



## FR Activator Replacement and Testing

**Kit No.**  
**258463**

### **⚠ WARNING**

**Accidental starting can cause death or serious personal injury.** 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.

**Hazardous voltage can cause death or severe injury.** Disconnect set from load by opening line circuit breaker or by disconnecting generator output leads from transfer switch and heavily taping ends of leads. If high voltage is transferred to load during test, personal injury and equipment damage may result. The GENERATOR SAFEGUARD BREAKER MUST NOT BE USED IN PLACE OF LINE CIRCUIT BREAKER!

### **Parts List for Kit**

Description	Part No.	Qty.
FR Activator	A-258458	1
Socket Cap Screws	X-55-4	2
Wave Washers	X-6067-1	2
Cable Ties	X-468-3	3
Thermal Compound	287945	1

### **Replacement**

Before installing FR activators, mounting surfaces must be checked to make sure they are flat, clean, and free of burrs, dirt, or metal chips. When installing FR activators, apply a thin coating of supplied thermal compound to back surface of activator before mounting. When installing wave washers be sure convex side is against socket cap screw. Tighten FR activator socket cap screws to 20-25 in. lb. (2.3-2.8 Nm) or only as necessary to compress the wave washers.

### **⚠ CAUTION**

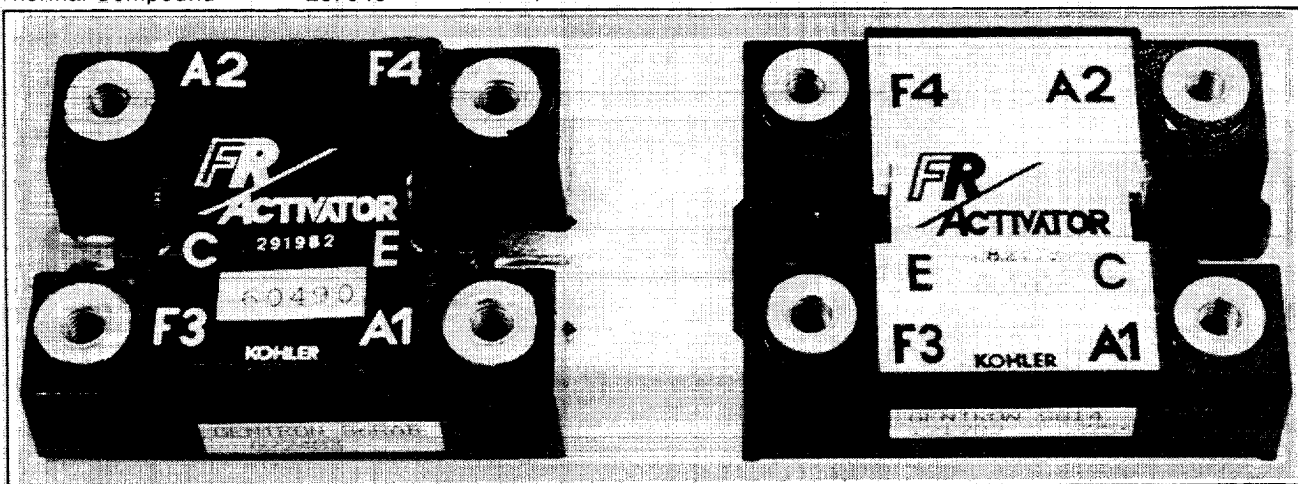
**Overtightening FR activator screws may cause regulator failure!** Do not exceed 25 in. lb. (2.8 Nm) when torquing mounting screws. Do not exceed 35 in. lb. (4.0 Nm) when torquing terminal screws.

When connecting leads to FR activator, tighten terminal screws to 30-35 in. lb. (3.4-4.0 Nm). When connecting leads from photo transistor board it may be necessary to end the female push-on terminal to allow harness clearance in end bracket.

Connection of leads to FR activator are as follows:

- Exciter armature windings to A1 and A2.
- Generator main field windings to F3 and F4.
- Red lead from photo trans. board to C.
- Black lead from photo trans. board to E.

See Figure 1.



**Figure 1. FR Activators (Old and New)**

**⚠ CAUTION**

**Do not bend C and E terminals on FR activator!** Internal damage and failure may result.

**NOTE**

Position of terminals A1, A2, F3, F4, C, and E on FR Activator may vary. It may be necessary to cut some of the cable ties so that leads will reach proper terminals.

**⚠ CAUTION**

**Leads running to FR activator must be positively secured with cable ties to prevent damage during generator operation.** If some cable ties were removed during replacement of the FR activator, use cable ties supplied with kit to secure leads.

## Testing

To test FR activators proceed as follows. Read entire procedure before beginning. Be sure NO LOAD is connected to generator set!

1. Move controller main switch to OFF position. See Figure 2.
2. Remove generator end cover to expose LED circuit board. See Figure 3.

3. Move controller main switch to TEST position to start set. Set VOLTMETER-AMMETER switch on controller as shown in Figure 2.

**⚠ WARNING**

**Hazardous voltage can cause death or severe injury.** Do not allow other light sources to focus on LED board. Voltage control and generator output may be driven to ceiling voltage, resulting in personal injury or equipment damage!

4. Shine flashlight beam directly into LED at center of circuit board (centering beam on two protruding conductors) for one minute, to actuate phototransistor. See Figures 3 and 4.
5. While shining light into LED, observe AC voltmeter (see Figure 2). Meter should indicate high voltage—over 300 Volts. If not, troubleshoot generator set for other problems.
6. Turn flashlight off. AC voltmeter should show drop to normal voltage. If not, FR activator is defective.
7. Repeat steps 5 and 6 for two more tests. If voltage does not return to normal after each time flashlight is turned off, FR activator is defective.

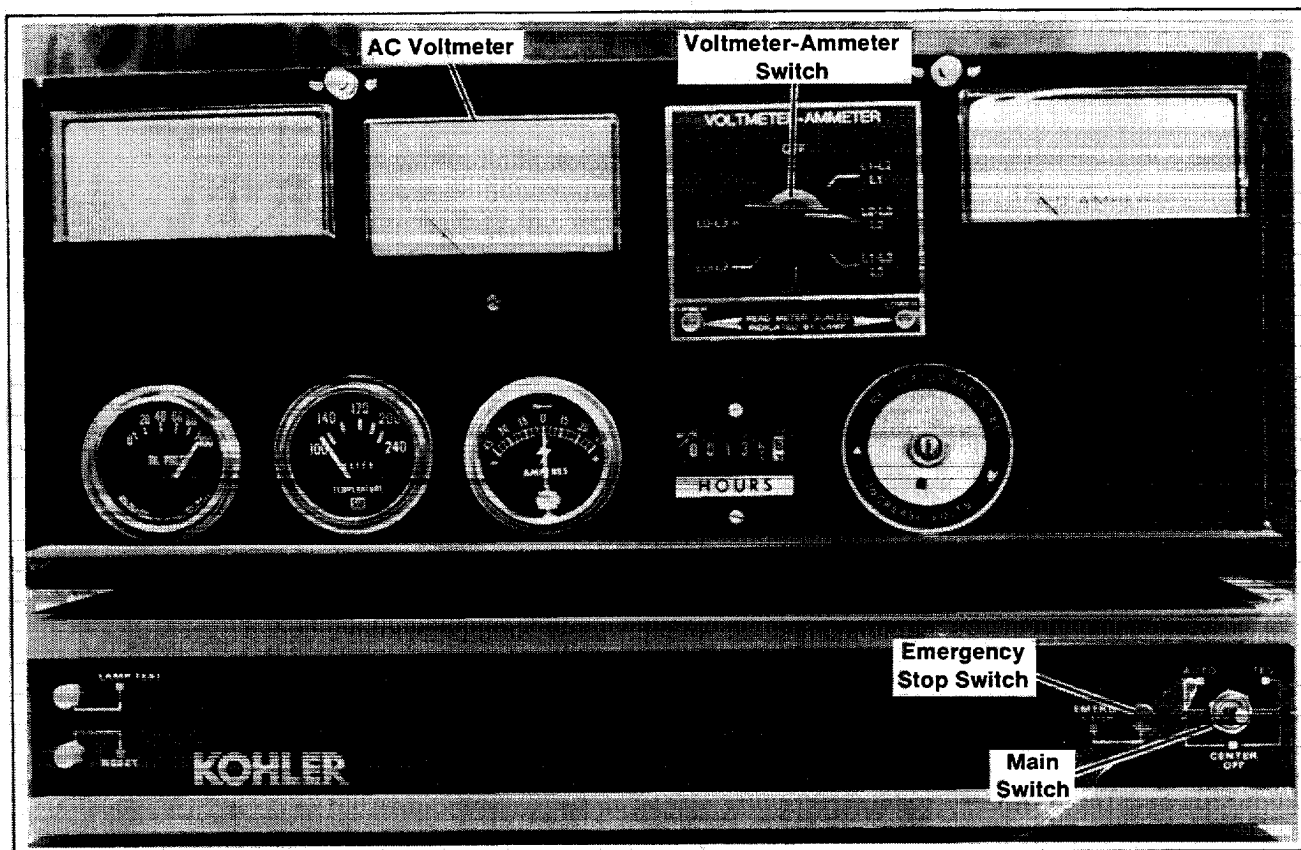
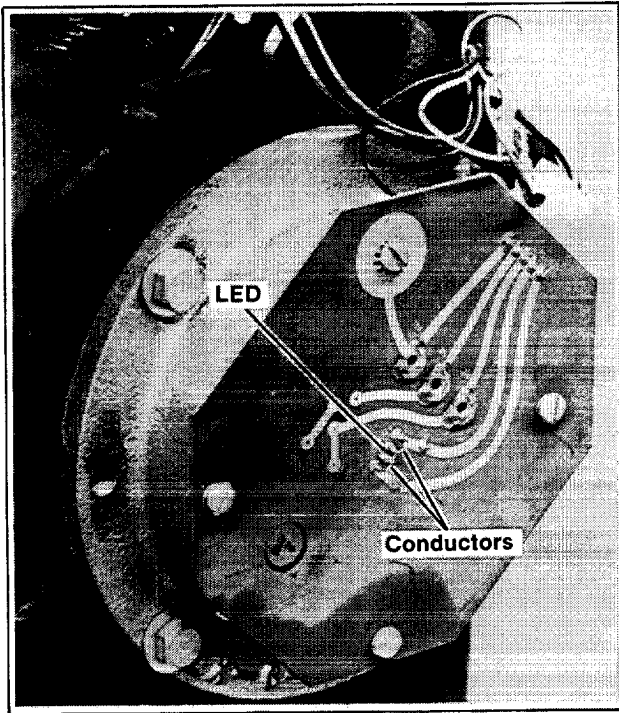
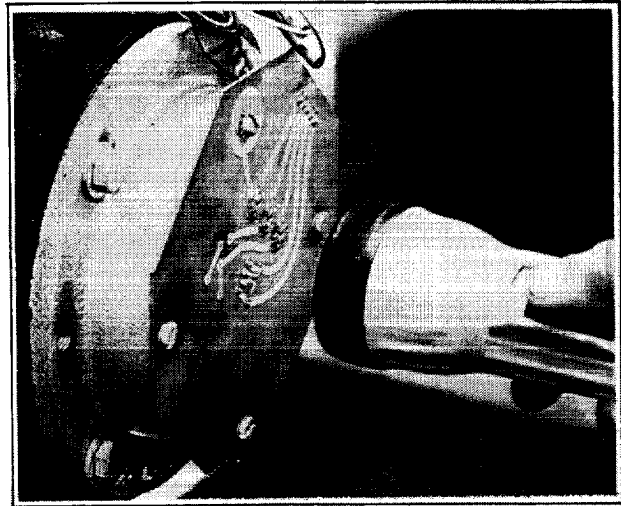


Figure 2. Controller



**Figure 3. LED Circuit Board**

8. Move main switch to OFF position and depress EMERG. STOP button to stop generator set. See Figure 2.



**Figure 4. Flashlight Position**

9. Replace FR activator if defective. Repeat procedure for new activator.