



INSTRUCTIONS

GEK-24973A

ANTI-PLUGGING RELAY PANEL

CARD ELEMENTARY & PANEL DIAGRAM —

36C764169AD

36C764898AA

REFER TO THE DRIVE SYSTEM INSTRUCTIONS AND ELEMENTARY DIAGRAMS FOR DESCRIPTIONS, ADJUSTMENTS AND ON—CARD JUMPER CONNECTIONS.

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 General Electric Company.

GENERAL  **ELECTRIC**

ANTI-PLUGGING RELAY PANEL

General

The anti-plugging relay, APR, is normally used in conjunction with dynamic braking and/or contactor reversing of a motor armature to assure that the dynamic braking contactor and/or armature reversing contactors interrupt only low voltage and current.

The APR relay panel assembly containing the APR relay and its electronic control, APC, is normally mounted in the modification module, MDM. The APC is a printed circuit assembly which is mounted on the APR panel.

Function

The APR relay will be energized (picked up) while the drive is operating. After a STOP command is initiated the APR relay will de-energize (drop out) when the motor armature voltage is reduced to a preset low level. The APR relay contacts are connected in the magnetic control circuits to permit operation of the armature reversing contactors and/or re-starting of the drive only with the APR relay de-energized.

The drop out level of the APR relay is adjustable from 8% to 40% of rated armature voltage by the APR potentiometer on the APC card. Normally, the APR potentiometer should be turned fully CCW for a minimum drop out level.

Description of Operation

The APR relay is controlled by the MAC, CEMF and DP2 signals.

The MAC and CEMF signals are generated on the main control card, MCC, while the DP2 signal is generated on the diagnostic card, DGC.

When a START command is initiated the MAC signal changes from zero to -20V. After a time delay of about 25 milliseconds the TPA test point voltage on the APC card will switch negative to energize the APR relay.

The CEMF signal is proportional to the motor speed and will change from zero to -5V as the motor armature voltage increases from zero to rated voltage. While the motor is running the CEMF signal will latch in the APR relay.

When a STOP command is initiated the MAC signal will return to zero voltage, but the APR relay will be kept energized by the CEMF signal. When the CEMF signal level is reduced to the reference level set by the APR potentiometer the TPA voltage again switches positive and the APR relay drops out.

If the diagnostic option is used, the DP2 signal switches positive in the DIAG. STATIC mode to pick up the APR relay.

NOTE

DO NOT SET THE APR POTENTIOMETER PAST MID-POSITION

36C764169AD

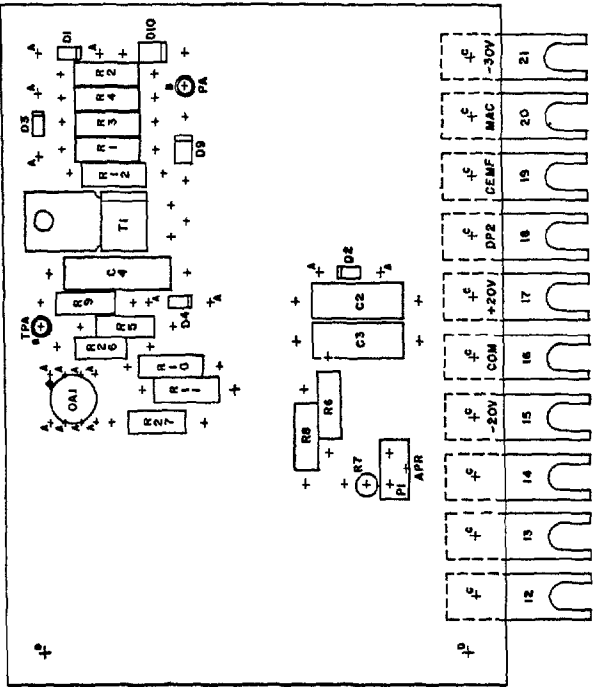
GENERAL ELECTRIC

TITLE PRINTED CIRCUIT DIAGRAM
ANTI-PLUGGING CARD
FIRST MADE FOR STANDARD LINE
1932X33AGG02

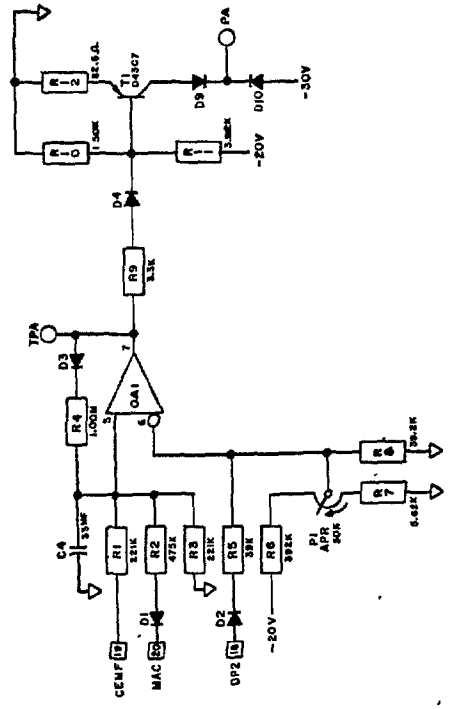
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING -
APPLIED PRACTICES SURFACES
718A.515

HOLE TABULATION
ALL HOLES .040 DIA.
EXCEPT THE HOLES
TABULATED BELOW
A .032
B .070
C .128
D .157

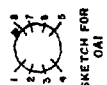
NOTE
CARD SIZE - 4.250" X 3.250" X .003



SCHEMATIC DIAGRAM



OP AMP LEAD SKETCH
(TOP VIEW)



TRANSISTOR LEAD SKETCH
(TOP VIEW)



SCALE	ETCHED CIRCUIT BOARD DIM	SPACE UNIT REQUIREMENT
2X	36A58033AGG04	FRONT BACK

REV	DATE	BY	CHKD	APP'D	DESCRIPTION
1	10/1/64	J. J. ...	J. J. ...	J. J.

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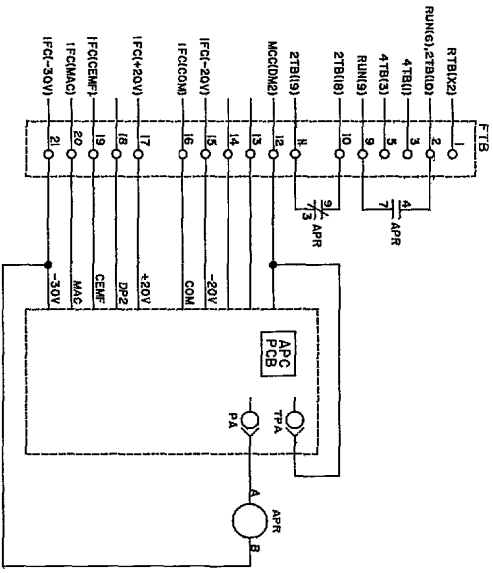
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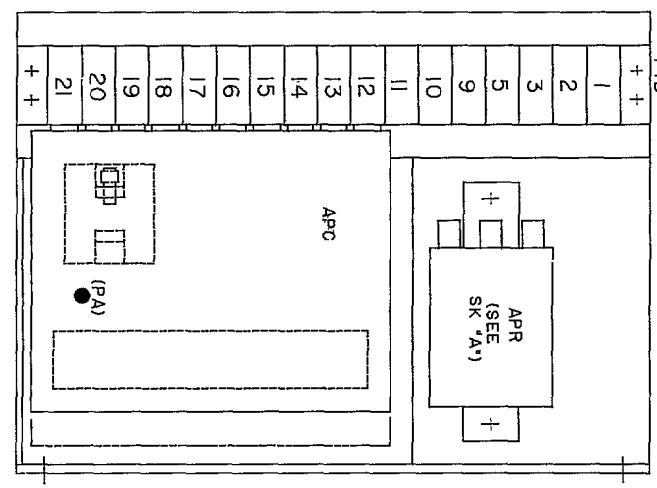
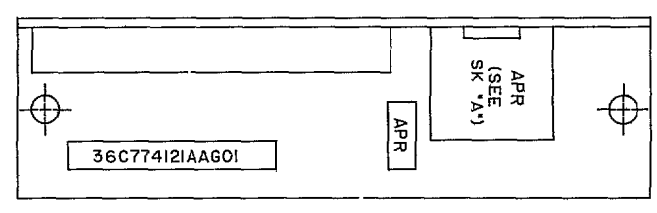
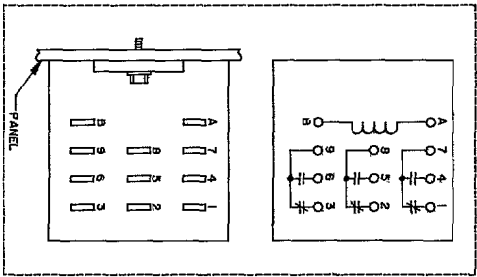
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TITLE ASM. DIAGRAM
 ANTI-PLUGGING RELAY PANEL
 FIRST MADE FOR VALUTROL
 POF ON 36C774121AAG01



SKETCH 'A'



REVNO	REVNO
0	

WIRE TABLE

#20 WHITE

FTB(X) APR(X)
 FTB(X) APR(X)
 FTB(X) APR(X)
 FTB(X) APR(X)
 FTB(X) APR(X)
 FTB(X) APR(X)
 FTB(X) APR(X)

REVISIONS

REVNO	REVNO
0	

PRINTS TO

PRINTS TO
36C764898AA

No. 36C764898AA
 drawing without the specific approval
 of the Sales Office Engineering Section

MADE BY: *W. J. ...*
 ISSUED: *...*
 APPROVED: *...*
 SPEED VARIATOR PROJ. DIV. 36C764898AA
 ERIE, PA. LOCATION CONF. SH. NO. 1