



INSTRUCTIONS

GEK-34089

Insert Booklet GEH-1753

TIME OVERCURRENT

TYPE IAC

RELAY IAC75F

POWER SYSTEMS MANAGEMENT DEPARTMENT

GENERAL  ELECTRIC

PHOTO NOT AVAILABLE AT THIS TIME

FIGURE 1 Picture, Front View, Out of Case
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FIGURE 2 Picture, Rear View, Out of Case
Photo Not Available

SHORT TIME OVERCURRENT RELAY

TYPE IAC75F

DESCRIPTION

The Type IAC75F relay is of the same general construction as Type IAC51A described in the included instructions GEH-1753. Some of the parts, adjustments and specifications have been altered to give shorter operating times. The most obvious of the changes are that the U-magnet is mounted on the opposite side and the spiral cut-out of the disk has been omitted. The former is of little importance but the omission of the cut-out of the disk means that there is no compensation for the windup of the control spring. This means that more current is required in the operating coil, to close the contacts than to start the disk turning from the No. 10 time position. This ratio is approximately 1.4 to 1 and will not be of much importance on the applications to which this relay is usually applied.

Since these relays operate at a very high torque level, they are supplied with a "locked" time dial, to prevent any possible change in setting due to this high torque. To change a time dial setting, loosen the two screws in the dial hub, turn the time dial to the described setting and retighten the screws.

Typical time-current curves and internal connections diagram for these relays are shown on Figures 5 and 6 of this instruction book. Outline and panel drilling instructions are found in the included instructions GEH-1753 Figure 20.

APPLICATION

The Type IAC75F relay was designed specifically as a ground fault relay for low voltage systems (600 volts or less). Figure 3 (sketch attached) shows the external connections for a generalized typical application. Note that the relay can be utilized with standard rated bar or window CT's monitoring individual conductors (residual connection) or a window CT enveloping all conductors (zero sequence connection). It is intended that the instantaneous unit contact be wired in series with the time overcurrent unit contact as shown in Figure 4. The quick reset of the instantaneous unit is used to eliminate consideration of the overtravel time of the time overcurrent unit. Consequently, the instantaneous unit must be set at a current value equal to or below the time overcurrent unit settings.

Since the Type IAC75F relay is uncompensated (no disk cut-out to account for control spring wind-up) it should never be applied as a phase relay or as a ground relay where significant current may flow through the operating coils for a non-fault condition. Unless this precaution is adhered to the relay may "meter". That is, currents below the pickup setting of the time overcurrent unit may cause the disk to rotate from the deenergized position. Refer to the section on RATINGS for a discussion of current magnitude required to just cause disk rotation at various time dial settings.

RATINGS

The IAC75F(-)A relay has an instantaneous unit similar to those described in Instructions GEH-1753 except that it has no target and a continuous rating of three times minimum pickup. The range of the instantaneous unit is reduced to $3 \frac{1}{3}$ to 1 as compared with those instantaneous units described in GEH-1753.

The Instantaneous unit coil is continuously rated at 96 percent of its maximum setting.

The Instantaneous unit contacts have a current-closing rating of 30 amperes for voltages not exceeding 250 volts.

The Induction unit compensation curve is shown in figure 7 for various time dial settings.

Burdens for the IAC75F time overcurrent unit at 5.0 amperes 60 cycles on the 1.5 ampere tap are as follows:

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.

To the extent required the products described herein meet applicable ANSI, IEEE and NEMA standards, but no such assurance is given with respect to local codes and ordinances because they vary greatly.

RATING (AMPS)	VOLT AMPS	IMPEDANCE (OHMS)	P.F.
1.5-6.0	78.3	3.13	0.40

Burdens for the instantaneous unit at 5.0 amperes 60 cycles at minimum pickup setting are as follows:

RATING (AMPS)	VOLT AMPS	IMPEDANCE	P.F.
1.5-5.0	13.25	0.53	.81

With the above exceptions, the included instructions GEH-1753 apply to this relay in every respect.

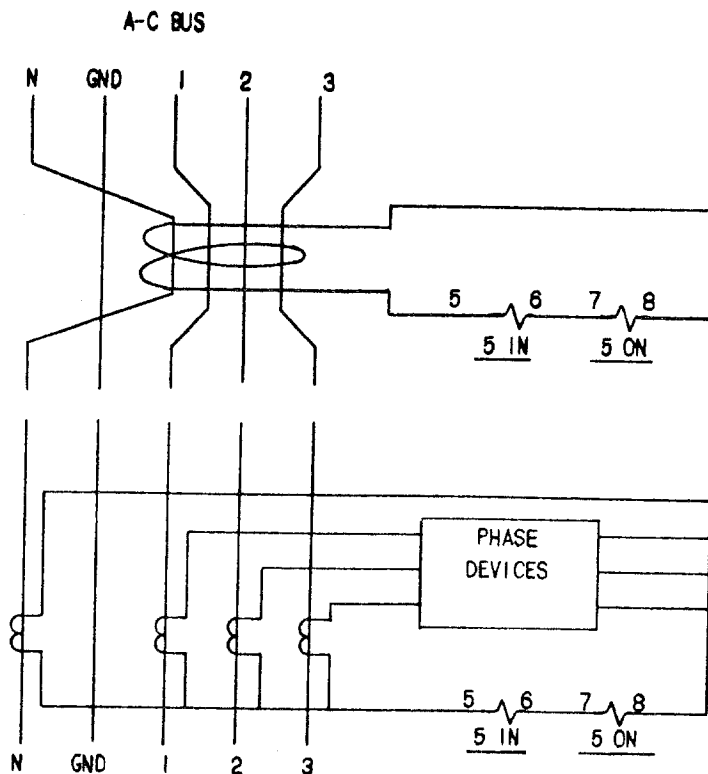


FIG. 3 (0246A3789-0) External Connections For The 121AC75P(-)A Relays

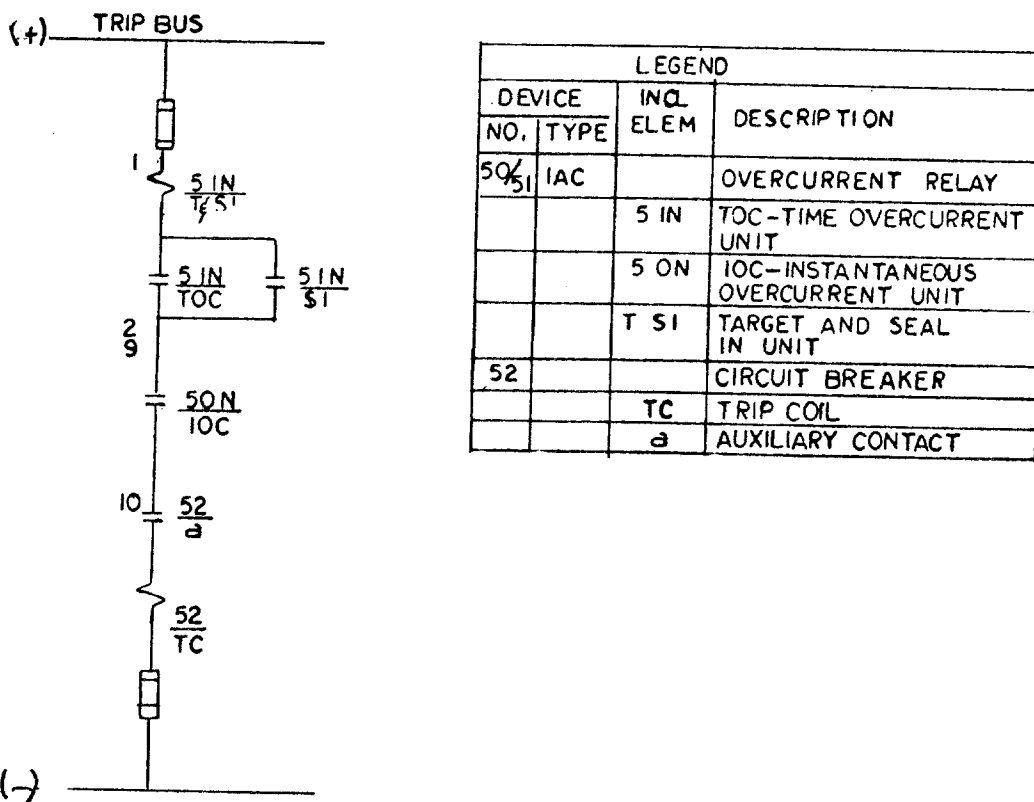


FIG. 4 (0246A3368-0) External Connections For The Trip Circuit Of The 121AC75F(-) Relay

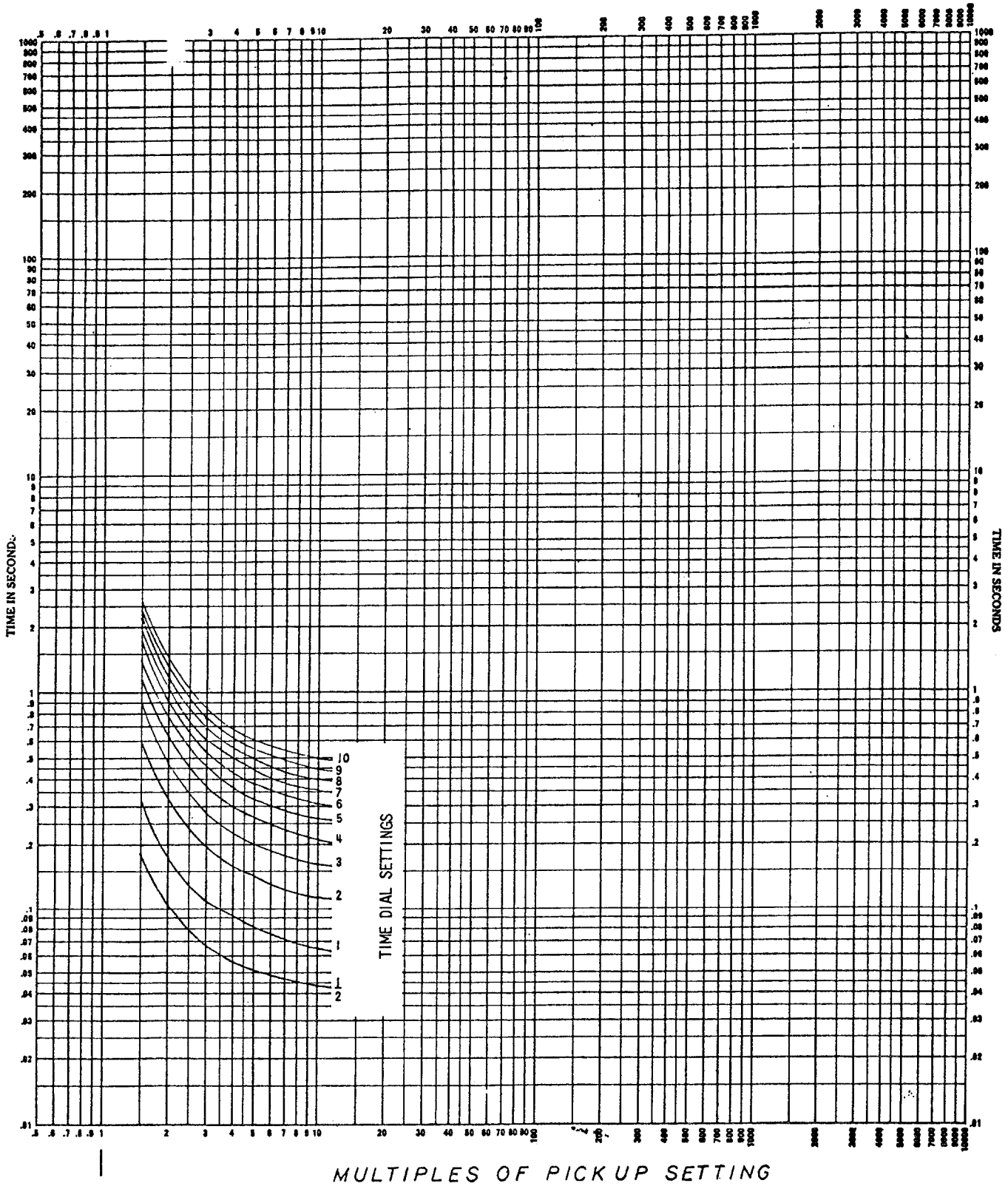


FIG. 5 (0183B2495-1) Typical Time Current Curves For The 12IAC75F(-)A Relays

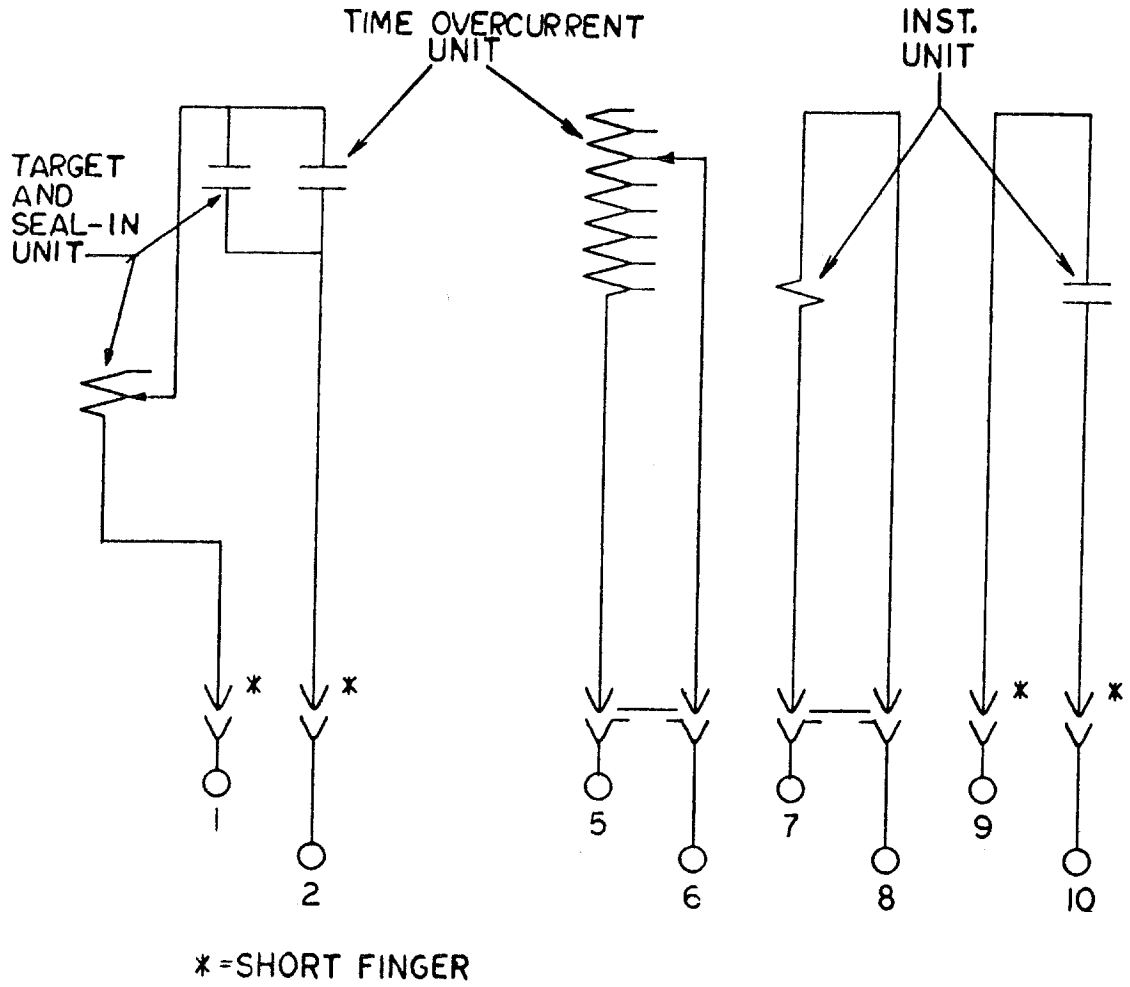


FIG. 6 (0246A2263-1) Internal Connections Diagram For The 12IAC75F(-)A Relays



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