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Project 99SC56151

January 10, 2000

REPORT

ON

COMPONENT - POWER SUPPLIES,
INFORMATION TECHNOLOGY EQUIPMENT, INCLUDING
ELECTRICAL BUSINESS EQUIPMENT

Condor DC Power Supplies Inc.
Oxnard, California

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DESCRIPTION

PRODUCT COVERED:

Component - Switching Power Supplies for Use in Information Technology Equipment, Models GPC55A, GPC55B, GPC55C, GPC55D, GPC55E, GPC55F, GPC55-5, GPC55-12, GPC55-15, GPC55-24, GPC55-28, GPC55-48, and SP1394; may or may not be followed by FB, TB, or PF.

ELECTRICAL RATING:

Input: 100-240 V ac, 47-63 Hz, 1.7 A

Output:

<u>Model</u>	<u>V1</u>	<u>A1</u>	<u>V2</u>	<u>A2</u>	<u>V3</u>	<u>A3</u>	<u>V4</u>	<u>A4</u>
GPC55A	5	6.0	12	3.0	12.0	1	-12	1
GPC55B	5	6.0	12	3.0	-12.0	1	-15	1
GPC55C	5	6.0	15	3.0	-15.0	1	-5	1
GPC55D	5	6.0	24	1.5	12.0	1	-12	1
GPC55E	5	6.0	24	1.5	15.0	1	-15	1
GPC55F	5	6.0	12	3.0	15.0	1	-15	1
GPC55-5	5	11.0						
GPC55-12	12	4.7						
GPC55-15	15	3.7						
GPC55-24	24	2.3						
GPC55-28	28	2.0						
GPC55-48	48	1.5						
SP1394	5	5.3	12	3.0	-5.2	1	-12	1

The units have been evaluated for a maximum ambient of 50°C.

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

This product was investigated under the Standard for Information Technology Equipment, UL 1950, First Edition, dated March 15, 1989.

This product is for use only in (or with) complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

The equipment is considered: Class I (earthed), intended for use on a TN power system.

Conditions of Acceptability - When installed in the end-use equipment, considerations shall be given to the following:

1. This component has been judged on the basis of the required spacings in the Standard for Information Technology Equipment, Sub-clause 2.9, which would cover the component, itself, if submitted for unrestricted Listing.
2. This power supply shall be installed in compliance with the enclosure, mounting, creepage, clearance, casualty, markings, and segregation requirements of the end-use application.
3. The need for conducting leakage current tests is to be determined as part of the end-product evaluation.
4. This power supply has only been evaluated for use in a Pollution Degree 2 environment.
5. The input and output connectors have not been evaluated for field connections and are only intended for connection to mating connectors of internal wiring inside the end-use machine. The acceptability of these and the mating connectors relative to secureness, insulating materials, and temperature shall be considered.
6. This power supply shall be properly bonded to earth in the end-use product as this unit was investigated for Class I construction as defined in UL 1950. The bonding terminal has not been investigated as a protective earthing terminal. An additional evaluation shall be made if the power supply is intended for use in other than Class I equipment.
7. The secondary outputs of this power supply are considered SELV and non-energy hazardous energy levels.
8. This power supply was evaluated under the assumption that the power source is a TN-S system as defined by UL 1950.
9. This power supply has only been evaluated for use in a 25°C and a 50°C ambient. An additional evaluation should be made if the power supply is intended to be used in an elevated ambient.

10. The end use product shall ensure that a fuse replacement warning for Fuse F1, Fig. 1, Item 3 is provided.
- 11.* All power supplies, except Models GPC55-5 comply with the Limited Power Source requirement in Clause 2.11 of UL 1950.



Certificate of Compliance

Certificate Number: LR 46516-118C

Revision: LR 46516-241C

Date Issued: August 27, 1996

Issued To: Condor D.C. Power Supplies Inc.
2311 Statham Parkway
Oxnard, CA 93033

The products listed below are eligible to bear the CSA Mark.

Issued By: William Giesbrecht, ASCT.
Vancouver, BC, Canada

Signature

PRODUCT CLASS

5311 03 - POWER SUPPLIES - Component Type

PRODUCTS

Component power supplies for use with Information Processing and Business Equipment, where the suitability of the combination is to be determined by the Canadian Standards Association.

Model GPC55A, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/6 A, +12 V/3 A, +12 V/1 A, -12 V/1 A; 55 W max total output.

Model GPC55B, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/6 A, +12 V/3 A, -12 V/1 A, -5 V/1 A; 55 W max total output.

Model GPC55C, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/6 A, +15 V/3 A, -15 V/1 A, -5 V/1 A; 55 W max total output.

Model GPC55D, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/6 A, +24 V/1.5 A, +12 V/1 A, -12 V/1 A; 55 W max total output.



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Model GPC55E, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/6 A, +24 V/1.5 A, +15 V/1 A, -15 V/1 A; 55 W max total output.

Model GPC55F, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A, dc outputs rated +5 V/6 A, +12 V/3 A, +15 V/1 A, -15 V/1 A; 55 W max total output.

Model GPC55-5, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/11 A; 55 W max total output.

Model GPC55-12, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +12 V/4.7 A; 55 W max total output.

Model GPC55-15, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +15 V/3.7 A; 55 W max total output.

Model GPC55-24, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +24 V/2.3 A; 55 W max total output.

Model GPC55-28, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc output rated +28 V/2 A, 55 W max total output.

Model GPC55-48, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +48 V/1.5 A; 72 W max total output.

Model SP1394, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5.6 V/5.3 A, +12 V/3 A, -12 V/1 A, -5.2 V/1 A; 55 W max total output.

PRODUCT CLASS

5311 20 - POWER SUPPLIES - Component Type for use with Medical Equipment

PRODUCTS

Component power supplies for use with Medical Equipment, where the suitability of the combination is to be determined by the Canadian Standards Association.

Model GPM55A, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/6 A, +12 V/3 A, +12 V/1 A, -12 V/1 A; 55 W max total output.

Model GPM55B, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/6 A, +12 V/3 A, -12 V/1 A, -5 V/1 A; 55 W max total output.

Model GPM55C, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/6 A, +15 V/3 A, -15 V/1 A, -5 V/1 A; 55 W max total output.

Model GPM55D, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/6 A, +24 V/1.5 A, +12 V/1 A, -12 V/1 A; 55 W max total output.



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Model GPM55E, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/6 A, +24 V/1.5 A, +15 V/1 A, -15 V/1 A; 55 W max total output.

Model GPM55F, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/6 A, +12 V/3 A, +15 V/1 A, -15 V/1 A; 55 W max total output.

Model GPM55-5, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/11 A; 55 W max total output.

Model GPM55-12, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +12 V/4.7 A; 55 W max total output.

Model GPM55-15, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +15 V/3.7 A; 55 W max total output.

Model GPM55-24, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +24 V/2.3 A; 55 W max total output.


Model GPM55-28, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc output rated +28 V/2 A, 55 W max total output.

Model MSP1384, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/6 A, +15 V/3 A, -15 V/3 A, -15 V/1 A; 55 W max total output.

Model MSP1306, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/3 A, +12 V/1.25 A, +15 V/0.75 A, -15 V/0.25 A; 45 W max total output.

Model MSP1461, (Level 3), input rated 100-240 V (continuous), 47-63 Hz, 1.7 A; dc outputs rated +5 V/6 A, +12 V/3 A, +15 V/1 A, -15 V/1 A; 55 W max total output.

Notes:

1. Maximum ambient temperature for continuous output power of 55 Watts (72 Watts for GPC55-48) is 50°C.
2. The model designations may be followed by a suffix to indicate the following options:
"-FB" = Flux Band on the Output Transformer
3. Product Class 5311 20 Installation Instructions for the subject Models:
 - 3.1 **GROUNDING:** The Earth (ground)  terminal J1, pin 1 and all of the pads around the mounting holes must be bonded to Safety Earth in the host equipment. Metallic spacers should be used to mount supply to metal surfaces. When mounting to non-metallic surfaces, connect all mounting pads together and bond to earth. Using the earth terminal on the supply for grounding the host equipment is not recommended. A separate dedicated grounding point should be used.



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- 3.2 **OUTPUTS:** All output commons should be connected to Safety Earth in the end application. The output(s) are intended for safety earthed Signal Input/Signal Output and Intermediate Circuits only. The output(s) are not acceptable for patient connection without additional isolation. All DC outputs are SELV.
- 3.3 **ISOLATION:** The isolation voltage from primary to secondary is 4000 VAC. The creepage distance between primary and secondary circuits is 8 mm minimum. The required creepage and clearance distances from primary circuits to ground and secondary circuits must be maintained after installation to preserve the intended safety.
- 3.4 **OVERCURRENT PROTECTION:** The internal fuse is located in the phase lead only. EN 60601-1 requires that both supply leads (phase and neutral) be protected against overcurrent. Complete overcurrent protection must be provided in the host equipment. Fuse ratings must not exceed that specified for the internal fuse, must meet the requirements of EN 60601-1 and be acceptable for the country in which the host equipment is to be installed.

APPLICABLE REQUIREMENTS

- | | | |
|------------------------|---|---|
| CAN/CSA-C22.2 No 0-M91 | - | General Requirement - Canadian Electrical Code, Part II |
| 0.4-M1982 | - | Bonding and Grounding of Electrical Equipment (Protective Grounding) |
| 234-M90 | - | Safety of Component Power Supplies |
| 601.1-M90 | - | Medical Electrical Equipment, Part 1: General Requirements for Safety |



Product Service

CERTIFICATE

No. B 06 07 59743 009

Holder of Certificate: **SL Power Electronics, Corp.**



6050 King Drive Bldg A
Ventura CA 93003
USA

Production Facility(ies):

16784, 52962

Certification Mark:



Product:

**Switching power supply unit
(AC/DC Switching Power Supplies)**

Model(s):

GPC55X Series, GPC55-X Series, SP1394, SP1394G
(For further model information please see attachment)

Parameters:

Rated Input Voltage: 100 - 240 V AC
Rated Frequency: 50 / 60 Hz
Rated Input Current: 1.7 A max.
Protection Class: I

Rated DC Outputs: See attachment

See attachment for Conditions of Acceptability.

Tested according to: EN 60950-1/A11:2004

The product was tested on a voluntary basis and complies with the following essential requirements. The certification mark shown above can be affixed on the product. The certification mark must not be altered in any way. See also notes overleaf.

Test report no.: 095-602108-000

Date, 2006-07-21

William Alworth

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218707



Product Service

**Attachment to certificate No. B 06 07 59743 009
for SL Power Electronics, Corp.**

AC/DC SWITCHING POWER SUPPLIES

DC Power Supplies models GPC55X Series, GPC55-X Series and SP1394, SP1394G are components, which are intended for use in Information Technology Equipment.

GPC55X Series (Multiple Outputs): GPC55A, GPC55B, GPC55C, GPC55D, GPC55E, GPC55F

SP1394, SP1394G: Special Product part numbers with no additional suffixes. On SP1394G, the "G" indicates compliance with RoHS

GPC55-X Series (Single Output): GPC55-5, GPC55-12, GPC55-15, GPC55-24, GPC55-28, GPC55-48

Where X represents the output voltage, which may be the number: 5, 12, 15, 24, 28, or 48.

For the GPC55 Series', these:

May or may not be followed by suffix -XXX, where XXX may be any number from 001 thru 999. The -XXX suffix are used for value added configurations that have no impact on safety.

May be followed by an optional "G" which indicated compliance with RoHS.

OUTPUT: – Total of all Outputs.

Model	Watts	Output #1	Output #2	Output #3	Output #4
GPC55A	55	+5 V dc 6 A	+12 V dc 3 A	+12 V dc 1 A	-12 V dc 1 A
GPC55B	55	+5 V dc 6 A	+12 V dc 3 A	-5 V dc 1 A	-12 V dc 1 A
GPC55C	55	+5 V dc 6 A	+15 V dc 3 A	-5 V dc 1 A	-15 V dc 1 A
GPC55D	55	+5 V dc 6 A	+24 V dc 1.5 A	+12 V dc 1 A	-12 V dc 1 A
GPC55E	55	+5 V dc 6 A	+24 V dc 1.5 A	+15 V dc 1 A	-15 V dc 1 A
GPC55F	55	+5 V dc 6 A	+12 V dc 3 A	+15 V dc 1 A	-15 V dc 1 A
SP1394	55	+5.6 V dc 5.3 A	+12 V dc 3 A	-5.2 V dc 1 A	-12 V dc 1 A
SP1394G	55	+5.6 V dc 5.3 A	+12 V dc 3 A	-5.2 V dc 1 A	-12 V dc 1 A
GPC55-5	55	5 V dc 11 A			
GPC55-12	55	12 V dc 4.7 A			
GPC55-15	55	15 V dc 3.7 A			
GPC55-24	55	24 V dc 2.3 A			
GPC55-28	56	28 V dc 2.0 A			
GPC55-48	72	48 V dc 1.5 A			

NOTES:

1. Maximum ambient temperature for continuous output power is 50 °C.
2. Maximum Relative Humidity 96 %, no condensation.
3. Storage: -40 to +85 °C. Units should be allowed to warm-up under non-condensing conditions before application of power.

CONDITIONS OF ACCEPTABILITY:

When installed in the end use equipment, the following are among the considerations to be made:

The following must be evaluated at end use:

- 1) Fire and mechanical enclosure must be provided.
- 2) A reliable ground (Protective Earth) connection.

Report Number: 095-602108-000

William A. Wenthold
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