GENERAL ELECTRIC

REV NO.	TITLE	2 7 8 A 3 1 4 8
		CONT ON SHEET 2 SH NO. 1
CONT ON SHEET SH NO.	TEST INSTRUCTIONS	
	FIRST MADE FOR 1589K29G700	

REVISIONS

STANDING INSTRUCTIONS

FOR

PRINTED CIRCUIT BOARD

1589K29G700

DUAL ALARM

FOR

T.S.I.

Distribution:

1 QC Eng.
1 QC Test
1 Engineering

DL13
3EL1
1RA2
4QA3
4EK1

PRINTS TO

MADE BY	APPROVALS	DIV OR DEPT.	2 7 8 A 3 1 4 8
W.Lunsford 790813		DRIVE SYSTEMS	
ISSUED 8/13/79	WLT	LOCATION SALEM, VA.	CONT ON SHEET 2 SH NO. 1

FF-803 WF (11-77)
PRINTED IN U.S.A.

CODE IDENT NO.

I. Test Equipment Required

A. Printed Circuit Board Test Stand - 440931365

B. Adaptor 9300K56

C. Cable - Power Supply

D. Patchboard PB-4.

E. Drawings

44B337380 0	D3069K54	Elementary
	~~1589K29G700~~	~~Assembly~~
	440931365	Test Fixture

II. Wire Check of Printed Circuit Board (PCB)

A. Visual

1. Resistors - Jumpers per D3069K54

2. C7 and C8 0.01 mfd 200 volt

B. Resistance

1.	Pin 14	to	Pin 15	0 ohms
2.	Pin S	to	Orange test jack	0 ohms
3.	Pin L	to	White test jack	0 ohms
04.	Pin V	to	Brown test jack	20 ohms or greater
05.	Pin A	to	Blue test jack	20 ohms or greater

III. Setup and Connections

A. Connect a DC digital voltmeter to "BJ-1".

B. Turn all switches to OFF or Normal on the U.T.

C. Turn all switches to OFF or Normal and all variacs to zero on the UPS.

D. Connect adaptor 9300K56 to "PL-1" on the U.T.

E. Connect the power supply cable to access plug on the U.P.S. and to "PL-3" on the U.T. Also connect leads to the D.C. power supplies as marked.

F. Install 28 volt, 0.04A lamps in "L5", "L6", "L10", and "L11" sockets on the U.T. Install 12-14 volt .04A lamps in "L1" and "L18".

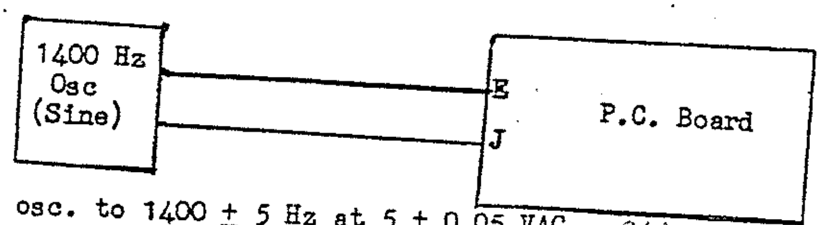
G. Set R17 (lower set point) to zero on PCB. Set R18 (upper set point) to zero on PCB. CONTROLS

DL13
3EL1
1RA2
4QA3
4EK1

PRINTS TO

REVISIONS

H. Preliminary Check (Note: PC Board must be placed such that mercury relays are in position marked.)



1. Set osc. to 1400 ± 5 Hz at 5 ± 0.05 VAC. .966
   Voltage across R15 = ~~1.0 ± 0.1 VAC~~ .71 to 1.19 VAC ②
   Voltage across C3 = ~~4.95 ± 0.2 VAC~~ 3.67 to 6.13 VAC ② 4.93

2. Repeat with connections to pins H and C. .966
   Voltage across R13 = ~~1.0 ± 0.1 VAC~~ .71 to 1.19 VAC ②
   Voltage across C1 = ~~4.95 ± 0.2 VAC~~ 3.67 to 6.13 VAC ② 4.93

IV. Electrical Test (Note: PC Board must be placed such that mercury relays are in position marked.)

A. Close "SW-1" and depress "LPB-1". Increase PS-1 to 24 ± 1 volt DC at "BJ-1".
   NOTE: Should it become necessary to remove all power from the P.C.B., open "SW-1".

B. Depress "LPB-2" and increase PS-2 to 15 ± 0.01 VDC at "BJ-1". Red test jack (+) to black test jack (–) on P.C.B. = +15 ± 0.02 VDC. ③

C. Depress "LPB-3" and increase PS-3 to 15 ± 0.01 VDC at "BJ-1". Green test jack (+) to black test jack (–) on PCB = –15 ± 0.02 VDC. ③

CONNECTS M + R TO +15 VDC

D. Close "SW-26". Repeat III H with oscillator connections to pins F and J
   R16 = ~~1.0 ± 0.1 VAC~~ .71 to 1.19 VAC ②
   C4 = ~~4.95 ± 0.2 VAC~~ 3.67 to 6.13 VAC ②
   Connect Osc. output to pins D and H.
   R14 = ~~1.0 ± 0.1 VAC~~ .71 to 1.19 VAC ②
   C2 = ~~4.95 ± 0.2 VAC~~ 3.67 to 6.13 VAC ②
   ③ Remove oscillator

METER [illegible] PIN A 2 PIN V 20

E. Open "SW-26". Place "RS-2" to positions 1, then 2. Each shall read 0.5 VDC or less at "BJ-13". Close "SW-14". Close "SW-13". Place "RS-2" to positions 1, then 2. Each shall read 15 ± 0.5 VDC. Return "RS-2" to Off. +15 to V, +15 V to [illegible]

F D CONNECTS L6 & L10 TO F AND D

F. Close "SW-6" and "SW-10" — No lights energized
   Close "SW-8" J TO +24 — "L6" shall be energized
   Close "SW-7" H TO +24 — "L6" and "L10" shall be energized
   Close "SW-9" and "SW-11" — "L6" and "L10" only are energized

E CONNECTS C Z S 4 L11 TO E AND C

DL13 | 3EL1 | 1RA2 | 4QA3 | 4EK1

+15
2RL PS4 TO + PIN R
- PIN N

G. Close "SW-2" and "SW-12". Depress "LPB-7" and increase PS-4 to 2.6 ± 0.1 VDC at "BJ-1" PIN R. "L1" A, "L6" F, and "L11" C shall be energized.

H. Slowly lower PS-4 voltage and note that "L1" and "L11" deenergize and "L10" P energizes at 2 ± 0.4 VDC at "BJ-1".

I. Set R17 to 100 on dial.

J. Increase PS-4 to 10.5 ± 0.4 VDC at "BJ-1". "L1", "L6", and "L11" shall be energized.

K. Lower PS-4 slowly until "L11" and "L1" deenergize and "L10" energizes. This shall occur at 10 ± 0.4 VDC at "BJ-1".

L. Set R17 to Alarm at correct value as determined by the Manufacturing Instructions. This value determined as follows:

Set Value = 2V + 16 (1st red band + amount inside red band) $\frac{V}{in.}$

Example 1st red band = 0.500"
To be set 0.160" inside red band

Set Value = 2V + 16 (0.200" + 0.05") $\frac{V}{in.}$
= 2V + 16 (.250) V
= 2V + 4V
= 6V ± 0.1

NOTE: If value is not specified on Manufacturing Instruction, use 0.145" for the sum of the two linear measurements.

Example Set Value = 2V + 16 (.145") $\frac{V}{in.}$
= 2V + 2.32V
= 4.32V ± 0.1

NOTE: If R&R and instructions or channel location are not indicated, set at 7.34 ± 0.1 VDC.

Lock the dial on R17 at the point where "L11" just energizes. Tag PC Board "Readjust as required".

M. Return PS-4 to zero.

PS4 + PIN M
- PIN N

N. Set R18 to zero on dial. Place SW-12 down. Depress "LPB-3". Adjust PS-4 to 1.5 ± 0.1 VDC at "BJ-1". METER M

DL13
3EL1
1RA2
4QA3
4EK1

PRINTS TO

O. Slowly increase PS-4 until "L5" and "L18" energize and "L6" deenergizes. This shall occur at 2.0 ± 0.4 VDC at "BJ-1".

P. Set PS-4 to 9.5 ± 0.1 VDC. Set R18 to 100 on dial.

Q. Slowly increase PS-4 until "L5" and "L18" energize and "L6" deenergizes. This shall occur at 10 ± 0.4 VDC at "BJ-1".

R. Set R18 to Alarm at correct value as determined by the Manufacturing Instructions. This value determined as follows:

Set Value = 2V + 16 (2nd red band - amount inside red band) $\frac{V}{in.}$

Example 2nd red band = 0.500"
To be set .78" inside red band

Set value = 2V + 16 (0.500" - 0.078") $\frac{V}{in.}$
= 2V + 16 (0.422) V
= 2V + 6.75
= 8.75 V ± 0.1

NOTE: If value is not specified in Manufacturing Instruction, use 7.34 ± 0.1 V as set point. Tag PCB "Readjust as required".

Lock the Dial on R18 at the point where "L5" just energizes.

S. Return PS-4 to zero and open SW-1. Then open or return to normal all remaining switches.

DL13
3EL1
1RA2
4QA3
4EK1

PRINTS TO