

REV NO.	TITLE
2 7 8 A 2 0 4 6	TEST INSTRUCTIONS INVERTER
CONT ON SHEET 2 SH NO. 1	FIRST MADE FOR 3S7932MA333G2

1.0 WIRE CHECK ALL WIRING EXCEPT THE PCB PER ELEMENTARY DIAGRAM.

2.0 HIPOT:

2.1 DISCONNECT ALL WIRING TO THE PCB. CLOSE I1CB AND I2CB. SHORT OUT ALL SEMI-CONDUCTORS (INCLUDING SCR GATES) AND FUSES. REMOVE GROUND TO 3S-0. TIE TOGETHER I2CB1, I2CB3 AND 3S-0. TIE I2CB1 TO GROUND. TIE I1CB1, I1CB3, AND I1CB5 TOGETHER. HIPOT I1CB1 TO GROUND AT 1920 V.RMS FOR 1 MIN. REMOVE GROUND FOR I2CB1. HIPOT I2CB1 TO GROUND AT 1330V.RMS FOR 1 MIN. REMOVE JUMPERS AND RECONNECT ALL WIRES.

3.0 HOOKUP

(G2=460V INPUT, G3=380V 50HZ INPUT, G4=200V INPUT)

3.1 CONNECT A 30, 460 VAC, 60 HERTZ SUPPLY THRU A VARIAC TO I1CB1, I1CB3³ AND I1CB5. (THE SUPPLY IS 380VAC, 50 HZ FOR "MA333G3"

BECAUSE IT HAS A DIFFERENT INVERTER TRANSFORMER WITH 380VAC INPUT

3.2 CONNECT DVMS TO MONITOR:

3.2.1 CKT. 111 (3TBD)

3.2.2 50 VOLT BUS (CKT. 109) (3TBA)

3.2.3 10.5 VOLT BUS (CKT. 205) (5TP)

6TP COMMON

BY TRANSISTOR

4.0 PRELIMINARY CONDITIONS

4.1 DISCONNECT THE FIRING CIRCUITS ON 2TB-A THRU 2TB-L. CONNECT THE GATE LEADS TO THE CATHODE TO PREVENT THE SCR FROM FIRING ON NOISE.

4.2 SET THE TEST JUMPER^(1TB) TO THE TEST POSITION. (T).

4.3 DISCONNECT THE LEADS ON 3TB-F (CKT. 113) AND 3TB-H (CKT. 112)

4.4 JUMPER 3TB-D (CKT. 111) TO 3TB-F (CKT. 113).

4.5 CONNECT AN OSCILLOSCOPE TO OBSERVE 22TP VOLTAGE.

5.0 ELECTRICAL TEST

5.1 ADJUST THE VARIAC TO INCREASE THE VOLTAGE ON CKT. 111^(3TBD) FROM 70 VDC TO 175 VDC. VERIFY THAT THE 10.5 VOLT BUS^(3TP) AND THE 50 VOLT BUS^(3TBA) DO NOT VARY BY MORE THAN ±5% BY TRANSISTOR

5.2 THE OSCILLOSCOPE VOLTAGE AT 22TP MUST SWITCH FROM +10 VOLTS TO ZERO VOLTS WHEN CKT. 111^(3TBD) VOLTAGE IS 100 ± .5 VOLTS. THIS IS SET WITH 3P. (START). THE 30 AC INPUT SHOULD BE 280 ± 10 VAC FOR 100 VOLTS ON CKT. 111. THERE SHOULD BE NO OSCILLATION AT 22TP. (INPUT = 224 ± 7 VAC FOR MA333G3)

5.3 THE OSCILLOSCOPE VOLTAGE AT 22TP MUST SWITCH FROM ZERO VOLTS TO +10 VOLTS WHEN THE VARIAC IS DECREASED FOR 85 ± .5 VOLTS ON CKT. 111. THIS IS SET WITH 4P (STOP).

REVISIONS

1 S2G Revised 3/8/81 per JJD G/141
5-28-81
Rev. 8/27/87 JMJ


ADDED NOTE TO 52
2/1/94 JAL

3

3QA1

3EH1

PRINTS TO

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ISSUED 5-14-79	2 7 8 A 2 0 4 6 CONT ON SHEET 2 SH NO. 1		

REV NO.

TITLE

TEST INSTRUCTIONS

INVERTER

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CONT ON SHEET 3

SH NO. 2

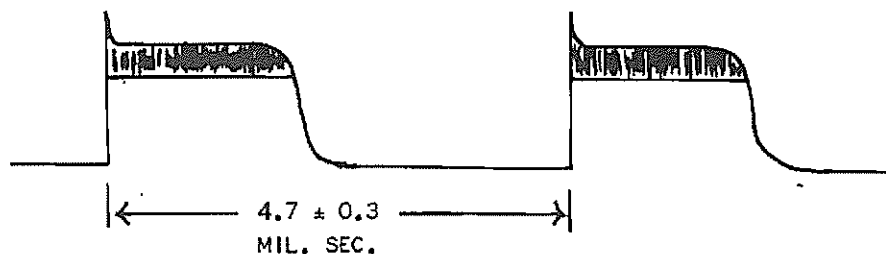
FIRST MADE FOR 3S7932MA333G2

REVISIONS

5.4 SET THE VARIAC FOR 105 VDC ON CKT. 111.

5.5 USE THE OSCILLOSCOPE TO VERIFY THE FIRING PULSES AS SHOWN BELOW. A 100 OHM, 10 WATT, 10 WATT RESISTOR SHOULD BE CONNECTED BETWEEN THE POINTS BEING MEASURED TO SIMULATE THE GATE CIRCUIT. THE POINTS ARE:

	COM.	PROBE
1SCR	2TB-A AND	2TB-B
2SCR	2TB-D AND	2TB-E
3SCR	2TB-G AND	2TB-H
4SCR	2TB-K AND	2TB-L



5.6 DECREASE THE VARIAC FOR ZERO VOLTS AT CKT. 111.

5.7 DISCONNECT THE JUMPER FROM 3TB-D TO 3TB-F.

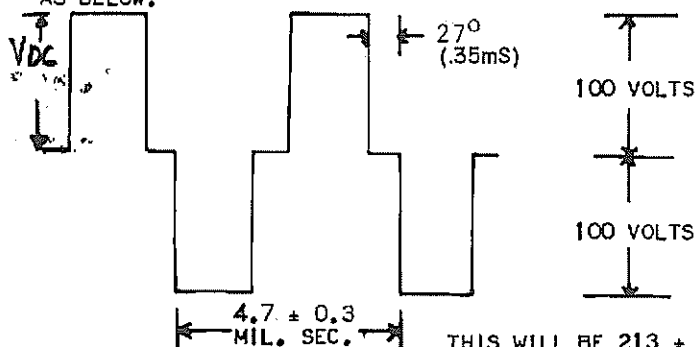
5.8 RECONNECT THE LEADS TO 3TB-F, 3TB-H AND THE FIRING CIRCUITS ON 2TB-A THRU 2TB-L.

5.9 CONNECT A 100 OHM, 200 WATT RESISTOR FROM 11TB-2 TO 11TB-1.

5.10 CONNECT AN OSCILLOSCOPE TO 11TB-2 (PROBE) AND 11TB-1 (COMMON).

5.11 INCREASE THE VARIAC FOR 105 VOLTS ON CKT. 111. THE OUTPUT SHOULD HAVE THE GENERAL WAVESHAPES SHOWN IN 5.12.

5.12 ADJUST THE VARIAC FOR $V_{DC} = 100$ ON CKT. 111. SET 1P FOR 27° OFF TIME (.35mS) AS BELOW.



THIS WILL BE 213 ± 13 HERTZ

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5-14-79

SALEM, VA

LOCATION

CONT ON SHEET 3

SH NO. 2

CODE IDENT NO

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5.13 VERIFY THAT AS THE VARIAC IS INCREASED FOR A GREATER VOLTAGE THAN 100 AT CKT. 111, THE OFF-TIME AND THE AMPLITUDE ON THE OUTPUT WAVEFORM WILL INCREASE AND AS THE VARIAC IS DECREASED, THE OFF-TIME AND AMPLITUDE ON THE OUTPUT WAVE FORM WILL DECREASE AND WILL SHUT OFF WHEN CKT. 111 VOLTAGE IS $85 \pm .5$ VOLTS.

5.14 INCREASE THE VARIAC FOR 460 VAC INPUT. (380VAC ON MA333G3)
CKT. 111 VOLTAGE WILL BE 165 ± 8 VOLTS. (V_{DC})
THE OFF-TIME WILL BE 87 ± 5^0 .
(1.1 ms)

5.15 OVERVOLTAGE (SET THE OVERVOLTAGE POT 2P FULLY CW)

5.15.1 DECREASE THE VARIAC FOR 80 VOLTS AND THEN INCREASE IT FOR 120 ± 0.5 VOLTS ON CKT. 111. (V_{DC})
THE OFF-TIME SHOULD NOW BE 52.5 ± 0.5 (.68 ms)

5.15.2 MONITOR 17TP WITH A DVM. IT SHOULD BE AT ZERO VOLTS.

5.15.3 USE 1P ON THE INVERTER BOARD TO DECREASE THE OFF-TIME TO 40^0 (.52 ms)

5.15.4 ADJUST ^{CCW} 2P UNTIL 17TP GOES POSITIVE (APPROX. 10 VOLTS.)
THIS WILL BE AT 10% OVER-VOLTAGE.

NOTE: EACH TIME 17TP GOES POSITIVE THE VARIAC MUST BE DECREASED TO LOWER CKT. 111 VOLTAGE BELOW 85 VOLTS TO GET 17TP BACK TO ZERO VOLTS AND THEN RESET FOR 120 VOLTS ON CKT. 111. 1P SHOULD BE RESET FOR MORE THAN 40^0 OFF TIME TO INSURE 17TP IS ZERO VOLTS UNTIL 120 VOLTS IS SET ON CKT. 111.

5.15.5 FINAL SETTING OF 2P SHOULD BE VERIFIED BY ADJUSTING THE OFF-TIME WITH 1P TO ASSURE 17TP VOLTAGE GOES POSITIVE WITH 40^0 OFF-TIME.
(.52 ms)

5.15.6 RESET 1P FOR MORE THAN 40^0 OFF-TIME.
(.52 ms)

5.15.7 CONNECT THE TEST JUMPER FOR NORMAL OPERATION.

5.15.8 VERIFY THAT THE OUTPUT WILL SHUT-OFF WHEN 1P IS ADJUSTED FOR 40^0 OFF-TIME.
(.52 ms)

5.15.9 RESET 1P FOR 52.5^0 OFF-TIME WITH 120 VOLTS ON CKT. 111 (3TP)
(.68 ms)

5.15.10 DECREASE THE VARIAC FOR ZERO VAC. OPEN 11CB.

6.0 125 VDC OPERATION

6.1 CONNECT 125 VOLTS DC, POS. TO 12CB1 AND NEGATIVE TO 12CB³.


6.2 APPLY THE 125 VDC POWER. CLOSE 12CB.

REVISIONS

1 SLG Revised per JJD 6/16/81
5-28-81
ADDED NOTE
2 2/1/94 JAL

3 QAI
3 EKI

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CONT ON SHEET FL SH NO. 4

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6.3 VERIFY THAT CKT. 111 VOLTAGE IS 122 ± 2 VOLTS AND THE OFF-TIME
ON THE OUTPUT WAVEFORM IS $55 + 20$
(.71 ms)

7.0 THE 460 VAC AND THE 125 VDC POWER SHOULD BE REMOVED AND APPLIED SEVERAL
TIMES TO ASSURE RELIABLE OPERATION.

7.1 REMOVE ALL POWER AND DISCONNECT.

REVISIONS

1	5-28-81	Revised per JSD	6/1/81
2	ADD NOTE	2/1/94	JAL

30A1

3EH1

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