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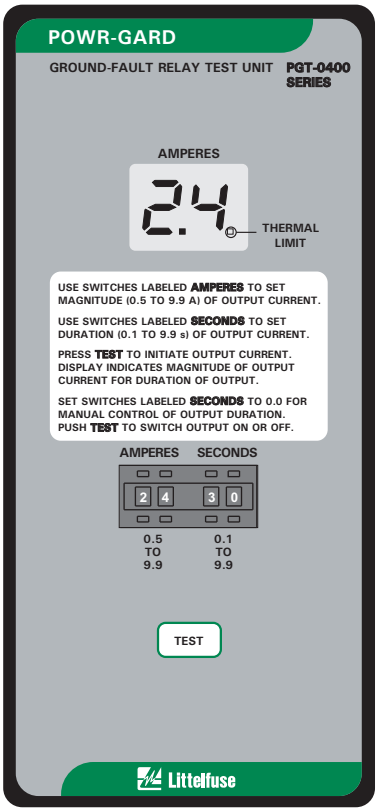
POWR-GARD®
Relay Testing Equipment
PGT-0400 Series
Ground-Fault Relay Test Unit

PGT-0400

Ground-Fault Relay Test Unit

AUGUST 17, 2009

REVISION 0



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DISCLAIMER

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1. GENERAL

The PGT-0400 is an ac current source with a programmable output. The magnitude and duration of the output burst can be selected with front-panel thumbwheel switches so that ground-fault-relay coordination can be confirmed at the push of a button.

The current output is transformer isolated from control power. A simplified block diagram of the PGT-0400 is shown in Fig. 1.

2. INDICATION

The two-digit LED display indicates the magnitude of the output current for the duration of the output burst. The center decimal point serves as a control power indicator. The decimal point on the right side of the display is used to indicate the thermal limit condition.

3. THERMAL LIMIT

When the PGT-0400 is used in the continuous output mode, the internal circuit temperature may reach the thermal limit temperature. To prevent damage to the PGT-0400 the current output is disabled and the thermal limit indicator comes on. The output remains disabled until the temperature has fallen to a safe level at which time the thermal limit indicator turns off and the output is enabled.

4. INSTALLATION

PGT-0400 outline and mounting details are shown in Fig. 2. Panel-mounting procedures are shown in Fig. 3.

Connect 120-Vac supply voltage to L1 and L2. Connect ground terminal ⏚ to ground. Loop a test wire through the windows of the ground-fault CT's. Connect one end of the test wire to terminal OP1 and the other end to terminal OP2. For lead lengths under 40 ft, use 14 gauge wire. For lead lengths over 40 ft and less than 80 ft, use 12 gauge wire.

If remote operation is required, connect a normally open contact across RMT1 and RMT2. Low-level contacts are recommended.

Typical connection diagrams are shown in Fig. 4.

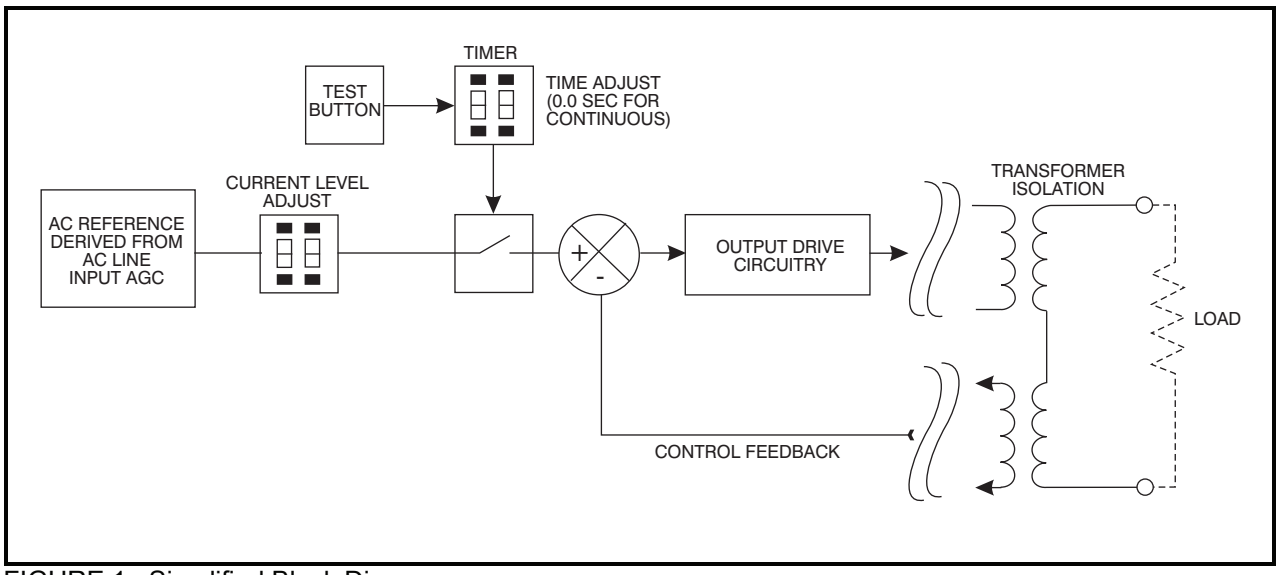


FIGURE 1. Simplified Block Diagram.

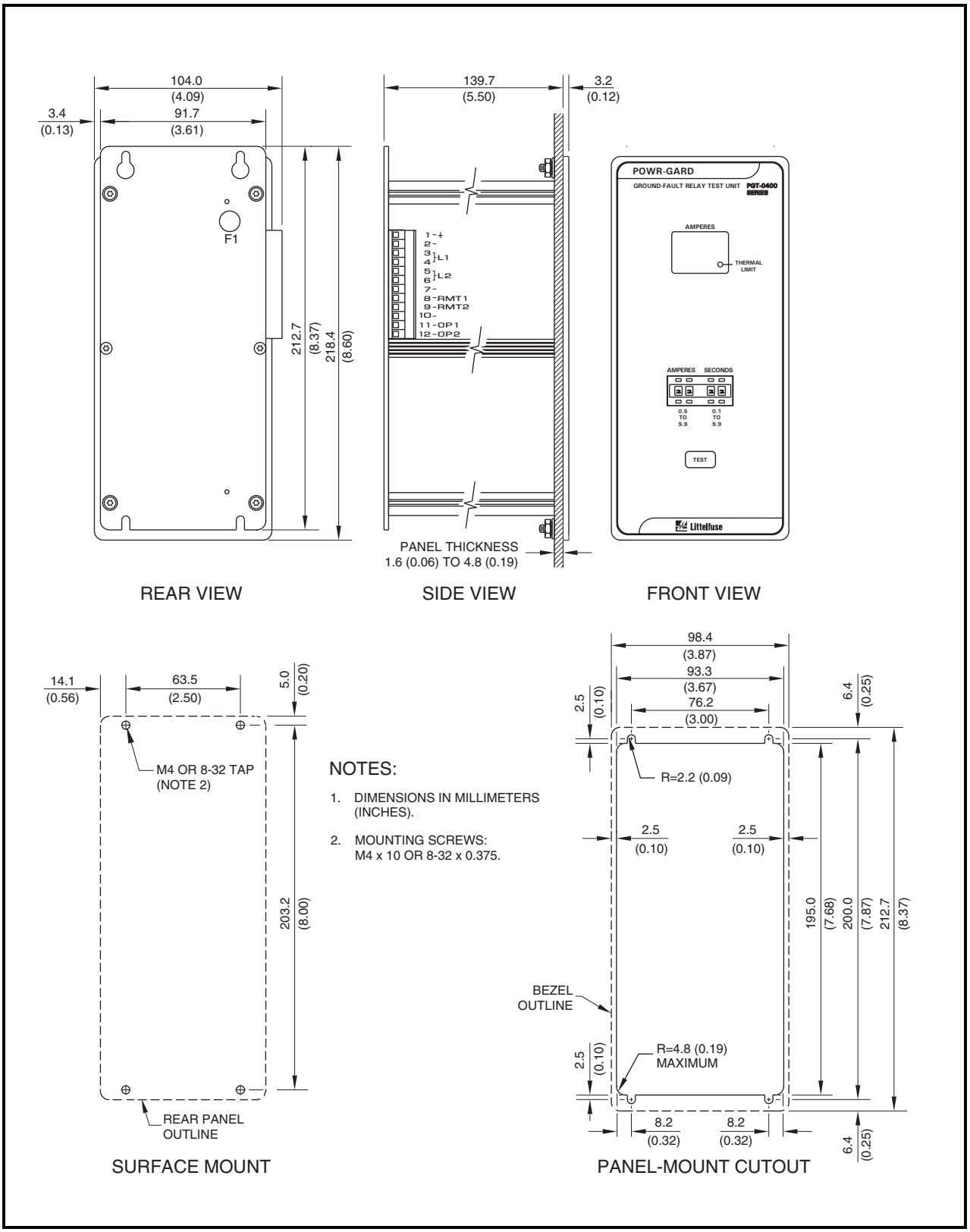
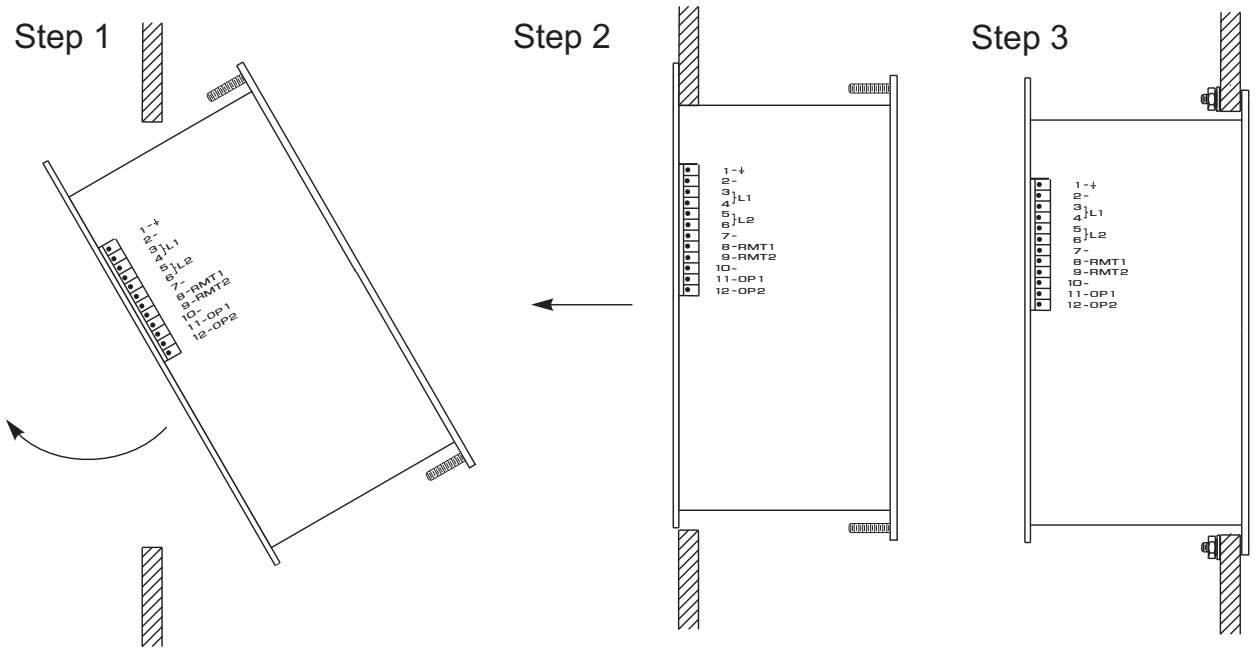
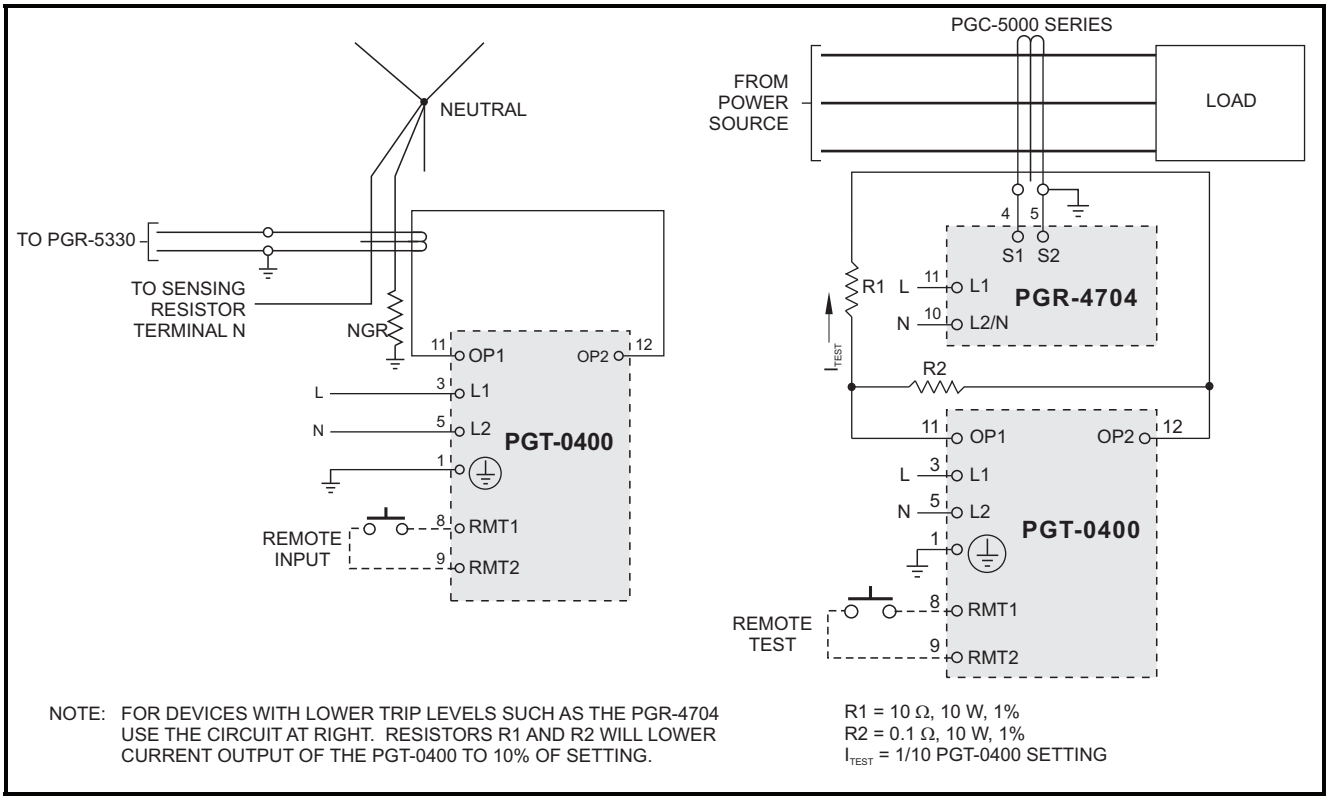


FIGURE 2. PGT-0400 Outline and Mounting Details.



The PGT-0400 may be panel mounted without disassembly.
NOTE: Remove plug-in terminal block before installing PGT-0400 through panel.

FIGURE 3. Panel-Mounting Procedure.



NOTE: FOR DEVICES WITH LOWER TRIP LEVELS SUCH AS THE PGR-4704 USE THE CIRCUIT AT RIGHT. RESISTORS R1 AND R2 WILL LOWER CURRENT OUTPUT OF THE PGT-0400 TO 10% OF SETTING.

R1 = 10 Ω, 10 W, 1%
R2 = 0.1 Ω, 10 W, 1%
I_{TEST} = 1/10 PGT-0400 SETTING

FIGURE 4. Typical Connection Diagrams.

5. TEST PROCEDURE

- Set the required output current level—0.5 to 9.9 A. The recommended test current is 120% of the ground-fault trip level of device being tested.
- Set the output duration—0.1 to 9.9 s or 0.0 for push on, push off operation.
- Press the TEST button. If the ground-fault fails to trip, increase either the current level or time duration, and repeat the test until a trip occurs.

6. TROUBLESHOOTING

Problem:
- No current output when the TEST button is pressed.

Possible Causes:
- Loose output connections.
- Resistance of the output wire is too high.
- VA requirement of the load is too high.
- Current is set to less than 0.4 A.
- No control power.
- Exceeded thermal limit.

Troubleshooting:
- Check the PGT-0400 operation by connecting a short length of wire across the output terminals and pressing the TEST button.
- If using a remote test switch, check remote switch operation and connection to the PGT-0400.

7. TECHNICAL SPECIFICATIONS

Input Voltage .....120 Vac , 60 Hz, 80 VA

Output Current Setting .....0.5 - 9.9 A
Output Duration Setting.....0.1 - 9.9 s or continuous
Output Voltage .....5.0 Vac maximum

Shipping Weight .....2.2 kg (4.8 lb)

Dimensions:
Height.....212.7 mm (8.37”)
Width..... 104.0 mm (4.1”)
Depth ..... 142.9 mm (5.62”)

Environment:
Operating Temperature ..-40 to 60°C
Storage Temperature.....-55 to 80°C

