. The generator set can be started by automatic transfer switch or remote start/stop switch unless these precautions are followed.

Installation

1. Move the generator set master switch to the OFF position. Disconnect generator set engine starting battery, negative (–) lead first.
2. Remove the upper and lower junction box access panels and controller cover. See Figure 1.
3. Position the dry contact assembly enclosure (A-342410) against the lower left side of the junction box (facing controller), as shown in Figure 1.

NOTE

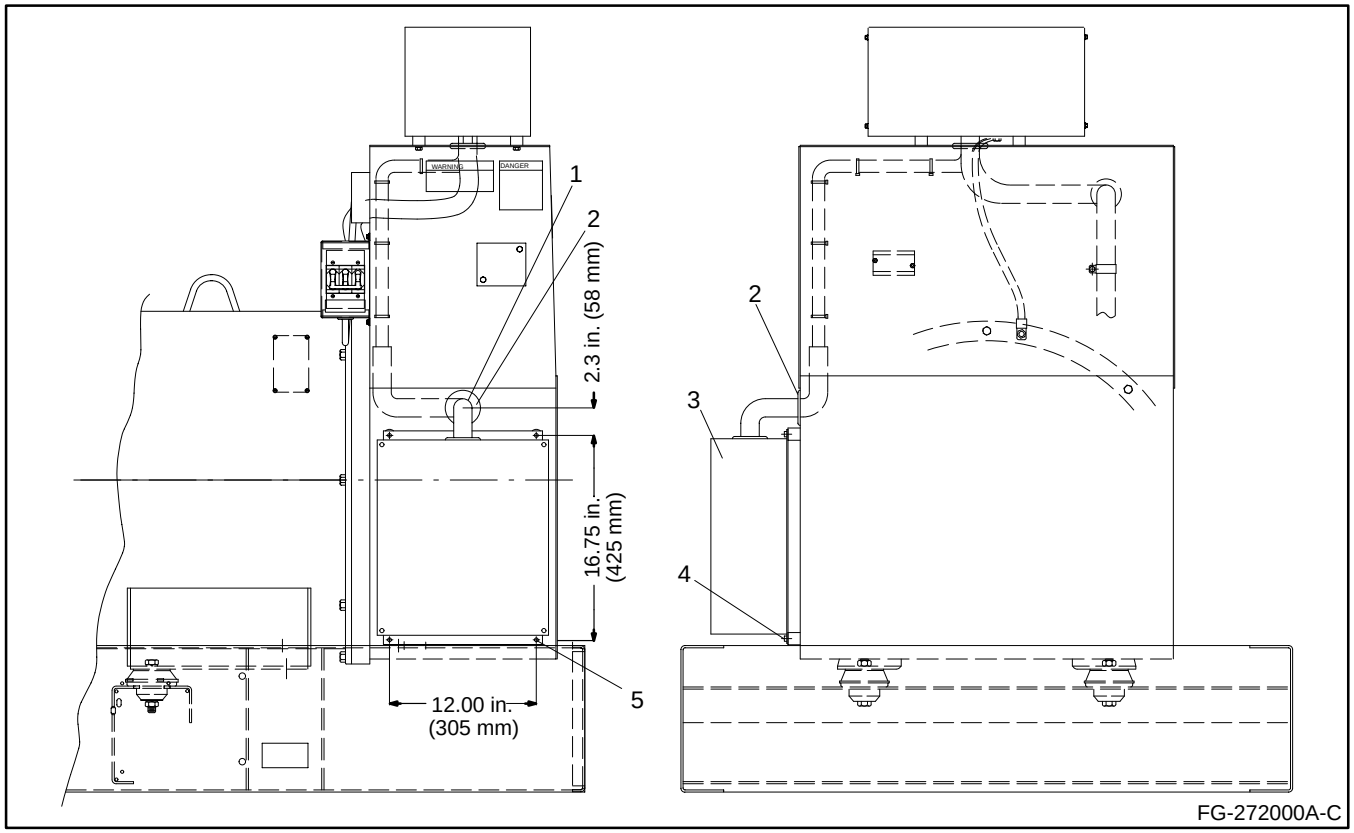
Visually inspect inside the junction box for clearance before drilling mounting holes.

4. Drill four .312 in. (7.92 mm) diameter holes in the junction box using the contact enclosure as a template
5. Drill one 2.5 in. (63.50 mm) diameter hole 2.3 in. (58.42 mm) up from the center of the upper mounting holes of the dry contact assembly enclosure, and centered horizontally between the upper mounting holes. See Figure 1.
6. Install grommet (X-284-10) in 2.5 in. (63.50 mm) hole.
7. Mount contact assembly enclosure to junction box with four 1/4-20 x 0.75 in. r.h.m. screws (X-51-30), bumpers (255443), and whiz nuts (X-6210-2)
8. Insert harness through grommet in junction box and route harness along the junction box to the controller assembly. Secure harness with cable ties (not supplied) as needed.
9. Connect the twenty-relay dry contact kit to controller circuit board with spade terminals (X-285-1) as shown in Figure 2.

   Controller/junction box terminals 2 (ground) and 42A (battery voltage) must be connected to the dry contact kit terminal strip to provide an electrical source to operate the K1-K10 relays.

   Customers can choose up to twenty functions (typical functions are indicated on the wiring diagram). Furnish the customer-provided devices connected to the dry contact kit with an electrical supply adequate to operate the device. Check the electrical requirements of the customer-provided accessories before installation to determine wire gauge size.

   When a generator fault condition occurs, the contact kit relay (K1-K10) tied to that function is energized. Select normally open or normally closed contacts from each relay depending on application requirements.
10. Reinstall the junction box and controller access covers.
11. Reconnect generator set engine starting battery, negative (–) lead last.



1. One 2.5 in. (63.50 mm) diameter hole
2. Grommet (X-284-10)
3. Dry contact assembly (A-342410)
4. Bumpers (255443), screws (X-51-30), and whiz nuts (X-6210-2)
5. Four 0.312 in. (7.92 mm) diameter mounting holes

Figure 1. Twenty-Relay Dry Contact Kit Installation

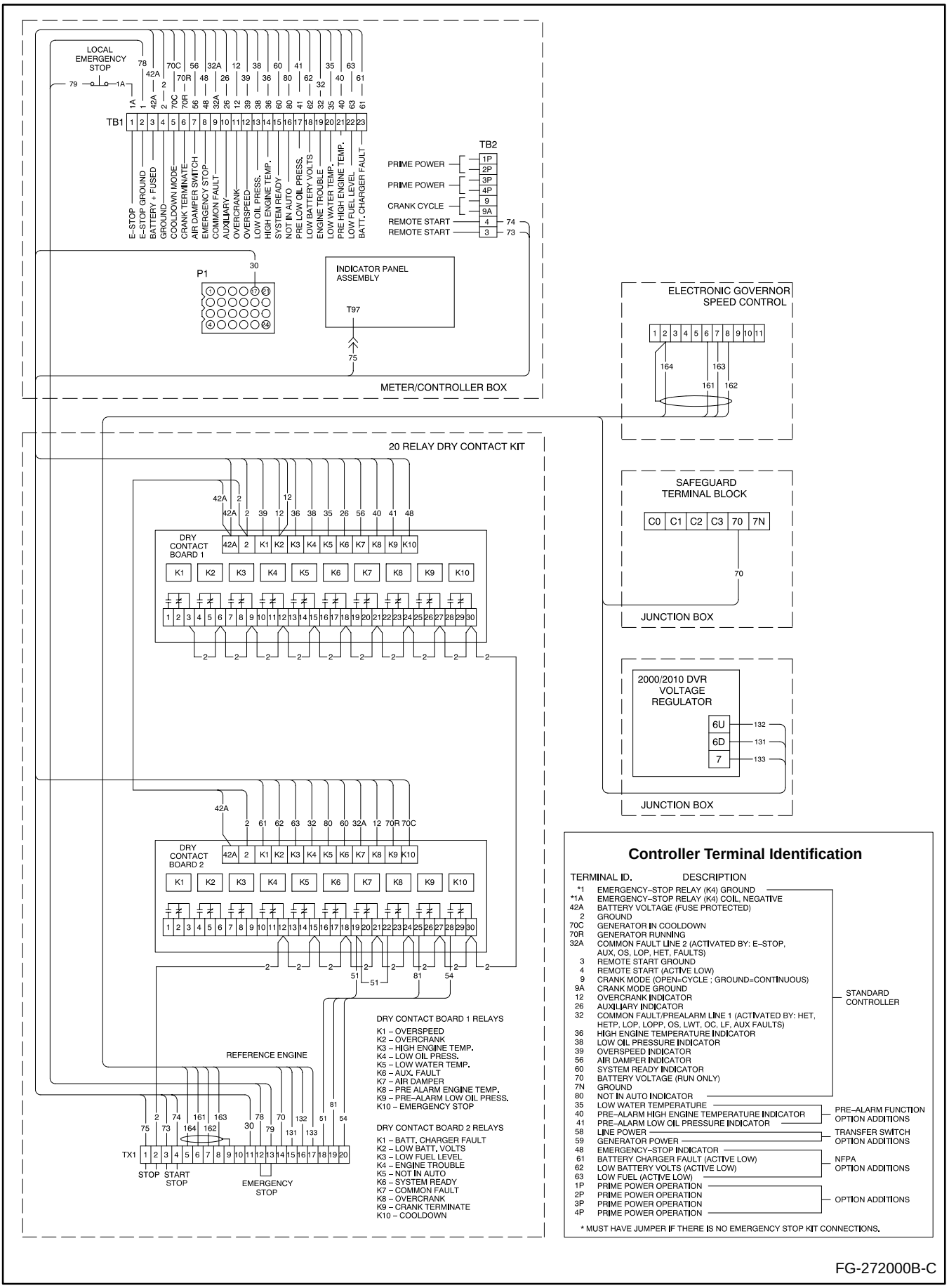


Figure 2. Twenty-Relay Dry Contact Kit Wiring Diagram

Twenty-Relay Dry Contact Kit Parts List		
KITS PA-342415, PA-342415-SD		
Qty.	**Description**	**Part Number**
1	Contact, assembly dry (includes*)	A-342410
2	PCB assembly, 10 relay dry*	D-294303
1	Lead*	LW-1404-1515
14	Lead*	SWO2-1803
1	Lead*	SWO2-1808
1	Lead*	SWO2-1808-2200
1	Lead*	SWO2-18186-2202
1	Lead*	SW12-1824-2222
1	Lead*	SW12-1888-2202
1	Lead*	SW26-1888-2202
1	Lead*	SW30-1898-18302
1	Lead*	SW32-1894-2202
1	Lead*	SW35-1888-2202
1	Lead*	SW36-1888-2202
1	Lead*	SW38-1888-2202
1	Lead*	SW39-1888-2202
1	Lead*	SW40-1888-2202
1	Lead*	SW41-1888-2202
1	Lead*	SW48-1894-2202
1	Lead*	SW51-1804-2222
1	Lead*	SW54-1804-2222
1	Lead*	SW56-1894-2202
1	Lead*	SW60-1894-2202
1	Lead*	SW61-1894-2202
1	Lead*	SW62-1894-2202
1	Lead*	SW63-1894-2202
1	Lead*	SW70-1886-2202
1	Lead*	SW73-1898-2202
1	Lead*	SW74-1898-2202
1	Lead*	SW75-1898-2202
1	Lead*	SW78-1898-2202
1	Lead*	SW79-1898-2202
1	Lead*	SW80-1894-2202
1	Lead*	SW81-1804-2202
1	Lead*	T131-1886-5702
1	Lead*	T132-1886-5702
1	Lead*	T133-1886-5702
1	Lead*	T32A-1898-2202
1	Lead*	T42A-1816-2202
1	Lead*	T42A-1888-2202
1	Lead*	T70C-1898-2202
1	Lead*	T70R-1898-2202
5	Washer, shakeproof*	X-22-12
1	Grommet, 2 1/8 x 2 1/2 in.*	X-284-10
1	Tie, cable*	X-468-7
1	Conduit, convoluted*	X-6003-101
12	Stud, self-clinching*	X-6205-3
12	Nut, hex*	X-70-12
12	Spacer*	X-712-9
4	Mount, controller*	241769
1	Enclosure*	262854
1	Panel*	262855
1	Block, terminal*	273769
1	Strip, marker*	279271
1	Harness, wiring*	279818
1	Grommet, 2 1/8 x 2 1/2 in.	X-284-10
25	Terminal	X-285-1
4	Screw, 1/4-20 x 0.75	X-51-30
4	Bumper, rubber	255443