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TITLE

TEST INSTRUCTIONS
GROUND DETECTOR AND ALARM III

FIRST MADE FOR 278A3136

REVISIONS

1.0 SCOPE

This document establishes performance requirements and recommended tests for the 278A3136 Ground Detector and Alarm III Printed Wiring Board. This instruction will check analog transfer functions.

2.0 TEST EQUIPMENT

Oscilloscope

Pulse Generator

Resistor 40K Ohm $\pm 10\%$, $\frac{1}{4}$ Watt (minimum)

Resistor 10K Ohm $\pm 10\%$, $\frac{1}{4}$ Watt (minimum)

3.0 POWER SUPPLY REQUIREMENTS AND PIN CONNECTIONS

NOMINAL VOLTAGE	RANGE	PERCENT REGULATION	MAXIMUM VOLTAGE	CONNECTIONS
*P24	$\pm 10\%$	4	28	Pins 7 and 8
*N24	-	-	-	Pins 9 and 10
COM	-	-	-	Pins 3 and 4
10VDC	0-10V	1	15	Signal voltage to be connected as required during test

*Isolated 24VDC Supply

4.0 SETUP AND INITIAL LOADING

Open SW1 (NEG ALO) and SW2 (POS ALO). SW1 and SW2 are open with the toggle on the switch pressed to the downward position.

Connect load resistors and jumpers as required under Section 6.4 of this instruction.

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6.0 TEST PROCEDURE (Cont'd)

6.4 Analog Tests (Cont'd)

6. Connect a 40K ohm \pm 10% resistor from N24 to Com. Verify that NEG GND LED flashes on and off 1-3 times per second. Remove the 40K ohm resistor and verify that the LED continues to flash. Push the GND reset pushbutton (PB1) and reset the circuit.
7. Close NEG ALO SW and re-connect the 40K ohm \pm 10% resistor from N24 to COM. Verify that NEG GND LED Flashes on and off. Verify that pin 21 is at 23 \pm 1VDC. Open NEG ALO switch (SW1) and disconnect the 40K ohm resistor. Push the GND reset pushbutton (PB1) and reset the circuit.
8. Connect a variable DC power supply from pin 17 (+) to N24 (-). Set the power supply to 0VDC. Jumper pins 19 and 20 to P24. Connect a 10K ohm \pm 10% resistor from pin 18 to P24. Verify that TP7 is 1V \pm 1VDC. Verify that TP8 is 2V \pm 1VDC. (TP7 & TP8 may have low level pulses). Raise the power supply voltage to 10.0V \pm 0.1VDC. Verify that TP7 is 23V \pm 1VDC. Verify that TP8 oscillates 1-3 times per second from 1V \pm 1VDC to 23V \pm 1VDC. Remove the 10K ohm resistor, jumpers and variable power supply.
9. Connect a variable DC power supply from pin 11 (+) to N24. Set the power supply to 0 volts. Jumper pins 15 and 16 to P24. Connect a 10K ohm \pm 10% resistor from pin 13 to P24. Verify that TP9 is 1V \pm 1VDC. Verify that TP10 is 2V \pm 1VDC. (TP9 & TP10 may have low level pulses). Raise the power supply voltage to 10V \pm 0.1VDC. Verify that TP9 is 23V \pm 1VDC. Verify that TP10 oscillates 1-3 times per second from 1V \pm 1VDC to 23V \pm 1VDC. Remove the 10K ohm resistor, jumpers and variable power supply.

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REV NO.

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CONT ON SHEET 6

SH NO. 5

TITLE

TEST INSTRUCTIONS

GROUND DETECTOR AND ALARM III

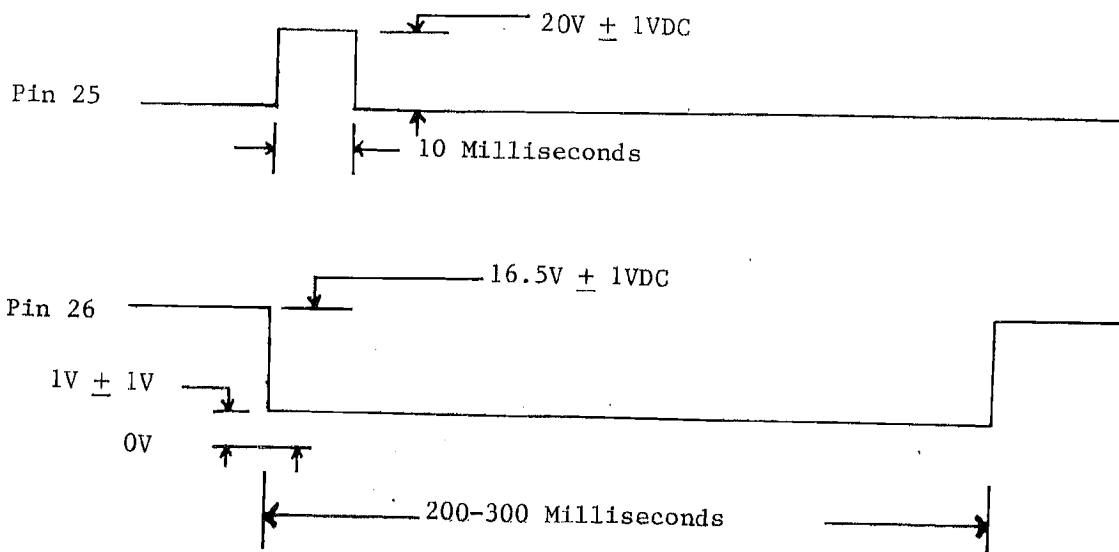
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REVISIONS

6.0 TEST PROCEDURE (Cont'd)

6.4 Analog Tests (Cont'd)

10. Connect a variable DC power supply from pin 21 (+) to N24. Set the power supply to 0VDC. Jumper pins 23 and 24 to P24. Connect a 10K ohm $\pm 10\%$ resistor from pin 22 to P24. Verify that TP5 is $1V \pm 1VDC$. Verify that TP6 is $2V \pm 1VDC$. Raise the power supply voltage to $10V \pm 0.1VDC$. Verify that TP5 is $23V \pm 1VDC$. Verify that TP6 oscillates 1-3 times per second from $1V \pm 1VDC$ to $23V \pm 1VDC$. Remove the 10K ohm resistor, jumpers and variable power supply.
11. Jumper pin 26 thru a 10K ohm $\pm 10\%$ resistor to P24. Push the MCA RESET pushbutton (PB2) on the faceplate and verify that the MCA LED is on. Verify that pin 26 is $16.5 \pm 1VDC$.
12. Inject a $20V \pm 1VDC$ pulse from pin 25 (+) to N24. This pulse should last 10 milliseconds ± 1 millisecond. Verify that pin 26 goes to $1V \pm 1VDC$ for 200-300 milliseconds. Verify that pin 27 is oscillating 1-3 times per second between $1V \pm 1VDC$ and $23V \pm 1VDC$. (Pin 27 should remain in this state until reset by PB2.)



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Test Instructions

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GROUND DETECTOR AND ALARM III

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FIRST MADE FOR 278A3136

REVISIONS

6.0 TEST PROCEDURE (Cont'd)

6.4 Analog Tests (Cont'd)

13. Push the MCA Reset pushbutton to reset the MCA LED.
14. Remove all jumpers and external resistors temporarily interrupt the 24 power. Reapply the 24 volt power and verify that the MCA LED is flashing on and off 1-3 times per second. Jumper pin 28 to pin 7 and note that the MCH LED stops flashing and remains on.
15. Remove all jumpers and power.

END OF TEST

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