

<p>304A8473</p> <p>CONT ON SHEET 2 SH NO. 1</p>	<p style="text-align: center;">TEST INSTRUCTION</p> <p>FIRST MADE FOR 304A8471</p>																										
<p>I. TEST INSTRUCTIONS 304A8473</p> <hr/> <p>REF ELE.A 158C2474</p> <hr/> <p>II. SCOPE</p> <hr/> <p>THE FOLLOWING DESCRIBES THE SETUP AND TEST PROCEDURE FOR THE PWB 304A8471.</p> <hr/> <p>III. SPECIAL TEST EQUIPMENT</p> <hr/> <p>NONE</p> <hr/> <p>IV. POWER SUPPLY REQUIREMENTS</p> <hr/> <table style="width: 100%;"> <tr> <td>P15</td> <td>PINS 1,2</td> </tr> <tr> <td>N15</td> <td>PINS 5,6</td> </tr> <tr> <td>ACOM</td> <td>PINS 3,4</td> </tr> <tr> <td>P24</td> <td>PINS 7,8</td> </tr> <tr> <td>24COM</td> <td>PINS 9,10</td> </tr> </table> <p style="background-color: yellow; padding: 5px;">CONNECT ACOM TO 24COM FOR TEST.</p> <hr/> <p>V. INITIAL SETUP</p> <hr/> <p>1. CONNECT THE FOLLOWING RESISTORS BETWEEN THE POINTS INDICATED.</p> <table style="width: 100%;"> <thead> <tr> <th style="text-align: left;">RESISTOR</th> <th style="text-align: left;">FROM</th> <th style="text-align: left;">TO</th> </tr> </thead> <tbody> <tr> <td>562 OHM, 2 WATT</td> <td>P24</td> <td>23,24</td> </tr> <tr> <td>562 OHM, 2 WATT</td> <td>P24</td> <td>25,26</td> </tr> <tr> <td>22.1K, 1/4 WATT</td> <td>24COM</td> <td>21,22</td> </tr> <tr> <td>22.1K, 1/4 WATT</td> <td>24COM</td> <td>27,28</td> </tr> </tbody> </table> <hr/> <p>VI. DAUGHTER BOARD</p> <hr/> <p>NONE</p> <hr/> <p>VII. ELECTRICAL TEST</p> <hr/>		P15	PINS 1,2	N15	PINS 5,6	ACOM	PINS 3,4	P24	PINS 7,8	24COM	PINS 9,10	RESISTOR	FROM	TO	562 OHM, 2 WATT	P24	23,24	562 OHM, 2 WATT	P24	25,26	22.1K, 1/4 WATT	24COM	21,22	22.1K, 1/4 WATT	24COM	27,28	<p>REVISION</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
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<p>MADE BY R. E. VANDERPOOL</p> <p>ISSUED 7-18-83</p>	<p>APPROVALS</p> <p><i>REV</i></p> <p>7/26/83</p>	<p>GENERAL ELECTRIC CO.</p> <p>SALEM, VA.</p>	<p>DIV OR DEPT</p> <p>LOCATION</p> <p>304A8473</p> <p>CONT ON SHEET 2 SH NO. 1</p>																								

REV NO.	
304A8473	
CONT ON SHEET 3	SH NO. 2

TEST INSTRUCTION
FIRST MADE FOR 304A8471

REVISION

NOTES:

- * THIS TEST WILL REQUIRE MEASUREMENTS OF A TIME INTERVAL BETWEEN A CHANGE IN AN INPUT TO THE PWB AND SEVERAL PWB OUTPUTS. THE OUTPUTS IN THE ACTUAL SYSTEM WILL DRIVE RELAYS OR TRANSISTORS ON OTHER PWB'S. THE SIMULATED LOADS WILL BE CONNECTED IN PREPARATION FOR THESE TESTS.
 - * THE TIME INTERVALS WILL BE MEASURED FROM THE INSTANT 6TP CHANGES TO A SPECIFIED NEGATIVE VOLTAGE BY ADJUSTING THE VARIABLE VOLTAGE SUPPLY TO THE INSTANT THE OUTPUT VOLTAGE CHANGES. THESE TIME INTERVALS SHOULD BE MEASURED WITHIN AN ACCURACY OF +/- .5 SECONDS.
 - * ALL INPUTS AND MEASUREMENTS ARE WITH RESPECT TO ACOM (24COM) UNLESS OTHERWISE INDICATED.
 - * THE VARIABLE VOLTAGE SUPPLY THAT WILL BE APPLIED ON PINS 11,12 MUST NOT BE ALLOWED TO EXCEED +/- 15 VDC.
 - * FOR ALL OUTPUT MEASUREMENTS, A MEASUREMENT OF 24COM EQUALS 0 +/- 1 VDC, AND A MEASUREMENT OF P24 EQUALS +23 +/- 1 VDC.
 - * "ALARM" REFERS TO CR14 AND "BKTRTP" REFERS TO CR15.
1. SET UP AND APPLY POWER PER SECTIONS IV. AND V..
 2. CONNECT A VARIABLE VOLTAGE SUPPLY BETWEEN ACOM AND PINS 11,12 SO THAT PINS 11,12 CAN BE ADJUSTED TO A NEGATIVE VOLTAGE WITH RESPECT TO ACOM. INITIALLY SET THE SUPPLY SO THAT PINS 11,12 MEASURE 0 VOLTS.

NOTE: P/N 11+12 MUST MEASURE 0V

A. POT RANGE CHECKS AND SETTINGS

1. VERIFY THE VOLTAGE AT 3TP WITH R1 SET AS FOLLOWS:
 - FULLY CCW - .75 +/- .25 VDC
 - FULLY CW -3.5 +/- .5 VDC
 - SET R1 FOR -2.0 +/- .1 VDC
2. VERIFY THE VOLTAGE AT 5TP WITH R2 SET AS FOLLOWS:
 - FULLY CCW -2.75 +/- .25 VDC
 - FULLY CW -8.0 +/- .5 VDC
 - SET R2 FOR -7.0 +/- .3 VDC

**** ON THE FOLLOWING STEPS USE A 1X SHIELDED PROBE WHEN ****
 ***** MAKING MEASUREMENTS ON 7TP, 8TP, OR 9TP. *****

3. VERIFY THE FREQUENCY AT 9TP WITH R3 SET AS FOLLOWS:
 - (OUTPUT SHOULD BE A LOGIC SQUARE WAVE.)
 - FULLY CCW 450-700 HZ (2.2-1.4 MILLISECONDS)
 - FULLY CW 20-28.6 HZ (50-35 MILLISECONDS)
 - SET R3 FOR 125 +/- 2 HZ (8.0 +/- .1 MILLISECONDS)

ACOM
 TIED TO
 24COM
 TO
 GND

3EL1
DL13

PRINTS

MADE BY R. E. VANDERPOOL	APPROVALS REV 7/26/83	GENERAL ELECTRIC CO. SALEM, VA.	DIV OR DEPT. LOCATION	304A8473	DIV OR DEPT. LOCATION	CONT ON SHEET 3	SH NO. 2
ISSUED 7-18-83							CODE 100

GENERAL ELECTRIC

304A8473 4

SH NO. 3

DIV NO. 304A8473 CONT ON SHEET 4 SH NO. 3	<div style="text-align: center;">TEST INSTRUCTION</div> <div style="text-align: center;">FIRST MADE FOR 304A8471</div> <div style="text-align: center; color: red;">DR DELAY</div> <div style="text-align: center; color: red;">TRIP DELAY</div> <div style="text-align: right;">REVISION</div>																								
<p>4. VERIFY THE FREQUENCY AT 7TP WITH R4 SET AS FOLLOWS: (OUTPUT SHOULD BE A LOGIC SQUARE WAVE.) FULLY CCW 450-700 HZ (2.2-1.4 MILLISECONDS) FULLY CW 20-28.6 HZ (50-35 MILLISECONDS) SET R4 FOR 125 +/- 2 HZ (8.0 +/- .1 MILLISECONDS)</p> <p>5. VERIFY THE FREQUENCY AT 8TP WITH R5 SET AS FOLLOWS: (OUTPUT SHOULD BE A LOGIC SQUARE WAVE.) FULLY CCW 210-350 HZ (4.75-2.9 MILLISECONDS) FULLY CW 10-14 HZ (100-70 MILLISECONDS) SET R5 FOR 125 +/- 2 HZ (8.0 +/- .1 MILLISECONDS)</p> <p>B. OFFLINE, DC REGULATOR REQUESTED TESTS</p> <hr style="border-top: 1px dashed black;"/> <p>1. WITH PINS 13,14, AND 15,16 OPEN, ADJUST VARIABLE VOLTAGE SUPPLY (CONNECTED TO 11,12) SO THAT 6TP MEASURES BETWEEN 0 AND -1.5 VDC THEN VERIFY THE FOLLOWING:</p> <table style="margin-left: 40px;"> <tr><td>21,22</td><td>24COM</td></tr> <tr><td>23,24</td><td>P24</td></tr> <tr><td>25,26</td><td>P24</td></tr> <tr><td>27,28</td><td>24COM</td></tr> <tr><td colspan="2">"ALARM" OFF</td></tr> <tr><td colspan="2">"BKTRTP" OFF</td></tr> </table> <p>2. WITH THE VARIABLE SUPPLY CONNECTED AT 11,12 INITIALLY SET FOR 0 VOLTS AT 6TP, QUICKLY ADJUST THE VARIABLE SUPPLY SO THAT 6TP MEASURES MORE NEGATIVE THAN -2.5 VDC (BUT DO NOT EXCEED -15 VDC). THE TIME BETWEEN THE INPUT VOLTAGE CHANGE AND WHEN "ALARM" AND "BKTRTP" TURN ON SHOULD BE 2.0 +/- .5 SEC.</p> <p>3. VERIFY THE FOLLOWING:</p> <table style="margin-left: 40px;"> <tr><td>21,22</td><td>24COM</td><td>0</td></tr> <tr><td>23,24</td><td>+ .4 +/- .2 VDC</td><td>.496</td></tr> <tr><td>25,26</td><td>+ .4 +/- .2 VDC</td><td>.496</td></tr> <tr><td>27,28</td><td>+12.8 +/- 1 VDC</td><td>12.7</td></tr> </table> <p>4. ADJUST THE VARIABLE VOLTAGE SUPPLY SO THAT 6TP IS BETWEEN 0 AND -1.5 VDC AND NOTE "ALARM" AND "BKTRTP" GO OUT IMMEDIATELY. ALSO VERIFY 21,22 MEASURE 24COM.</p> <p>5. REMOVE THE CONNECTION BETWEEN THE VARIABLE SUPPLY AND PINS 11,12 AND VERIFY "ALARM" AND "BKTRTP" TURN ON. DELAY 1 sec</p> <p>6. CONNECT 23,24 TO P24 THROUGH A DC AMMETER AND VERIFY THE 39.5 AMMETER MEASURES 40 +/- 6 MILLIAMPS. THEN REMOVE THE AMMETER. 43.0</p> <p>7. CONNECT 25,26 TO P24 THROUGH A DC AMMETER AND VERIFY THE 40.1 AMMETER MEASURES 40 +/- 6 MILLIAMPS. THEN REMOVE THE AMMETER. 42.0</p> <div style="text-align: right;"> 3EL1 DL13 PRINTS TO </div>		21,22	24COM	23,24	P24	25,26	P24	27,28	24COM	"ALARM" OFF		"BKTRTP" OFF		21,22	24COM	0	23,24	+ .4 +/- .2 VDC	.496	25,26	+ .4 +/- .2 VDC	.496	27,28	+12.8 +/- 1 VDC	12.7
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MADE BY R. E. VANDERPOOL ISSUED 7-18-83	APPROVALS <div style="text-align: center; color: red;">REV</div> 7/26/83	GENERAL ELECTRIC CO. SALEM, VA.	DIV OR DEPT LOCATION 304A8473 CONT ON SHEET 4 SH NO. 3 CODE IDENT:																						

REV
NO.

304A8473

5

SH NO.

4

TEST

INSTRUCTION

FIRST MADE FOR

304A8471

CONT ON SHEET

REVISION

C. OFFLINE, AC REGULATOR REQUESTED TEST

1. CONNECT A VARIABLE VOLTAGE SUPPLY TO 11,12 WITH IT'S OUTPUT INITIALLY SET SO THAT 6TP IS BETWEEN 0 AND -1.5 VDC. CONNECT 15,16 TO P24. OPEN OR VERIFY 13,14 ARE OPEN. THEN VERIFY 21,22 MEASURES P24 AND THAT "ALARM" AND "BKTRP" ARE OUT.
2. WITH THE VARIABLE VOLTAGE SUPPLY STILL SET SO THAT 6TP IS BETWEEN 0 AND -1.5 VDC. QUICKLY ADJUST THE VARIABLE SUPPLY SO THAT 6TP MEASURES MORE NEGATIVE THAN -2.5 VDC (BUT DO NOT EXCEED -15 VDC). THE TIME BETWEEN THE INPUT VOLTAGE CHANGE AND WHEN "ALARM" AND "BKTRP" TURN ON SHOULD BE 2.0 +/- .5 SECONDS.
3. VERIFY THAT 21,22 MEASURES 24COM.
4. ADJUST THE VARIABLE VOLTAGE SUPPLY SO THAT 6TP MEASURES BETWEEN 0 AND -1.5 VDC. VERIFY "ALARM" AND "BKTRP" REMAIN ON AND 21,22 MEASURES 24COM.
5. REMOVE THE CONNECTION FROM 15,16 TO P24 AND VERIFY "ALARM" AND "BKTRP" GO OUT AND 21,22 STILL MEASURES 24COM.

D. MANUAL RESET BUTTON TEST

1. CONNECT 15,16 TO P24 AND ADJUST THE VARIABLE SUPPLY CONNECTED AT 11,12 SO THAT 6TP MEASURES MORE NEGATIVE THAN -2.5 VDC (BUT DO NOT EXCEED -15 VDC) THEN WAIT FOR "ALARM" AND "BKTRP" TO TURN ON.
2. ADJUST THE VARIABLE VOLTAGE SUPPLY SO THAT 6TP MEASURES BETWEEN 0 AND -1.5 VDC AND VERIFY "ALARM" AND "BKTRP" REMAIN ON.
3. PRESS THE RESET PUSHBUTTON ON THE PWB AND VERIFY "ALARM" AND "BKTRP" GO OUT AND VERIFY 21,22 MEASURES P24.
4. REMOVE THE CONNECTION BETWEEN 15,16 AND P24.

E. ON LINE, DC REGULATOR REQUESTED TEST

CONNECT PIN 13+14 TO +24V

1. CONNECT A VARIABLE VOLTAGE SUPPLY TO 11,12 WITH IT'S OUTPUT SET SO THAT 6TP MEASURES BETWEEN 0 AND -6.5 VDC. OPEN OR VERIFY 15,16 ARE OPEN, THEN VERIFY 21,22 MEASURES 24COM AND "ALARM" AND "BKTRP" ARE OFF.

3EL1

DL13

PRINTS

MADE BY R. E. VANDERPOOL

ISSUED 7-18-83

APPROVALS

REV

7/26/83

GENERAL ELECTRIC CO.

SALEM, VA.

DIV OR DEPT

LOCATION

304A8473

CONT ON SHEET

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304A8473	TEST INSTRUCTION		6	5	
CONT ON SHEET	FIRST MADE FOR	304A8471			
<p>2. WITH THE VARIABLE VOLTAGE SUPPLY STILL SET SO THAT 6TP MEASURES BETWEEN 0 AND -6.5 VDC. QUICKLY ADJUST THE VARIABLE SUPPLY SO THAT 6TP MEASURES MORE NEGATIVE THAN -7.5 VDC (BUT DO NOT EXCEED -15 VDC). THE TIME BETWEEN THE INPUT VOLTAGE CHANGE AND WHEN "ALARM" TURNS ON SHOULD BE 8 +/- 1 SECOND.</p> <p>3. VERIFY "BKTRTP" CYCLES ON FOR 8 SECONDS THEN OFF FOR 8 SECONDS THEN ADJUST THE VARIABLE SUPPLY SO THAT 6TP MEASURES BETWEEN 0 AND -6.5 VDC. VERIFY "ALARM" AND "BKTRTP" TURN OFF IMMEDIATELY.</p> <p>4. WITH THE VARIABLE SUPPLY STILL SET SO THAT 6TP MEASURES BETWEEN 0 AND -6.5 VDC. QUICKLY ADJUST THE VARIABLE SUPPLY SO THAT 6TP MEASURES MORE NEGATIVE THAN -7.5 VDC (BUT DO NOT EXCEED -15 VDC). VERIFY THE TIME INTERVAL BETWEEN THE INSTANT "ALARM" TURNS ON TO THE INSTANT "BKTRTP" TURNS ON IS 8 +/- 1 SECOND.</p> <p>5. ADJUST THE VARIABLE VOLTAGE SUPPLY SO THAT 6TP MEASURES BETWEEN 0 AND -6.5 VDC AND VERIFY "ALARM" AND "BKTRTP" TURN OFF.</p> <p>6. ADJUST THE VARIABLE VOLTAGE SUPPLY SO THAT 6TP MEASURES MORE NEGATIVE THAN -7.5 VDC (BUT DO NOT EXCEED -15 VDC). AS SOON AS "ALARM" TURNS ON, QUICKLY READJUST THE VARIABLE VOLTAGE SUPPLY BACK TO WHERE 6TP MEASURES BETWEEN 0 AND -6.5 VDC AND VERIFY "ALARM" TURNS OFF AND THEN WAIT AT LEAST 10 SECONDS AND VERIFY THAT "BKTRTP" DOES NOT TURN ON.</p> <p>7. READJUST THE VARIABLE VOLTAGE SUPPLY SO THAT 6TP MEASURES BETWEEN 0 AND -1.5 VDC.</p> <p>REMOVE 13,14 TO P24</p> <p>F. ON LINE, AC REGULATOR REQUESTED TEST</p> <p>-----</p> <p>1. CONNECT 13,14 AND 15,16 TO P24 AND CONNECT A VARIABLE VOLTAGE SUPPLY TO 11,12 (WITH VARIABLE SUPPLY ORIGINALLY SET SO THAT 6TP MEASURES BETWEEN 0 AND -6.5 VDC). THEN VERIFY "ALARM" AND "BKTRTP" ARE OUT AND 21,22 MEASURES 24COM. P24</p> <p>2. ADJUST THE VARIABLE VOLTAGE SUPPLY SO THAT 6TP MEASURES MORE NEGATIVE THAN -7.5 VDC (BUT DO NOT EXCEED -15 VDC) WHILE OBSERVING THE VOLTAGE AT 21,22. AT THE TIME WHEN "ALARM" TURNS ON, THE VOLTAGE AT 21,22 SHOULD CHANGE FROM 24COM TO P24 (WAIT FOR "BKTRTP" TO TURN ON BEFORE PROCEEDING TO NEXT SECTION.)</p>					3EL1 DL13
MADE BY	APPROVALS	GENERAL ELECTRIC CO.	DIV OR DEPT	304A8473	PRINTS
R. E. VANDERPOOL	REV	SALEM, VA.	LOCATION	6	5
ISSUED	7-18-83	7/26/83	CONT ON SHEET	SH NO.	CODE

REV NO.	TEST INSTRUCTION		
304A8473			
CONT ON SHEET	FL. SH NO. 6	FIRST MADE FOR	304A8471
<p>G. POWER UP RESET TEST</p> <p>-----</p> <ol style="list-style-type: none"> 1. ADJUST THE VARIABLE VOLTAGE SUPPLY (CONNECTED TO 11,12) SO THAT 6TP MEASURES LESS NEGATIVE THAN -6.5 (BUT DO NOT EXCEED 24COM VDC) AND VERIFY "ALARM" AND "BKTRTP" STAY ON AND 21,22 SHOULD MEASURE 24COM. 2. TURN OFF P24, P15, AND N15 SUPPLIES FOR A FEW SECONDS. 3. TURN P24, P15, AND N15 SUPPLIES BACK ON AND VERIFY 6TP IS STILL BETWEEN -6.5 VDC AND 24COM. "ALARM" AND "BKTRTP" ARE OFF, AND 21,22 MEASURE P24. 4. TURN OFF P24, P15, AND N15 SUPPLIES AND THEN ADJUST VARIABLE VOLTAGE SUPPLY SO THAT 6TP MEASURES MORE NEGATIVE THAN -7.5 VDC (BUT DO NOT EXCEED -15 VDC). 5. TURN P24, P15, AND N15 SUPPLIES BACK ON AND "ALARM" SHOULD TURN ON. AFTER 8 +/- 1 SECONDS. AS SOON AS "ALARM" TURNS ON, ADJUST THE VARIABLE VOLTAGE SUPPLY SO THAT 6TP MEASURES BETWEEN 0 AND -1.5 VDC. "ALARM" SHOULD STAY ON AND WAIT AT LEAST 10 SECONDS AND VERIFY "BKTRTP" DOES NOT TURN ON. 6. REMOVE THE CONNECTION BETWEEN 15,16 AND P24 AND VERIFY "ALARM" TURNS OFF. <p>H. FINAL POT SETTINGS</p> <p>-----</p> <p>ON DELAY</p> <ol style="list-style-type: none"> 1. ADJUST R4 SO THAT THE FREQUENCY AT 7TP IS 66.7 +/- .2 HZ. (15.0 +/- .1 MILLISECOND PERIOD) 2. ADJUST R5 SO THAT THE FREQUENCY AT 8TP IS 50.0 +/- .2 HZ. (10.0 +/- .1 MILLISECOND PERIOD) <p>END OF TEST</p>			REVISION
MADE BY	APPROVALS	DIV OR DEPT	304A8473
R. E. VANDERPOOL	REV	GENERAL ELECTRIC CO.	
ISSUED	7/26/83	SALEM, VA.	
7-18-83		LOCATION	CONT ON SHEET FL. SH NO. 6
			PRINTS TO