GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GED-DS3820PSCx**

Test Procedure for a DS3820PSCx Power Supply Assembly

DOCUMENT REVISION STATUS: Determined by the last entry in the "REV" and "DATE" column

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	J. Wychulis	07/01/02
B	Added 6.2.3.1	C. Wade	6/11/2008
C	Added another sentence to line 6.2.3.2 and added DS3820PSCD table in 6.2.4.	C. Wade	6/8/2011
D	Added additional steps 6.3-6.10 & 6.11-6.20 (Crowbar Test)	L. Groves	3/4/2017

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
J. Wychulis	D. Bush		L. Groves
DATE	**DATE**	**DATE**	**DATE**
07/01/02	3/4/2017		3/4/2017

Test Procedure for a DS3820PSCx Power Supply Assembly

1. SCOPE

1.1 This is a functional testing procedure for a DS3820PSCx Power Supply Assembly.

2. STANDARDS OF QUALITY

2.1 Refer to the current revision of the IPC-A-610 standard for workmanship standards.

3. APPLICABLE DOCUMENTS

3.1 The following document(s) shall form part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue shall apply.
- **3.1.1 DS3820PSCB Folder**
- **3.1.2 DS3820PSCC Folder**
- **3.1.3 DS3820PSFF Folder**

4. ENGINEERING REQUIREMENTS

4.1 Equipment Cleaning
- **4.1.1** Equipment should be clean and free of debris prior to applying power unless performing an initial check. Refer to the local documented procedures for cleaning guidelines.

4.2 Equipment Inspection
- **4.2.1** Equipment should be visually inspected for any defects prior to applying power. This inspection should include the following as a minimum:
  - **4.2.1.1** Wires broken or cracked
  - **4.2.1.2** Terminal strips / connectors broken or cracked
  - **4.2.1.3** Loose wires
  - **4.2.1.4** Components visually damaged
  - **4.2.1.5** Capacitors leaking
  - **4.2.1.6** Solder joints damaged or cold
  - **4.2.1.7** Circuit board burned or de-laminated
  - **4.2.1.8** Printed wire runs burned or damaged

5. EQUIPMENT REQUIRED

5.1 The following equipment is required to perform the process requirements. Equipment may be substituted provided that all accuracy's and test ratios are equivalent or better.

Qty	Reference #	Description
1		TDI Electronic Load
1		Fluke 85 DMM (or Equivalent)
1		DS3820PSLA Test Assembly

6. TESTING PROCESS

6.1 Setup

6.1.1 Make the following connections:

From	TO
JD on PSLA	JD on NPPB
J1/JA/JN on Load	JN on XTFP card of PSLA unit
J2/JB/JP on Load	JP on XTFP card of PSLA unit
J1 on XTFP card of PSLA unit	J1 on NPPB
J2 on XTFP card of PSLA unit	J2 on NPPB

6.2 Testing Procedure

6.2.1 Verify all connections before applying power.

6.2.2 Set all load controls to Minimum.

6.2.3 Apply power to Unit Under Test.

6.2.3.1 SPECIAL NOTE: When powering up (115VAC) ensure the frame is grounded, we had a wire get pinch to the frame and it was not caught until customer installed unit and experienced a light show.

6.2.4 Connect the DMM to the appropriate connection on the Load and verify the following voltages at the indicated load. Adjust if necessary.

DS3820PSCB

Output	Load	Tolerance	Adjustment
P5 (+5 VDC)	20 Amps	.05 Volts	R1 on NPPB Card
P15 (+15.075 VDC)	1 Amp	.025 Volts	R6 on NPSK Card
N15 (-15.075 VDC)	1 Amp	.025 Volts	R7 on NPSK Card

DS3820PSCC

Output	Load	Tolerance	Adjustment
P28 (+28 VDC)	6 Amps	.05 Volts	R1 on NPPC Card

DS3820PSCD

Output	Load	Tolerance	Adjustment
P28 (+24 VDC)	6 Amps	.05 Volts	R1 on NPPC Card

6.3 SET THE INPUT TO 75 VOLTS +/-1 VDC. ALSO APPLY THE 5V P.S. AS INDICATED IN FIGURE 1 CONNECT 500 OHM, 1/2W RESISTORS, AND 5 VOLT POWER SUPPLY AS FOLLOWS.

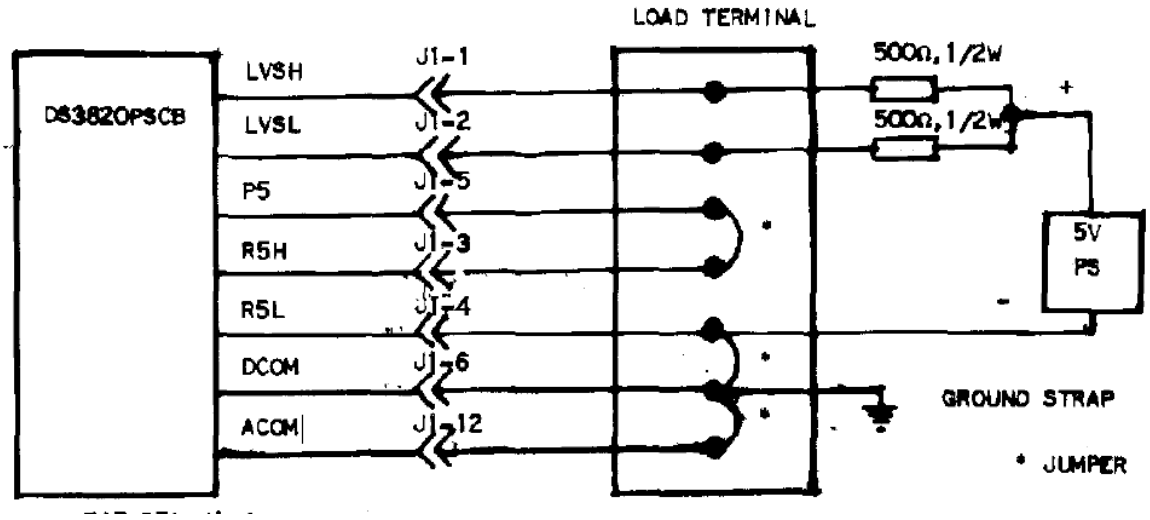

FIGURE 1

6.4 TIE R5L(J1-4) TO DC0M(J1-6) AND AC0M(J1-12) AT LOAD TERMINAL, THEN CONNECT DCOM TO BUILDING GROUND THROUGH A SHORT BRAID STRAP AS SHOWN. TIE R5H(Jl-3) TO P5(J1-S) AT LOAD TERMINAL OF P5 BUS AS SHOWN.

6.5 VERIFY THE BUSES AT LOAD TERMINALS. ADJUST THEIR RESPECTIVE POTS IF NECESSARY.

6.6 UVR (TP6) ON NPSJ CARD SHOULD BE + 4.036 ± .005 VDC, ADJUST POT R5 ON NPSJ IF NECESSARY.

6.7 REGULATION AND RIPPLE

6.8 APPLY P 5 (J1-5) BUS TO FULL LOAD 100% BY 25% INCREMENT STEP ONLY. P15 (J1-10) AND N15 (J1-11) BUSES TO FULL LOAD 100% IN SINGLE STEP.

6.9 VERIFY THE FOLLOWING BUSES AT THE LOAD TERMINAL.

BUSES	**VOLTS**	**POTS**
PS (Jl-5)	5V +/-.05	R1 ON NPPB
PIB (Jl—10)	+15.075 +/-.025	R6 ON NPSK
N15 (Jl-11)	-15.075 +/-.025	R7 ON NPSK

6.10 THEN THE FOLLOWING RIPPLES AND SPIKES SHOULD BE MET. MEASUREMENT AT THE LOAD TERMINAL.

BUSES	RIPPPLE MV P-P MAX	SPIKES MV P-P MAX
P5(J1-5)	100	150
P15(J1-10)	50	200
N15(J1-11)	50	200

RAISE INPUT VOLTS JD3 (+) AND JC2(-) TO 140±.5VDC.

REPEAT STEP 6.9 AND 6.10.

UNLOAD PS(Jl-5) BY 1/4 LOAD STEP. THEN REMOVE M5(U1-10) AND N15{J1-11) LOAD®,
VERIFY THAT THE STATUS LIGHT OF NPSJ CARD IS STILL ON.

LOWER THE BUS P5(J1-5) SLOWLY BY POT R1. THE STATUS "READY" YELLOW LIGHT GOES OFF WHEN THE BUS READS 4.75 ± .03 VDC. LVSH (J1-l) SHOULD BE +.2 -.2 VDC LVSL (J1-2) 4.8 +/-. 3VDC.

RAISE BUS P5 (J1-5) SLOWLY BY POT R1 . THE STATUS "READY" YELLOW LIGHT SHOULD BE ON WHEN P5(J1-5) READS 4.8 +/- .03VDC, THEN LVSH(J1-1) SHOULD BE 4.81V +/- .3 VDC; LVSL(J1-2) VDC.

REMOVE THE 5OO OHM RESISTORS AND THE 5 VOLT P.S. FROM LVSH (J1-1) AND LVSL(J1-2).

6.11 MONITOR AND CROWBAR

6.12 THE POWER SUPPLY IS CROWBARRED, WHEN P5 (J1-5) BUS IS LOWERED TO 4.5±.1 VDC BY POT R1.

6.13 TURN POT R1 C.W. ABOUT ONE (1) TURN. CYCLE THE SWITCH S1 OF THE P.S . TO "DISABLE ; " THEN "ENABLE" POSITIONS. STATUS LIGHT SHOULD BE ON AGAIN WHEN P5 (Jl -5) READS 4.81±.03 VDC.

6.14 CONTINUE TO RAISE P5 (J1-5) SLOWLY BY POT R1 . THE STATUS "READY" LIGHT GOES OFF WHEN THE BUS READS 5.9±2 VDC.

6.15 TURN POT R1 CCW ABOUT ONE (1) TURN, RECYCLE SWITCH S1 OF THE P.S. TO "DISABLE," THEN "ENABLE" POSITIONS. THE LIGHT SHOULD BE BACK ON. CONTINUE TO ADJUST POT R1 TILL PS (Jl1-5) BUS READS 5*.05 VDC.

6.16 LOWER P15 (J1-10) SLOWLY BY POT R6 CCW ON NPSK CARD. THE POWER SUPPLY IS CROWBARRED WHEN THRESHOLD 14±.25 VDC IS PASSED. LED LIGHT GOES OFF.

6.17 TURN POT R6 C.W. ABOUT ONE (1) TURN, RECYCLE SWITCH S1 OF THE P.S. TO " DISABLE", THEN "ENABLE" POSITIONS. THE LIGHT SHOULD BE BACK ON.

6.18 CONTINUE TO RAISE P15 (J1-10) BUS SLOWLY BY POT R6 C.W., THEN THE POWER SUPPLY IS CROWBARRED WHEN A THRESHOLD 16.55±.3 VDC IS PASSED.

6.19 RESET P15 (J1-10) BUS TO + 15 VDC BY THE FOLLOWING PROCEDURE:

- TURN POT R6 CCW FOR ONE (1) TURN
- RECYCLE SWITCH S1 OF THE P.S. TO "DISABLE" THEN "ENABLE" POSITIONS. STATUS LIGHT SHOULD BE BACK ON BY NOW.
- CONTINUE TO ADJUST POT R6 TILL P15 (J1-10) BUS READS 15.075 ± .025 VDG .

6.20 REPEAT STEPS 6.16 THROUGH 6.19 FOR N15 (J1-11) BUS WITH POT R7 ON NPSK CARD ADJUSTED, INSTEAD OF R6.

6.21 *****TEST COMPLETE ******

7. NOTES

7.1 None at this time.