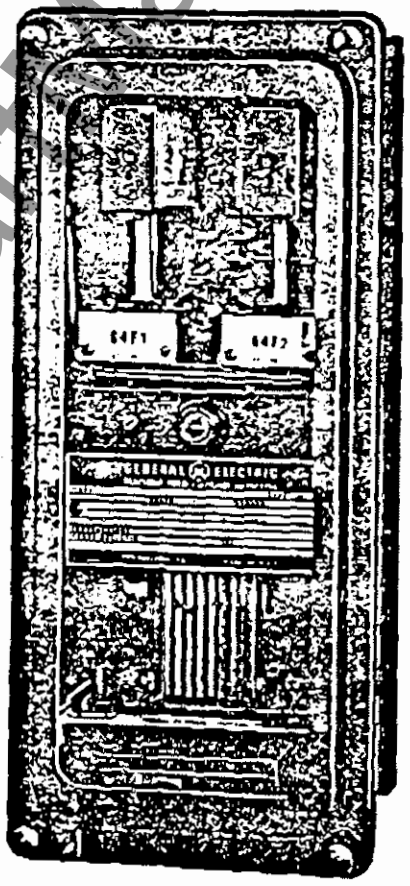
TYPE PJG
GROUND DETECTOR
(UNGROUNDED MACHINE FIELDS)

SWITCHGEAR
PROTECTIVE RELAYS



The PJG11F relay is designed for the detection of grounds on ungrounded a-c machine field circuits.

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GENERAL ELECTRIC

DESCRIPTION

The relay consists of two plunger-type units, a transformer, and a diode bridge, all in one case. The relay is operated from a grounded voltage source connected through one plunger-unit coil to the machine field circuit (Fig. 2). When a ground on the normally ungrounded field completes the circuit, the unit picks up.

The a-c supply voltage is transformed, rectified, and filtered, producing a d-c operating voltage for the relay with a ripple of one-half volt or less. This is applied between the ungrounded field and ground. An indicating light on the front of the relay shows that the d-c operating voltage is available.

One of the plunger-type units picks up if a ground develops on the field circuit. The other removes the operating unit from the grounded field and closes a contact for tripping or alarm. Reset is either by hand or electrically through the TEST-RESET switch.

SELECTION DATA

Model No.	Volts (a-c)	Frequency (cps)	Max. Reverse Volts (d-c)	Case Size	Instruction Book
12PJG11F6A	120/240	50/60	500	M-1	GEI-44241

Relays are rated for either 120- or 240-volts a-c supply. Transformer taps are interchangeable in the field.

If it is desired to use these relays for machine fields rated above 375-volts d-c, consult nearest General Electric sales office.

Type PJG11F relays can be reset either by hand or electrically. The TEST-RESET switch is not part of the relay.

For further information, order publications from your General Electric district sales office.

Prices—Apparatus Handbook Sect. 7210

Ordering Instructions—Apparatus Handbook Sect. 7211

Purchasing Information—Apparatus Handbook Sect. 7305

Renewal Parts—GEF-4145

CONSTRUCTION

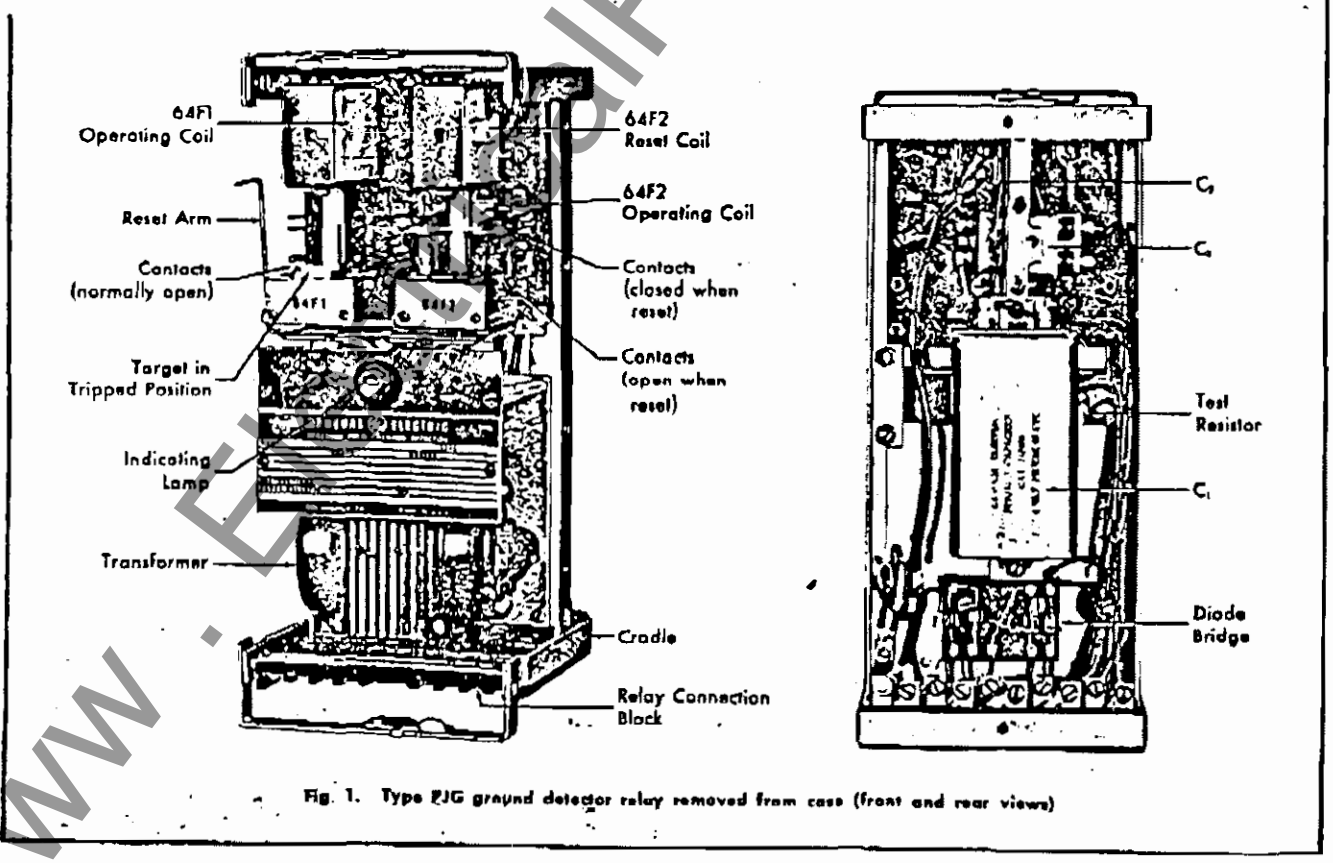


Fig. 1. Type PJG ground detector relay removed from case (front and rear views)

APPLICATION

An a-c machine field circuit is usually operated ungrounded, and a single ground does not damage the machine. However, a second ground can cause considerable damage, and protective equipment is therefore recommended to detect the first ground. The Type PJG relay (Fig. 3) serves this function. It can be used either to sound an alarm or to remove the load from the machine.

Figure 4 shows typical external connections for the relay.

To make sure that the relay will function for a ground on the alternator field, it is necessary that the rotor iron be grounded directly. Consult the machine manufacturer for a suitable grounding method.

The Type PJG relay may be used with machine fields rated 375 volts or less. It should not be applied where the exciter reverse voltage can rise above 500 volts.

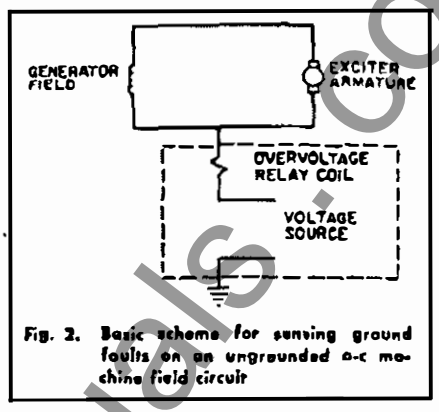


Fig. 2. Basic scheme for sensing ground faults on an ungrounded a-c machine field circuit

SENSITIVITY

The Type PJG relay will respond to grounds as follows: In the negative field lead—up to approximately 500 ohms at 80 per cent of the rated a-c voltage of the relay

In the positive field lead—up to approximately 3200 ohms at 125 volts dc

—up to approximately 5900 ohms at 250 volts dc

—up to approximately 8700 ohms at 375 volts dc

CONTACT RATINGS (Terminals 1-2)

Closing—5 amperes
Continuous—5 amperes
Interrupting:

Volts D-c (Non-inductive)	Amperes
24	5.0
48	2.0
125	1.0
250	0.3

BURDENS

State	Volt-amperes	
	50 cycle	60 cycle
No fault (i.e., transformer, rectifier, and lamp)	9.6	8.0
Maximum (rated voltage and frequency)	36.0	30.0

CONNECTION DIAGRAMS

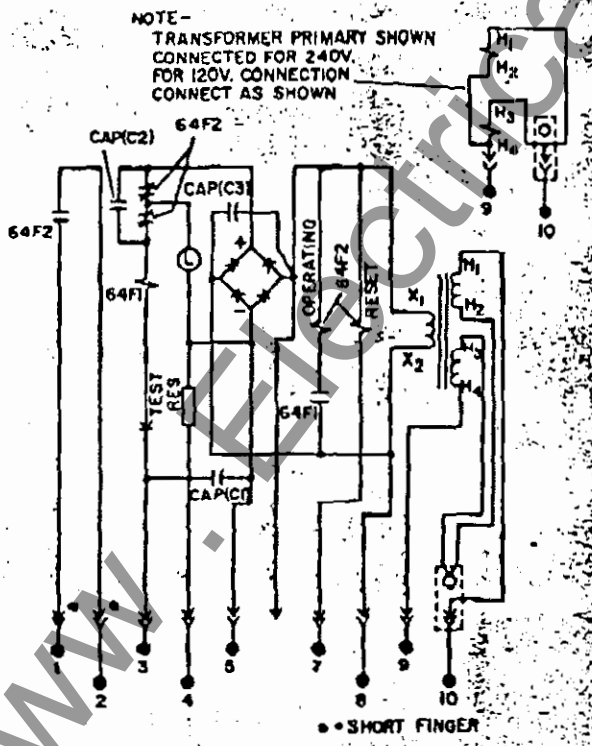


Fig. 3. Internal connections for Type PJG11F relays

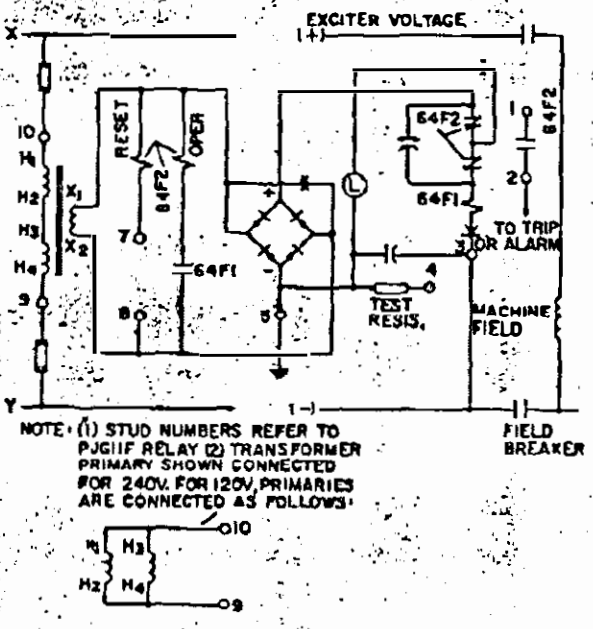
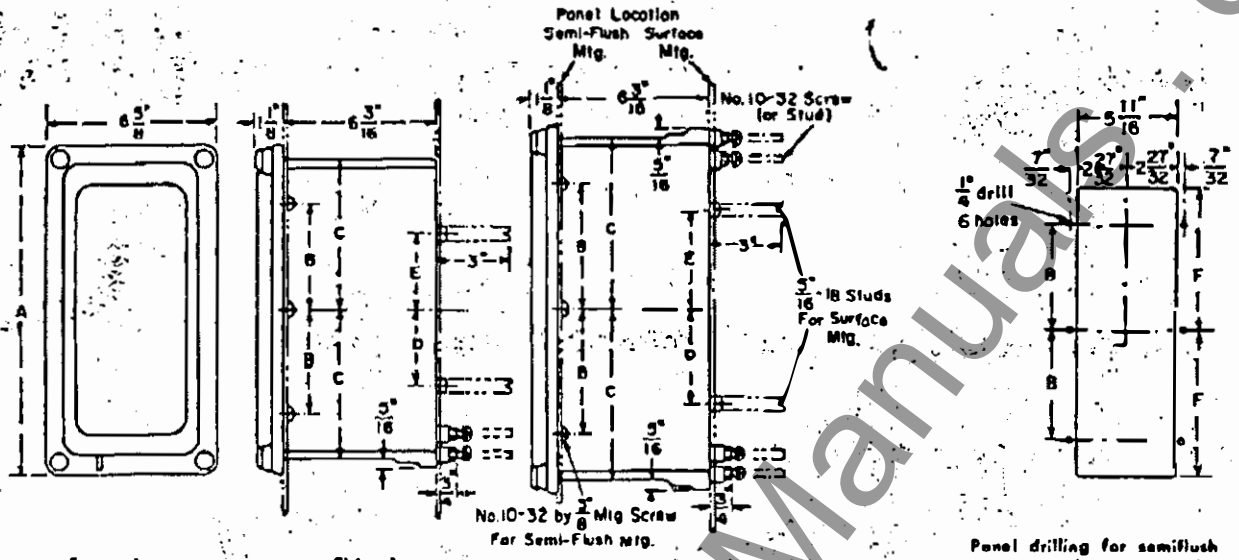


Fig. 4. External connections for Type PJG11F relays

DIMENSIONS

Dimensions are subject to change and should not be used for construction without approval.



Front view, all sizes

Side view, single-end case

Side view, double-end case

Panel drilling for semiflush mounting (front view) for M-1 cases

Size	Case	Connecting Plugs	Dimensions in Inches					
			A	*B	C	†D	E	&F
M-1	Medium	One	15 1/16	5 3/16	7 1/32	4 3/32	4 3/32	7 1/32

* 6 screws in "M" size cases. † 4 studs in "M" size cases. & These are maximum dimensions

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