

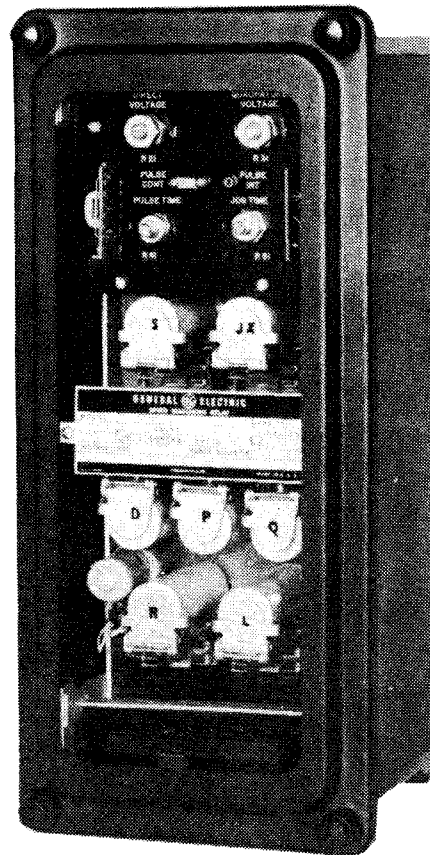


INSTRUCTIONS

GEK-7353B

SUPPLEMENT TO GEK-7352

SPEED MATCHING RELAY TYPE GTL14B(-)A



GENERAL  ELECTRIC

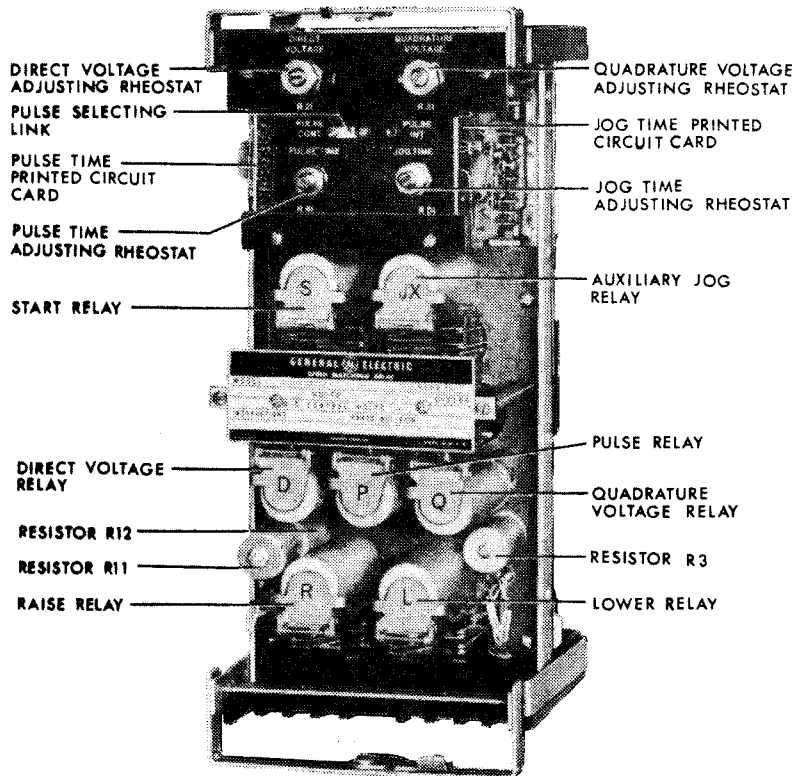


Figure 1. (8037933) Type GTL14B Relay Removed From case (Front View)

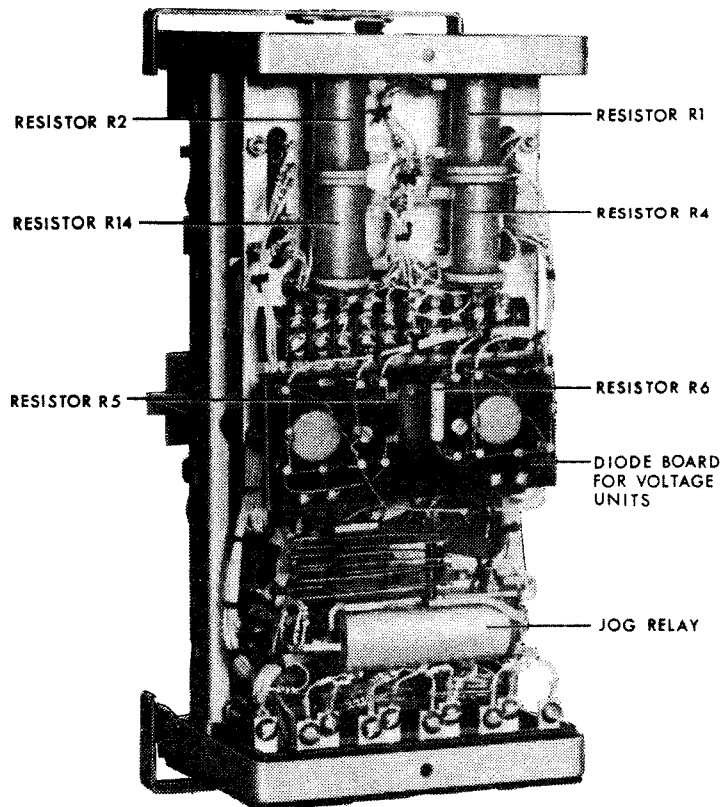


Figure 1A. (8037937) Type GTL14B Relay Removed From Case (Rear View)

SPEED MATCHING RELAY TYPE GTL14B(-)A

INTRODUCTION

This supplement together with instruction book GEK-7352 which is included in this book forms instructions for the GTL14B relay.

DESCRIPTION

The GTL 14B relay is similar to the GTL13B relay described in GEK-7352 except an additional timing circuit comprised of static components and 2 telephone type relay units is included. The additional timing circuit is to jog the incoming generator off dead center if this becomes necessary.

When a generator's frequency is matched with that of a bus, it is possible to find that the two frequencies match perfectly but the generator is and will remain out of phase with the bus. To overcome this the GTL14B relay is equipped with auxiliary devices which initiate a speed raising impulse if a predetermined interval of time (adjustable from 4 to 25 seconds) elapses between speed matching impulses.

OPERATING PRINCIPLES

The GTL14B relay's operation is the same as that of the GTL13B relay except that the jog timing circuit is energized at all times when the relay is energized as shown in Figure 3. The capacity is charged thru the R51 rheostat and after an adjustable interval of 4 to 25 seconds the transistor Q6 turns on to pick up the jog relay J. The J relay drops out the pulse relay P, if it finds it picked up, discharges the pulse timing capacitor and then picks up JX auxiliary relay. The JX relay drops out the J relay and then picks up the R relay to initiate a speed raising pulse. A contact of R energizes the pulse timing circuit and after a predetermined time the pulse relay P picks up to terminate the speed raising pulse. All pulses both those initiated by the D and Q relays and those initiated by the jog relay are the same length and adjustable over a time range of 0.05 to 0.6 seconds.

Each time a speed changing impulse is given the R or L relay discharges the jog timing capacitor to reset the jog timing circuit. Therefore no speed raising impulses will be initiated by the jog relay unless the time between speed changing impulses has been longer than the jog timer setting.

Since the last edition, changes have been made in the second paragraph of OPERATING PRINCIPLES, and in Figures 2A, 2B, and 2C.

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.

GEK-7353 Speed Matching Relay

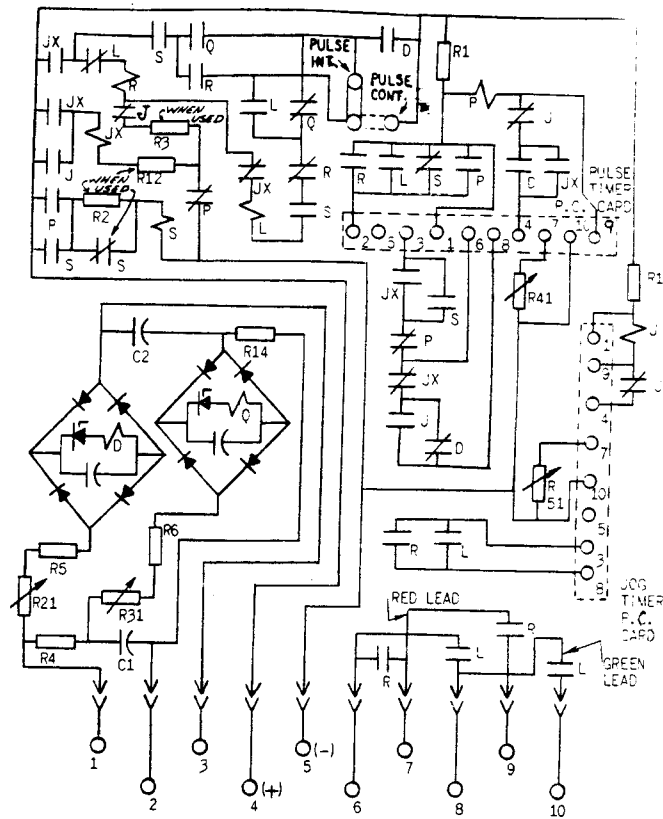
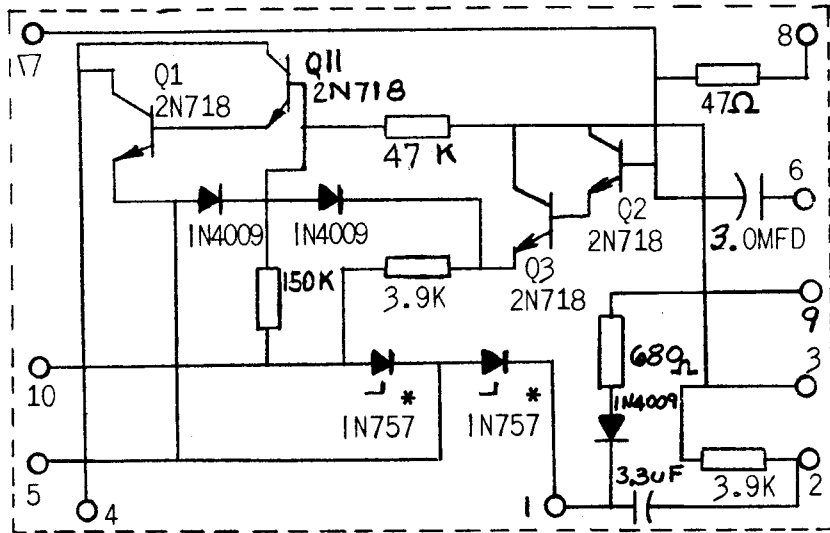


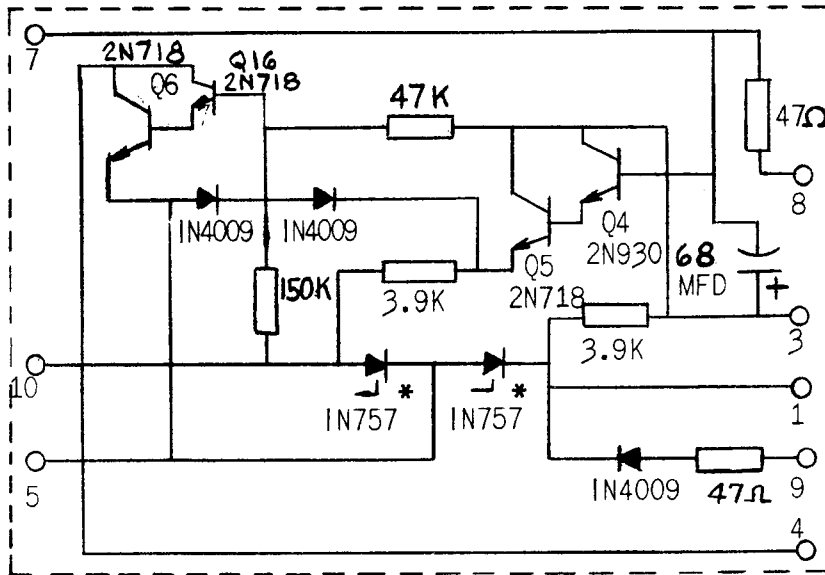
Figure 2A (0203A8625 Sh.1 [2]) Internal Connections of the GTL14B(-)A Relay (Front View)

MODEL	FORM							
12GTL14B(-)A	1	2	3	4	5	6	7	8
VOLTS A.C.	115	115	115	115	115	115	115	115
FREQUENCY	60	60	50	50	40	40	60	60
CONTROL CIRCUIT V.D.C.	125	250	125	250	125	250	24	48
RESISTANCE IN OHMS								
D COIL	2500	2500	2500	2500	2500	2500	2500	2500
L COIL	1200	1200	1200	1200	1200	1200	250	1200
P COIL	400	400	400	400	400	400	400	400
R COIL	1200	1200	1200	1200	1200	1200	250	1200
S COIL	1300	1300	1300	1300	1300	1300	1300	1300
Q COIL	2500	2500	2500	2500	2500	2500	2500	2500
J COIL	400	400	400	400	400	400	400	400
JX COIL	1300	1300	1300	1300	1300	1300	1300	1300
R1, R11	5K	10K	5K	10K	5K	10K	175	
R2, R12	1.5K	4K	1.5K	4K	1.5K	4K	-	
R3	500	2K	500	2K	500	2K	-	500Ω
R4, R14	2650	2650	2500	2500	2650	2650	2650	2650
R5	6K	6K	6K	6K	6K	6K	6K	6K
R6	1K	1K	1K	1K	1K	1K	1K	1K
R21, R31	7.5K	7.5K	7.5K	7.5K	7.5K	7.5K	7.5K	7.5K
R41, R51	1M	1M	1M	1M	1M	1M	1M	1M
CAPACITANCE VALUES IN MUF								
C1, C2	1.0	1.0	1.25	1.25	1.5	1.5	1.0	1.0

Figure 2B (0203A8625 Sh.2 [3]) Internal Connections of the GTL14B(-)A Relay (Front View)



PULSE TIMER P.C. CARD



JOG TIMER P.C. CARD

*** HW 7.5B FOR 24 VOLT FORMS**

Figure 2C (0203A8625 Sh.3 [4]) Internal Connections Diagram for the GTL14B(-)A Relay (Front View)

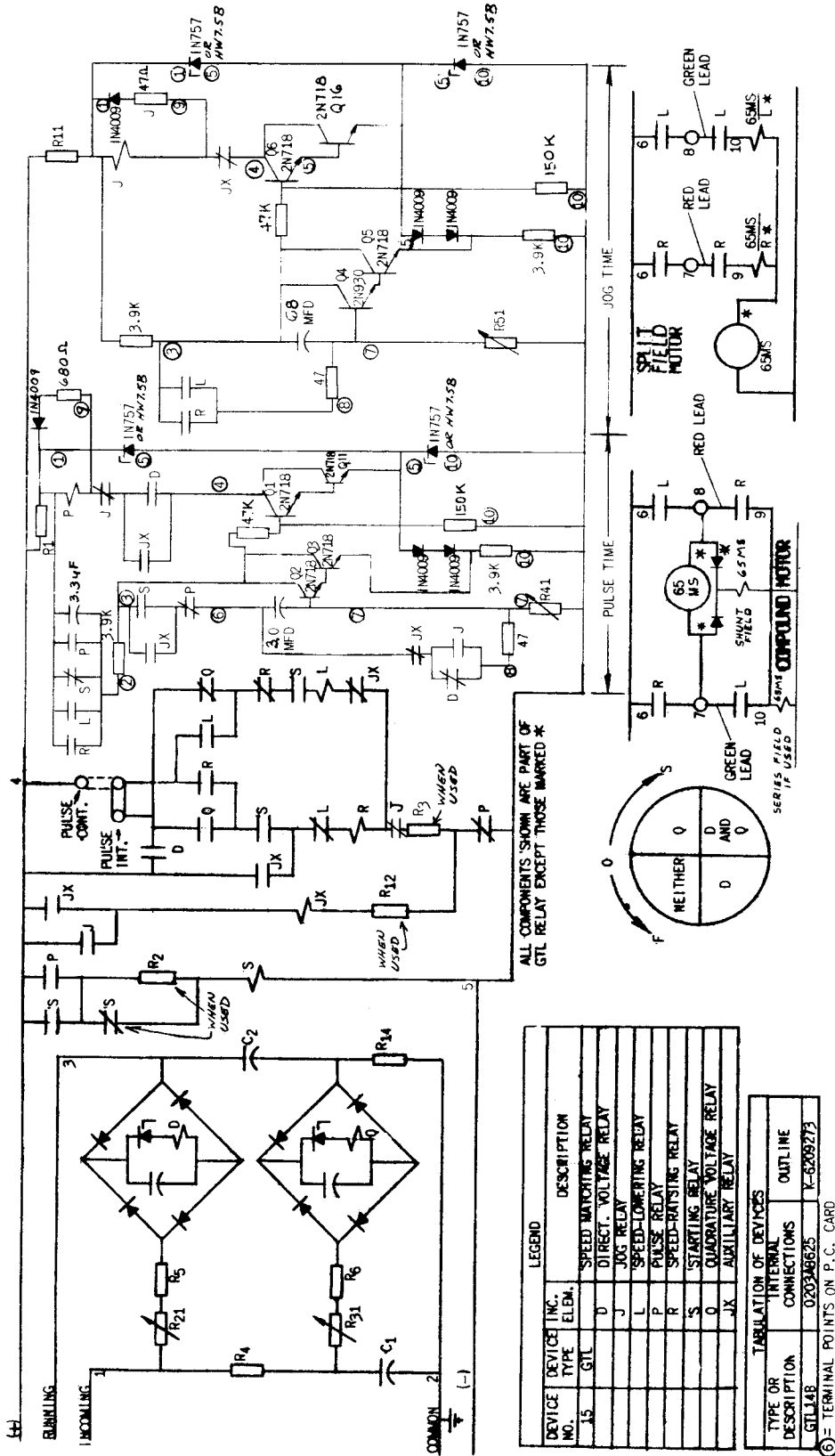


Fig. 3. (0137B9687-5) Typical External Connections Diagram for the GTL14B Relay

***Protection and Control
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