



GE Canada

Electronic Products Repair

Test Instructions for

0517L0446 G001


Device Number

±15VDC 275MA power supply

Description of Device

Originated By: Dennis Cully
Typed Name

Date: April 10, 2006
mm/dd/yy

Approved By: 
Signature

Approval Date: April 10, 2006
mm/dd/yy



±15VDC 275MA power supply

[illegible]

TEST INSTRUCTIONS



±15VDC 275MA power supply
0517L0446 G001
Date: April 10, 2006

Location: Book or file File

Pg.: 3/6

1. PURPOSE:
 - a. Static and dynamic test procedures for ±15VDC 275MA power supply 0517L0446 G001
2. ELEMENTARY:
 - a. S&C data book 1189 section 441 216B9741AA
 - b. S&C data book 1189 section 446 216B9741BA
3. EQUIPMENT:
 - a. Variable transformer TL# 00108 or equivalent
 - b. 115VAC isolation transformer TL# 00350 or equivalent
 - c. Oscilloscope Fluke PM3994B TL# 00666 or equivalent
 - d. 2 Multi meters HP 34401A TL# 00321 or equivalent
 - e. Electronic load TL# 00810 or equivalent
 - f. Ammeter Fluke 87 TL# 00659 or equivalent
 - g. 2 100 ohm resistors 0177A1460 P029
 - h. 100K potentiometer 0177A1043 P023
4. SET UP:
 - a. Connect the variable transformer output between X1 & X4
 - b. Connect X2 to X3
 - c. Connect H1 to TJ34
 - d. Connect H2 to TJ42
 - e. Connect one multi meter between TJ10 (+) & TJ50 (-)
 - f. Connect the other multi meter between TJ20 (-) & TJ50 (+)
 - g. Connect the ammeter between TJ10 & the positive output of the electronic load
 - h. Connect the negative output of the electronic load to TJ50
5. PROCEDURE:
 - a. Regulator
 - i. With no load apply 104VAC between TJ34 & TJ42
 - ii. Observe that LED1, 2, 5 & 6 are illuminated
 - iii. Adjust R2 for N15.00VDC at TJ20
 - iv. Adjust R1 for P15.00VDC at TJ10
 - v. Increase the 104VAC to 126VAC
 - vi. Observe that both outputs are still at 15.00VDC
 - vii. Decrease the 126VAC to 115VAC and proceed with the remainder of the tests

TEST INSTRUCTIONS



±15VDC 275MA power supply
0517L0446 G001
Date: April 10, 2006

Location: Book or file File

Pg.: 4/6

b. Current limit

i. Positive

1. Set the electronic load unit at 275MA
2. Observe that the output at TJ10 did not change more than 15MV
3. Increase the current load until the P15.00VDC power supply begins to drop. This should occur between 400 & 600 MA
4. Continue to increase the electronic load until the output voltage is near zero volts.
5. Observe that the output current is 120MA
6. Set the electronic load at zero
7. Turn off the 115VAC power supply
8. Remove the ammeter from TJ10

ii. Negative

1. Connect the ammeter between TJ20 & the negative output of the electronic load
2. Connect the positive output of the electronic load to TJ50
3. Set the electronic load unit at 275MA
4. Observe that the output at TJ20 did not change more than 15MV
5. Increase the current load until the N15.00VDC power supply begins to drop. This should occur between 400 & 600 MA
6. Continue to increase the electronic load until the output voltage is near zero volts.
7. Observe that the output current is 120MA
8. Set the electronic load at zero
9. Turn off the 115VAC power supply
10. Remove the ammeter from TJ20

c. Crowbar

i. Positive

1. Remove the FU1 & FU2
2. Insert the 100 ohm resistors into the FU1 & FU2 sockets
3. Jumper the top of R41 to TJ50
4. Connect the 100K potentiometer between the top of R35 and TJ50
5. Set the 100K potentiometer CCW
6. Slowly increase the 100K potentiometer until the crowbar trips at $16.5 \pm 800\text{MV}$
7. Observe that LED3-6 are illuminated and LED1 & 2 are extinguished
8. Turn the 115VAC power off
9. Remove the jumper between TJ50 & the top of R41

ii. Negative

1. Jumper the top of R39 to TJ50
2. Connect the 100K potentiometer between the top of R35 and TJ50

TEST INSTRUCTIONS



±15VDC 275MA power supply
0517L0446 G001
Date: April 10, 2006

Location: Book or file File

Pg.: 5/6

3. Set the 100K potentiometer CCW
 4. Slowly increase the 100K potentiometer until the crowbar trips at $16.5 \pm 800\text{MV}$
 5. Observe that LED3-6 are illuminated and LED1 & 2 are extinguished
 6. Turn the 115VAC power off
 7. Remove the jumper between TJ50 & the top of R39
- d. Bus check
- i. Remove the 100 ohm resistors from the FU1 & FU2 sockets
 - ii. Install the 3A fuses in FU1 & FU2 sockets
 - iii. Turn on the 115VAC
 - iv. Make sure that the output voltage between TJ10 & TJ50 is 15.00VDC
 - v. Make sure that the output voltage between TJ20 & TJ50 is 15.00VDC
 - vi. Turn the 115VAC power supply off.
6. UPGRADES:
- a. Revision 1 to revision 2 per ECN 82-29777
 - i. Replace C5 & C6 (0177A1283 P016) with 100K (0177A1460 P320) resistor
 - ii. Remark C5 & C6 with R50 & R51
 - iii. Remark the card to read ML0517L0441 G001 R2
 - b. Revision 2 to revision 3 per ECN 82-29936
 - i. Change R25 from 1K (0177A1460 P126 to 475 ohms (0177A1640 P094) resistor
 - ii. Replace R50 & R51 100K (0177A1460 P320) resistor with C5 & C6 (0177A1283 P016) .1μF 50V
 - iii. Add a capacitor C18, .1μF 50V (0177A1283 P016) between R44, R46 and COM.
 1. Turn R24 resistor around & solder capacitor from lead of R44 to lead of R24
 - iv. Remark the card to read ML0517L0441 G001 R3
 - c. Revision 3 to revision 4 per ECN 82-29511
 - i. Change R24, R26-28, R48 & R49 from 475 ohms (0177A1640 P094) to 1K (0177A1460 P126 resistor
 - ii. Remark the card to read ML0517L0441 G001 R4
 - d. Revision 4 to revision 5 per ECN 82-29517
 - i. Change T1 transformer from 0177A1333 P001 to 0177A1333 P002
 - ii. Remark the card to read ML0517L0441 G001 R5
 - e. Revision 5 to revision 6 per ECN 82-29757
 - i. Change capacitors C9 & C11 from .1μF 50V (0177A1283 P016) to 1μF 50V (0177A1283 P023)
 - ii. Remark the card to read ML0517L0441 G001 R6
 - f. Revision 6 to revision 7 per ECN 83-29800

TEST INSTRUCTIONS



±15VDC 275MA power supply
0517L0446 G001
Date: April 10, 2006

Location: Book or file File

Pg.: 6/6

- i. Change C7 & C8 from .01μF 50V (0177A1283 P009) to .01μF 100V (0177A1049 P013)
- ii. Change U1 from SG3502J (0177A1706 P001) to SG2502J (0177A1706 P003)
- iii. Add MOV (0177A1283 P001) between pin34 & pin42
- iv. Remark the card to read ML0517L0441 G001 R7
- g. Revision 7 to revision 8 per ECN 84-29506
 - i. Change FU1 & FU2 from 1A (0177A1382 P001) to 3A (0177A1382 P004)
 - ii. Remark the card to read ML0517L0441 G001 R8
- h. Revision 8 to revision 9 per ECN 84-29536
 - i. Change R22 & R23 from 1.21K .25W (0177A1460 P134) to 1.2K .5W (0177A1001 P051)
 - ii. Remark the card to read ML0517L0441 G001 R9
- i. Revision 9 to 0517L0446 G001 R0
 - i. Change T1 transformer from 0177A1333 P002 to 0177A1333 P001
 - ii. Decrease the card output current from 500MA to 275MA
 - iii. Change Q1 & Q2 heat sink from 0237A4901AF to 0216B9810AAP001
 - iv. Remark the card to read ML0517L0446 G001 R0

7. END.