INSTALLATION INSTRUCTIONS

Single-Relay Dry Contact Kit, PA-256881 For 6-18kW Standby Generators with Microprocessor Controllers

The single-relay dry contact kit provides contact closure to activate warning devices and other customer-provided accessories. This allows monitoring of the standby system from a location remote from the generator set. Any controller fault (from TB1 terminal strip) can be connected to the single 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, overcrank, high engine temperature, low oil pressure, or low water temperature condition. The single-relay dry contact kit is shown in Figure 1.

NOTE

A total of three dry contact relay kits may be connected to a single fault on the microprocessor controller terminal strip.

Customer-provided accessories require their own electrical source and must not exceed the relay contact ratings given below.

If supply voltage to the customer-provided accessories 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 at dry contact kit terminal strip to supply voltage to relay contacts. These must be separate leads directly from battery. Leads should be sized according to appropriate electrical codes.

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)

NOTE

Applicable local, state, and national codes must be followed when installing the dry contact kit and related accessories.

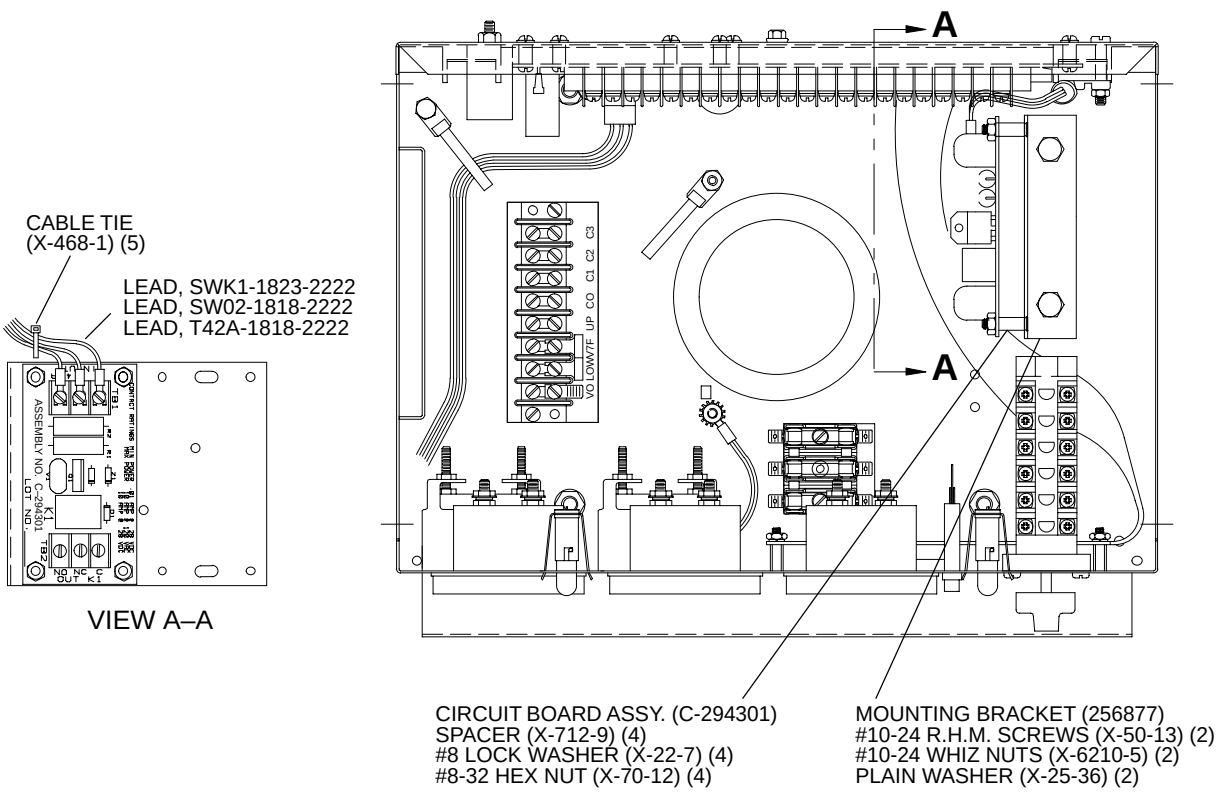
⚠ WARNING

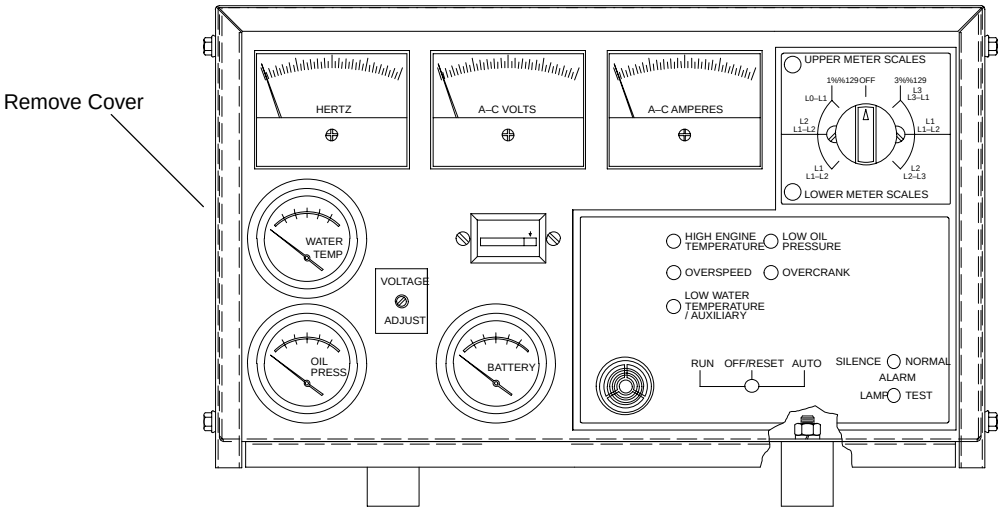
Accidental starting.
Can cause severe injury or death.
Disconnect battery cables before working on generator set (negative lead first and reconnect it last).

Accidental starting can cause severe injury or death. Turn generator 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 single-relay dry contact assembly (C-294301) on mounting bracket with four spacers (X-712-9), #8 lock washers (X-22-7), and #8-32 hex nuts (X-70-12).





BK-250000-A

Figure 1. Single-Contact Dry Relay Kit

NOTE

If the microprocessor controller already has a common fault relay installed, install single-contact relay board to the available position of existing mounting bracket.

5. Install mounting bracket (256877) with two 10-24 x 0.375-in. machine screws (X-50-13), plain washers (X-25-36), and whiz nuts (X-6210-5) as shown.

NOTE

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

6. Connect the single-relay dry contact kit using leads (SWK1-1823-2222, SW02-1818-2222, T42A-1818-2222) according to the wiring diagram shown in Figure 2. Controller terminals 2 (ground) and 42A (battery voltage) must be connected to alarm contact terminal strip to provide an electrical source to operate the K1 relay. The customer can then choose one function (typical functions are indicated on the wiring diagram) to activate the alarm. Customer-provided devices connected to the dry contact kit must be furnished with an electrical supply adequate to operate the device. Check the electrical requirements of customer-provided accessories prior to installation. Use 20-gauge stranded copper wire for distances up to 100 ft. (30.5 m), 14-gauge for up to 500 ft. (152 m), and 10-gauge up to 1000 ft. (305 m) to connect customer-provided accessories to the alarm contact terminal strip.

7. When a generator fault condition occurs, the contact kit relay (K1) tied to that function is energized. The customer has the option of selecting normally open or normally closed contacts from the relay depending upon application requirements. The relay contact closure will respond to the selected microprocessor controller light being activated.

8. Use cable ties (X-468-2) to bundle and secure leads.

9. Reinstall the microprocessor controller cover.

10. Reconnect battery cables, negative lead last.

Parts List

Kit PA-256881

Qty.	Description	Part Number
1	Circuit Board Assembly, single dry relay	C-294301
1	Lead, K1	SWK1-1823-2222
1	Lead, 2	SW02-1818-2222
1	Lead, 42A	T42A-1818-2222
4	Washer, #8 lock, internal tooth	X-22-7
2	Washer, 0.219 x 0.500 x 0.049 in. plain	X-25-36
5	Tie, cable	X-468-2
2	Screw, 10-24 x 0.375 in. R.H.M.	X-50-13
2	Nut, 10-24	X-6210-5
4	Nut, 8-32	X-70-12
4	Spacer	X-712-9
1	Bracket, mounting	256877

CONTROLLER TERMINAL IDENTIFICATION

TERMINAL ID.	DESCRIPTION	
42A	BATTERY VOLTAGE (FUSE PROTECTED)	STANDARD CONTROLLER
2	GROUND	
12	OVERCRANK INDICATOR	
26	AUXILIARY INDICATOR	
32	COMMON FAULT/PRE-ALARM LINE	
36	HIGH ENGINE TEMPERATURE INDICATOR	
38	LOW OIL PRESSURE INDICATOR	
39	OVERSPEED INDICATOR	
56	AIR DAMPER INDICATOR	
60	SYSTEM READY INDICATOR	
80	NOT IN AUTO INDICATOR	
35	LOW WATER TEMPERATURE	PRE-ALARM FUNCTION OPTION ADDITIONS
40	PRE-ALARM HIGH ENGINE TEMPERATURE INDICATOR	
41	PRE-ALARM LOW OIL PRESSURE INDICATOR	
48	EMERGENCY-STOP INDICATOR	NFPA OPTION ADDITIONS
61	BATTERY CHARGER FAULT (ACTIVE LOW)	
62	LOW BATTERY VOLTS (ACTIVE LOW)	
63	LOW FUEL (ACTIVE LOW)	

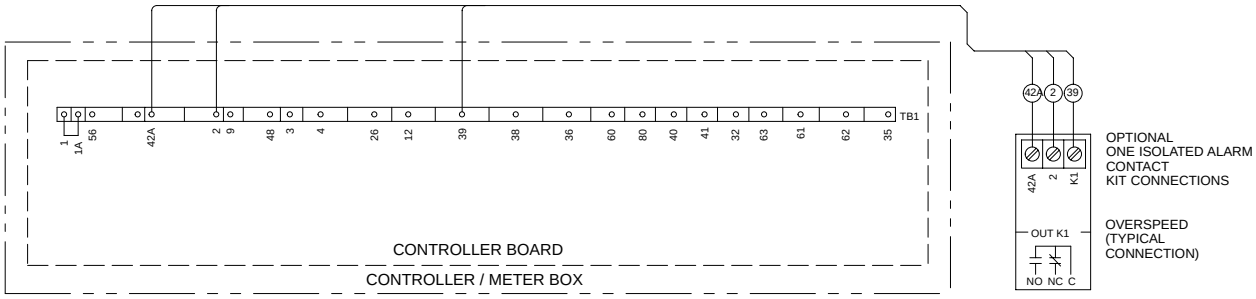


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Figure 2. Wiring Diagram