



INSTRUCTIONS

GEI-50271

I 33920

RELAYS

CARRIER CURRENT GROUND RELAY

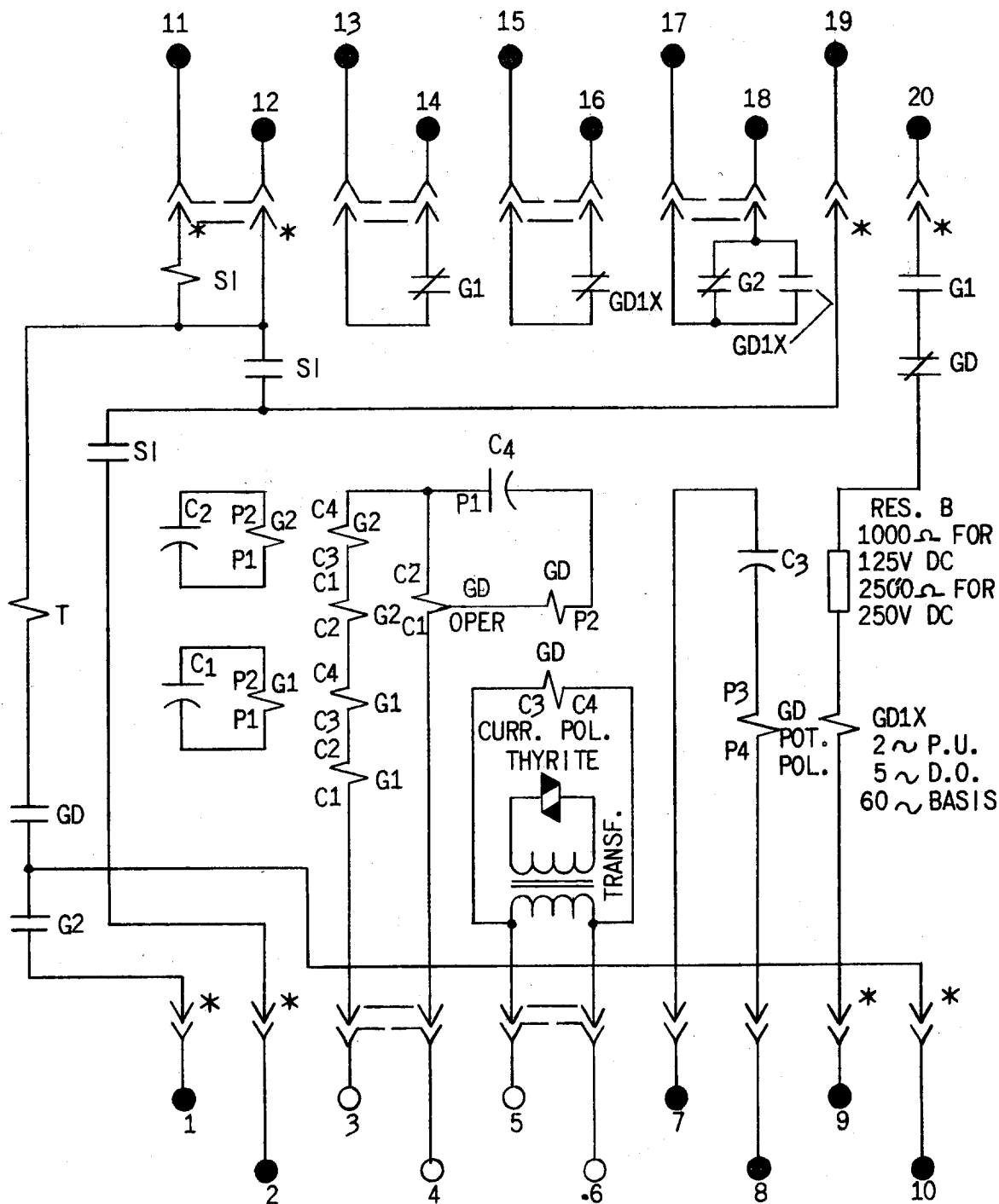
TYPE CLPG12A

LOW VOLTAGE SWITCHGEAR DEPARTMENT

GENERAL  ELECTRIC

PHILADELPHIA, PA.

GEI-50271 Carrier Current Ground Relay Type CLPG12A



G1-INSTANT. OVERCURRENT UNIT (TOP)
 G2-INSTANT. OVERCURRENT UNIT (MIDDLE)
 GD-GROUND DIRECTIONAL UNIT (BOTTOM)
 T-TARGET
 SI-SEAL-IN UNIT

*=SHORT FINGER

Fig. 1 Internal Connections for Type CLPG12A Relay (Front View)

Fig. 1 (418A823)

CARRIER CURRENT GROUND RELAY

TYPE CLPG12A

INTRODUCTION

These instructions supplement Instruction Book GEI-33920 which is included in this book. The combination of the two forms instructions for the Type CLPG12A relay.

DESCRIPTION

The Type CLPG12A relay differs from the Type CLPG11A relay as follows:

1. A Thyrite * shunt across the current polarizing circuit to reduce the shift in maximum torque angle of the relay at high polarizing currents, and to reduce the shift in the polarizing current angle by "unloading" the current transformer.
2. A "low gradient" contact in the carrier start circuit to eliminate possible contact welding due to vibration.
3. Reversal of the torque direction of the G2 unit relative to the G1 and GD units to reduce the possibility of tripping due to shock.
4. The addition of a normally closed contact on the G2 unit required on the new carrier ground scheme to prevent tripping on an external fault which is not of sufficient magnitude to start carrier.

BURDENS

The current circuits burdens listed in the following Table are at 5 amperes and rated frequency. The potential polarizing circuit (studs 7-8) capacitive burden at 120 volts and rated frequency is 18.9 volt-amperes and 15.4 watts.

CURRENT CIRCUITS BURDENS

CIRCUIT	R	X	Z	WATTS	VARs	VA
Operating (Studs 3-4)	1.04	1.64	1.94	26	41	48.5
Polarizing (Studs 5-6)	0.25	0.04	0.26	6.28	1.11	6.4

INSTALLATION

The outline and panel drilling dimensions are shown in Fig. 10 of the included Instruction Book, GEI-33920.

CONNECTIONS

The internal connection diagram of the Type CLPG12A relay is shown in Fig. 1 of this supplement.

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the General Electric Company.

* Reg. Trade-Mark of General Electric Company

ADJUSTMENTS

The middle unit (G2) operates in the opposite direction from the top unit (G1 but otherwise the same testing instructions apply to this relay as do the Type GLPG11A relay with the exception of the clutch settings and the low gradient contact assembly.

CLUTCH SETTINGS

The current values for the clutches to slip are given in the following Table.

CLUTCH ADJUSTMENTS

UNIT	RATING	CURRENT FOR CLUTCH TO SLIP (AMPS)
G-1	0.4-1.6	2.0-2.8
	0.8-3.2	4.0-5.6
G-2	0.5-2.0	4-5
	1.0-4.0	8-10
G-D		10-15

LOW GRADIENT CONTACT ASSEMBLY

The low gradient contact assembly may be adjusted in the following manner:

1. Loosen the locking screw which secures the barrel contact to its support and unwind the barrel contact so that the moving contact is permitted to move freely.
2. Adjust the tension of each low gradient contact brush so that 1/4-1/2 gram of pressure is required at the contact tip in order to cause the end of the brush to separate from the inner face of its respective brush retainer.
3. Adjust the upper control spring so that the moving contact arm is parallel to the sides of the unit.
4. Loosen the locknut which locks the mounting screw to the stationary contact support. Wind the mounting screw in until the moving and stationary contacts just begin to touch. Unwind the mounting screw until the stationary contact stop lines up with the moving contact brush retainer. Then tighten the locknut.
5. Wind up the upper control spring approximately 1/4 turn.
6. Check that the wipe is between 0.004-0.009 inch. This can be done by means of go-no-go scheme using two thicknesses of insulating material; one 0.005 inch thick and the other 0.010 inch thick.
 - (a) Insert the thinner piece of material between the moving contact stop and the head of the stop screw, and, by means of an indicating light, note that the moving and stationary contact members make contact.
 - (b) Insert the thicker piece of material between the moving contact stop and the stop screw and note that the contacts do not make.
7. If the wipe is not correct rotate the mounting screw the number of full turns in the direction required to cause the wipe to fall within limits.
8. Adjust the tension of the stationary contact brush until the movements of both the moving and stationary brushes are approximately equal when the contact is fully wiped in.
9. Rotate the barrel contact in a direction which will close the contact gap until the contacts just begin to touch.
10. Rotate the barrel in the opposite direction 7/12 revolution (210°) to obtain approximately 0.018 inch gap.
11. Tighten the contact support screw which secures the barrel to the support.