GENERAL ELECTRIC

68A9992488
CONT ON SHEET 2 SH NO. 1

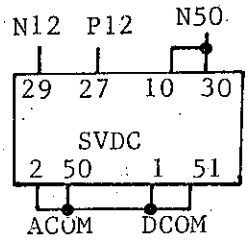
REV NO.	TITLE
68A9992488	Test Specifications VIBRATION DETECTOR
CONT ON SHEET 2 SH NO. 1	FIRST MADE FOR IC3600SVDC1

REVISIONS

2) SBH 8-29-78 BU941E13

SPECIAL TEST EQUIPMENT

1) Dynamics Micro Voltmeter
2) Wavetek
3) Decade Resistor Box



GENERAL TEST SPECIFICATIONS

Quality control must test the Vibration Detector card to verify that the fault and vibration circuits are working properly. Connect power as shown above.

SPECIFIC TESTS

1. Load fault flip flop (pins 13 and 14) and vibration flip flop (pins 48 and 49) with 6 - 20KC loads each. Connect FLT Pin 4 to VIB Pin 7. Connect decade resistor box set for 7.5K Ohm ± 30 Ohm between Pin 4 (FLT) and ACOM.

2. Apply ± 12 Volts. Verify that light stays Off when power is applied. Fault and vibration flip flops should be in cleared state. Verify that Pins 49 and 14 are Logic 1 (5.7 to 7.4V), verify that Pins 48 and 13 are Logic 0 (less than .3V).

3. OPEN AND SHORT CIRCUIT DETECTION

   A) Increase decade resistance until fault flip flop switches and light comes "On" for open circuit test. Pin 13 should be 5.7 to 7.4 Volts and Pin 14 should be less than .3 Volts. Verify that resistance is between 30K and 60K Ohm. Verify that FLT (4) to COM is 6.2 to 7.5 Volts.

   B) Return resistance to 7.5K Ohm. Push RESET and verify that fault flip flop clears and light goes Out.

   C) Decrease resistance until flip flop again latches and light comes on for short circuit test. Verify that this occurs when resistance is between 1.5K and 4.5K Ohm. Verify that FLT to COM measures +0.4 to 1 Volts. Return to 7.5K Ohm. Reset by connecting RST (20) to P12 (27) and verify that light goes Out.

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RA Salibrici 780821		DRIVE SYSTEMS	68A9992488
ISSUED 9-1-78		Salem, VA. U.S.A. LOCATION	CONT ON SHEET 2 SH NO. 1

RE

CODE IDENT NO

FF-803 WF (7-77)
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GENERAL ELECTRIC

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VIBRATION DETECTOR
FIRST MADE FOR IC3600SVDC1

REVISIONS
2)SBH 8-29-78 B494/E3

3. OPEN AND SHORT CIRCUIT DETECTION (Continued)

D) Connect Pin 9 to Pin 27. Verify that open circuit now occurs when resistance is between .5K Ohm and 1K Ohm. Short circuit should occur when resistance is between 40 and 120 Ohms. Return to 250 Ohm. Reset by connecting RS1 (18) to DCOM, and verify light goes Out.

E) Remove Pin 9 to Pin 27 connection. Connect Pin 6 to Pin 27. Verify that open circuit now occurs when resistance is 2.1K to 2.9K Ohms. Short circuit occurs between 135 and 350 Ohms. Remove Pin 6 to Pin 27 connection.

4. Remove decade resistor box. Connect circuit of Figure 1 to vibration and FLT. Reset flip flop, verify that light goes out. Wavetek should be set to sine wave, 100 CPS, Zero volts Out.

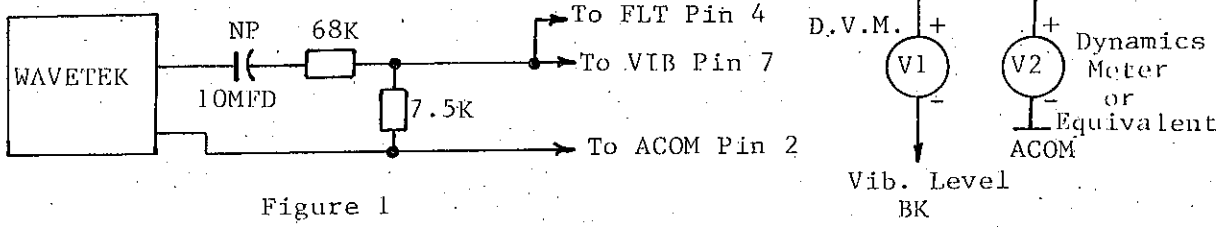

Figure 1

5. AMPLIFIER GAIN CHECK

Connect A-C coupled scope between VIB. Pin 7 and COM. Connect dynamics meter from CLR Pin 38 to COM. Connect D.V.M. between vibration level + and −. Adjust R1 full C.W.

A) With wavetek set to zero, verify that dynamics meter reads less than ± 100 MV.

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REV NO.

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REVISIONS

D 58H 8-29-78 BU4941E3
2 BU11604AS 3/12/79 MAC

5. AMPLIFIER GAIN CHECK (Continued)

B) Set wavetek so that scope input measures:

100 MV PP Verify V1 and V2 read .58V ± .15V

400 MV PP Verify V1 and V2 read 2.5V ± .3V.

1.20V PP Verify V1 and V2 read 7.2V - 8.5.

400 MV PP Verify V1 and V2 read 5.65V ± .6V with 15 to 2 jumper.

NOTE - There are long time delays involved in measuring V1 and V2. Allow at least 2 minutes for readings to stabilize.

6. AMPLIFIER FREQUENCY CHECK (Remove 15 to 2 jumper)

A) With set up as in 5 (B), adjust wavetek for 400 MV PP and maintain for all frequencies during Step 6. Verify V1 and V2 read 2.7 Volts as before. Now set frequency to 400 CPS. Verify output (V2) drops less than 10%. Set Frequency to 40 CPS, verify output increases less than 10% from the 100 CPS reading.

B) Set Frequency to 10 CPS. Verify output changes less than ± 10%. Set frequency to 3000 CPS. Verify output drops by 30 to 50% from 100 CPS reading.

C) Reduce wavetek to zero output. Set Frequency at 100 CPS. Adjust R1 so that Set Point (12) measures 5.0 Volts, ± .05V.

7. COMPARATOR GAIN

A) Connect the dynamics meter with its negative lead on CLR Pin 38 and its positive lead on set point Pin 12. Slowly increase wavetek voltage until excess vibration latch circuit trips and light comes On. Verify that this occurs when the dynamics meter reads less than ± 50MV. The D.V.M. meter should read 5 Volts, ± 0.1V.

B) Verify that Pin 48 (Trip) is Logic 1 (5.7 to 7.4 Volts) and Pin 49 is a Logic 0 (less than .3 Volts).

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8. ADJUSTMENT RANGE

A) Remove power. Reduce wavetek output to zero volts.

B) Apply power. Latch should be reset and light Out with power On. Adjust R1 so that Set Point reads 1.25V.

C) Adjust R1 so that Set Point reads 8 Volts.

D) Adjust R1 so Set Point reads 5 Volts as before. Remove power.

9. LOAD REGULATION

A) Connect dynamics meter between CLR Pin 38 and ACOM. Connect a 4K Ohm resistor ±1% between vibration level + and -.

B) Apply power and increase wavetek until CLR reads 5.0 Volts. Verify that voltage across 4K Ohm is 4.8 to 5.2 Volts.

C) Decrease wavetek to zero. Reset.

10. OPEN BUS DETECTION

A) Verify light is Off.

B) Open the -12 Volt connection. Light should come On. Reconnect -12V, momentarily short (4) to ACOM and reset. Light goes Off.

C) Open the ACOM connection, light should come On. Reconnect ACOM, momentarily short (4) to ACOM and reset. Light goes Off. Remove all power.

11. NEGATIVE ZENER BIAS

A) Connect N50 to Pin 30, then reapply power. Verify that Pin 11, NVZ is -12 Volts ± 5%. Also verify ohmic value of R86, R87, and R88.

12. HOLDING CAPACITOR AND DISCHARGE CIRCUIT (C12, Q16)

A) Verify light is Out and ALARM (13) is low. Trip circuit by applying wavetek signal at 100 HZ and slowly increasing amplitude. TRIP (48) is Logic 1 (5.7V to 7.4V), CLR (38) equals Pin 12 + 50 MV.

B) Remove wavetek signal (Do not remove 7.5K) and then quickly open FLT (4). CLR (38) should discharge towards 0V; CLR greater than 1.2V at 50 milliseconds from the time FLT (4) was opened. CLR (38) less than 0.2V in 0.4 seconds.

This completes the test.

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