



INSTRUCTIONS

GEK-24946C

SIGNAL LEVEL DETECTOR

193X277ACG01, G02

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

INSTRUCTION

SIGNAL LEVEL DETECTOR, 193X277ACG01, G02

1.0 GENERAL

This instruction provides basic information regarding the subject card. Refer to the system elementary diagrams for information relating to the overall system operation.

2.0 DESCRIPTION

(Test point and tab references are made with respect to the G01 card and channel A of the G02 card only).

2.01 This card provides a relay operation and indication when the input voltage exceeds a preset positive and/or negative level.

2.02 Two card versions are available:

- G01: one relay channel
- G02: two identical relay channels

2.03 The input voltage level at tab 22 to produce a relay pick-up can be adjusted by the "level adj." potentiometer for a voltage range of .1V to 10V measured at test post "TP1." The pick-up level is fixed at $10V \pm 1.5V$ measured at "TP2." The input voltage at tab 22 should not exceed $\pm 40V$.

2.04 The card may be connected for pick-up at either a positive input, a negative input or both:
Positive polarization: Standard
Negative polarization: Connect tab 19 to tab 24.
Non-polarized: Connect tab 19 to tab 21.

2.05 The dropout level is approximately 90% of the pick-up level. By connecting tab 20 to tab 31 (+20V) the dropout level can be adjusted with the "hysteresis" potentiometer for a dropout level from 90% to 98% of the pick-up level.

2.06 The RC time constant of the input filter can be reduced from 20 to 2 milliseconds by connecting tab 23 to tab 22. Additional filtering can be obtained by connecting a capacitor between tab 23 and common (tab 15).

CAUTION

TO AVOID RELAY CHATTERING IT IS ESSENTIAL THAT THE PEAK—TO—PEAK RIPPLE VOLTAGE MEASURED AT "TP2" AT THE PICK—UP LEVEL IS LESS THAN THE HYSTERESIS VOLTAGE.

2.07 The pilot duty rating of the relay interlocks are .3A holding and 1.5A inrush at 115VAC.

3.0 ADJUSTMENTS

3.01 Apply the desired pick-up voltage level at tab 22. Turn the "Level Adj." pot CCW until the relay picks up. Check reverse polarity for non-polarized operation.

3.02 If less than the standard 10% hysteresis is required turn the "hysteresis" pot CW for maximum hysteresis with tab 20 connected to +20V (tab 31). Repeat step 3.01. Reduce the input voltage at tab 22 to the desired dropout level. Turn the "hysteresis" pot CCW until the relay drops out. Increase input filtering to avoid relay chattering if necessary.

4.0 TROUBLESHOOTING

4.01 Check for:

- a) Proper input connections.
- b) Proper polarity jumpers if required.
- c) Proper adjustments as described above.
- d) Sufficient filtering at TP2.

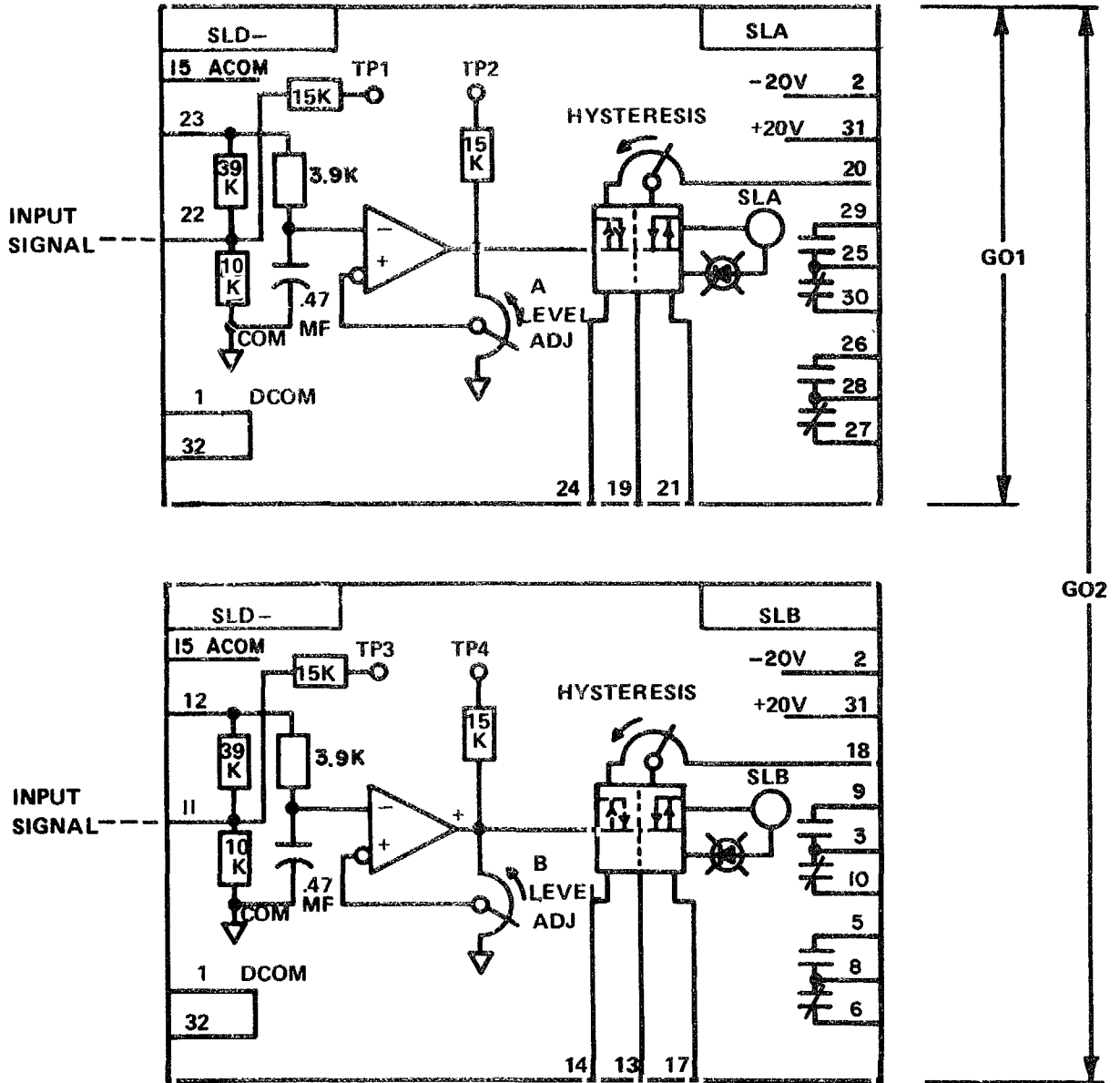
4.02 Check for actual operation of the relay interlocks.

4.03 If card failures are experienced, check for:

- a) Excessive voltage (above $\pm 40V$) at tab 22.
- b) Excessive relay interlock duty.
- c) Excessive voltage transients on relay interlock wires. If an interlock is used in another relay coil circuit, the coil should be suppressed. Long wire runs to the relay interlocks should be avoided.

FUNCTIONAL BLOCK DIAGRAM

SIGNAL LEVEL DETECTOR



UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING—

FACTORY	+	+	+
TELEPHONE	+	+	+
APPLIED PRACTICES	✓		
SURFACES			
FINISHES			

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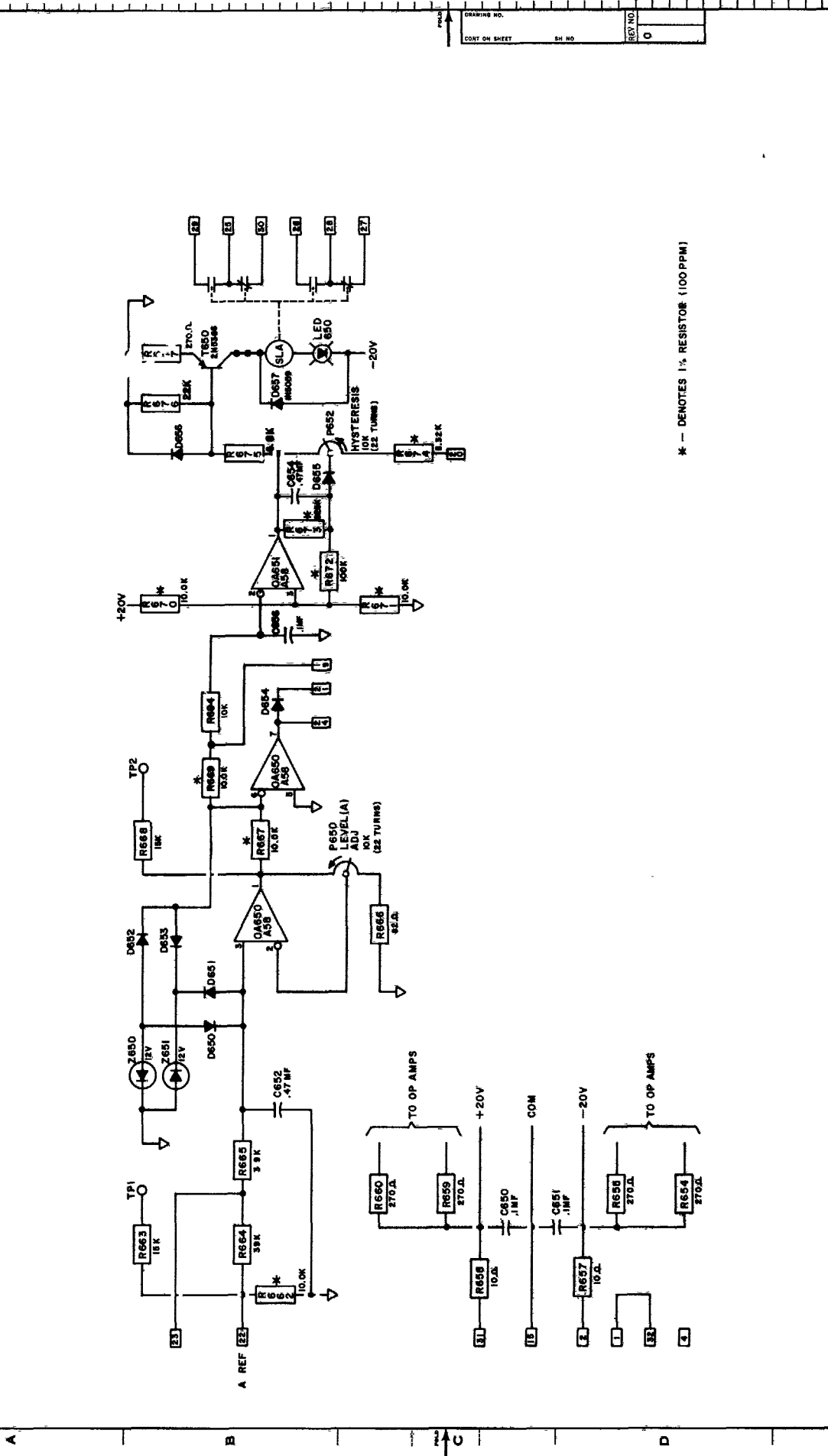
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* - DENOTES 1% RESISTOR (100 PPM)

ELEMENTARY DIAGRAM 193X277ACG01

PRINTS TO

5801M	3/18/61
5812B/W	TE(90)
5812B/W	TE(90)
AWB/W	
3000D	
JAC/D	

REVISIONS

NO.	DATE	DESCRIPTION
1	05-15-1977	REVISED TO ADD 1% RESISTORS
2	01-10-1978	REVISED TO ADD 1% RESISTORS

MADE BY: *[Signature]*
 CHECKED BY: *[Signature]*
 APPROVED BY: *[Signature]*
 SPEED VARIATOR PROD. DIV. OF
 ERIE, PA. USA

36C764132AC
 CONT. OF SHEET 2
 SHEET NO. 1

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UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING -

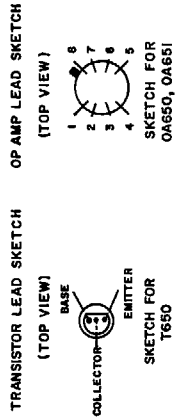
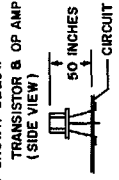
APPLIER PRACTICES	710AS15	+	-	+	-
SURFACES	✓				
PLATING					
ETCHING					
DRILLING					
TESTING					

HOLE TABULATION

ALL HOLES 0.40 DIA. EXCEPT THE HOLES TABULATED BELOW

LOC.	DIA.	QUAN.
A	.157	2
B	.032	30
C	.052	8
D	.081	2

- NOTES
- INDICATED TAB NUMBERS CORRESPOND TO MATCHING RECEPTACLE NUMBERS
 - CROSS HATCHED TABS INDICATES TABS USED.
 - CARD SIZE, 5.500±.000 X 5.180±.002
 - ALL TRANSISTORS & OP AMPS SHALL BE MOUNTED TO A .50 INCH MAXIMUM ABOVE THE CARD SURFACE AS SHOWN BELOW



GROUP KEY LOCATIONS

GROUP	KEY LOCATIONS
601	24-25 12-13 6-7

PRINTS TO

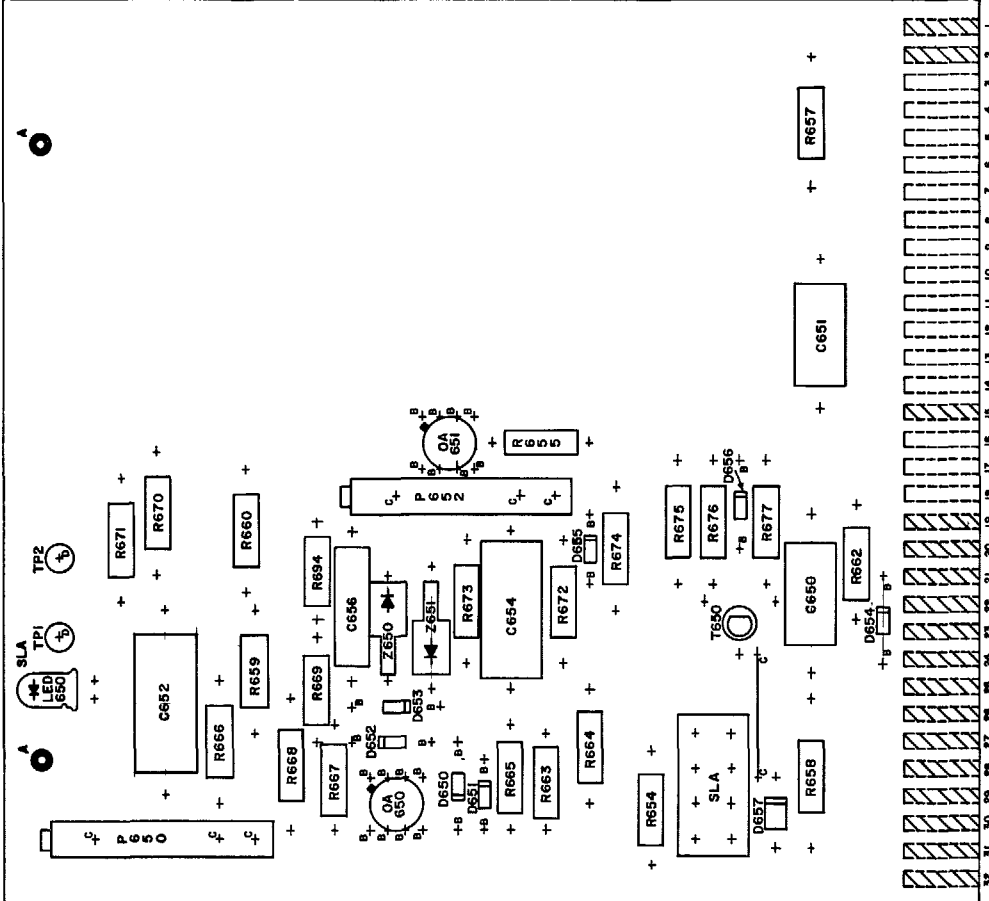
REV. NO.	DATE	DESCRIPTION
0		

REVISIONS

2X	36A35383AB004	SCALE BOARD DWG.	FRONT	BACK
			SPACE UNIT	REQUIREMENT

PRINTS TO

5B10JM	5A10W
5R20BW	7S10G
5L121BW	
AK61W	
5K10G	
JA10G	



SEE NOTE 102

CARD DIAGRAM 193X277ACG01

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING -
APPLIED PRACTICES SURFACES FINISHES DIMENSIONS OR MACHINED DIMENSIONS

APPLIED PRACTICES	SURFACES	FINISHES	DIMENSIONS	OR MACHINED DIMENSIONS
✓				

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APPLIED PRACTICES	SURFACES	FINISHES	DIMENSIONS	OR MACHINED DIMENSIONS
✓				

6

APPLIED PRACTICES	SURFACES	FINISHES	DIMENSIONS	OR MACHINED DIMENSIONS
✓				

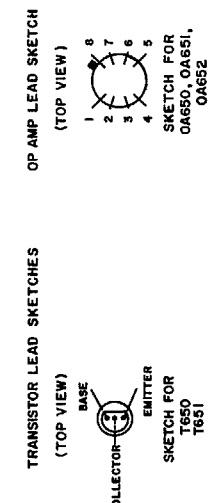
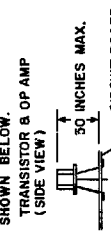
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APPLIED PRACTICES	SURFACES	FINISHES	DIMENSIONS	OR MACHINED DIMENSIONS
✓				

HOLE TABULATION
ALL HOLES Ø40 DIA EXCEPT THE HOLES TABULATED BELOW

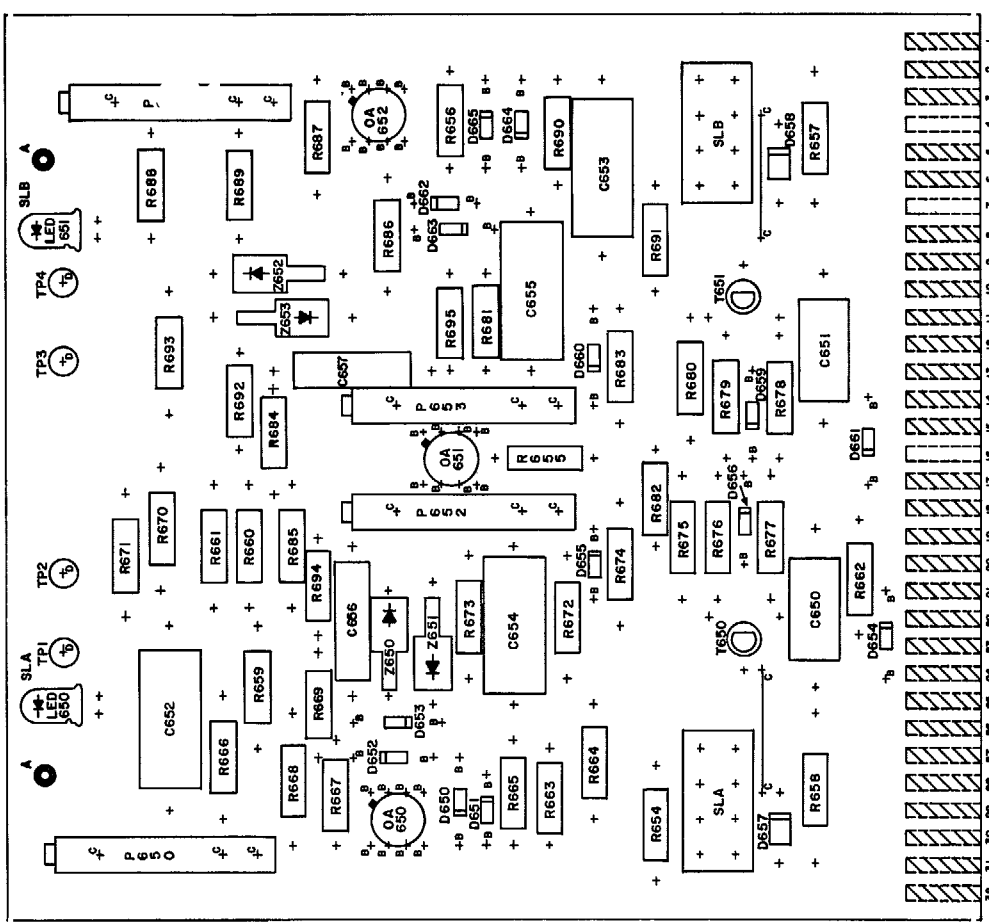
LOC.	DIA.	QUAN.
A	.157	2
B	.032	52
C	.052	16
D	.081	4

- NOTES**
- INDICATED TAB NUMBERS CORRESPOND TO MATCHING RECEPACLE NUMBERS
 - CROSS HATCHED TABS INDICATES TABS USED.
 - CARD SIZE, 5.000" X 6.130" X .002
 - ALL TRANSISTORS & OP AMPS SHALL BE MOUNTED TO A .50 INCH MAXIMUM ABOVE THE CARD SURFACE AS SHOWN BELOW.



GROUP KEY LOCATIONS

GROUP	KEY LOCATIONS
602	30-31 24-25 12-13 6-7



SEE NOTE 182

PRINTS TO

2X	36A353835AB004	FRONT	SCALE
	BOARD	DWG.	REVISIONS
			5B(10W)
			5B(210W)
			5L(210W)
			5A(10W)
			5D(20)
			5A(20)

No revisions are to be made in this drawing without the approval of the Development Engineering Section of the Signal Division

**GENERAL ELECTRIC COMPANY
SPEED VARIATOR PRODUCTS OPERATION
ERIE, PENNSYLVANIA 16531**

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