



Ref. Certif. No.

US/10873B/UL

IEC SYSTEM FOR CONFORMITY TESTING AND
CERTIFICATION OF ELECTRICAL EQUIPMENT (IECEE)
CB SCHEME

SYSTEME CEI D'ESSAIS DE CONFORMITE ET DE CERTIFICATION
DES EQUIPEMENTS ELECTRIQUES (IECEE)
METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product
Produit

Name and address of the applicant
Nom et adresse du demandeur

Name and address of the manufacturer
Nom et adresse du fabricant

Name and address of the factory
Nom et adresse de l'usine

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

Trademark (if any)
Marque de fabrique (si elle existe)

Model / Type Ref.
Ref. de type

Additional information (if necessary)
Information complémentaire (si nécessaire)

A sample of the product was tested and found
to be in conformity with
*Un échantillon de ce produit a été essayé et a été
considéré conforme à la*

as shown in the Test Report Ref. No.
which forms part of this Certificate
*comme indiqué dans le Rapport d'essais numéro
de référence qui constitue partie de ce Certificat*

Built-in Power Supply

SL Power Electronics Corp.
6050 King Drive, Bldg. A
Ventura, CA 93003, USA

SL Power Electronics Corp.
6050 King Drive, Bldg. A
Ventura, CA 93003, USA

Industrias S L S A d C V
Costa Rica #60, Col Cuahutemoc
Mexicali, Baja California N, Mexico

GNT4WXYZ-XXXG: Input: 100-240 V ac, 5.5-2.5 A, 50/60 Hz
Output: 12 thru 48 V dc, 400 W maximum with forced air cooling.
SP1852G: Input: 100-240 V ac, 5.0-2.0 A, 50/60 Hz
Output: +24 V dc/12.5 A maximum with forced air cooling



SP1852G and GNT4WXYZ-XXXG, where W represents the output voltage which may be any number from 12 thru 48, X indicates the type of input connector which may be the letters A, B or C, Y indicates the type of output connector which may be the letter B or T; Z indicates the type of cover or cover/fan options which may be blank or the letter E or T; -XXX indicates value added configurations that have no impact on safety which may be any number from 001 thru 999; and G indicates compliance to RoHS. (RoHS compliance has not been evaluated by UL.)

This CB Test Report comprises 7 enclosures. The CB Test Certificate was amended on December 21, 2006 and February 22, 2007 to update information in enclosures, add new model, new ratings and tests.

PUBLICATION EDITION

IEC 60950-1 (2001) First Edition,
Additional evaluation to CENELEC Common Modifications also included.
See-Test Report for National Differences.

E135803-A34-CB-1

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification



Underwriters Laboratories Inc. / Certification Programs Office
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Date:
Issued: 2006 October 10
Amended: 2006 December 21 (Am. 1)
Amended: 2007 February 22 (Am. 2)

Signature:

Jolanta M. Wroblewska

COVER PAGE FOR TEST REPORT

Test Item Description:	Built-in Power Supply
Model/Type Reference:	SP1852G and GNT4WXYZ-XXXG, where W represents the output voltage which may be any number from 12 thru 48; X indicates the type of input connector which may be the letters A, B or C; Y indicates the type of output connector which may be the letter B or T; Z indicates the type of cover or cover/fan options which may be blank or the letter E or T; -XXX indicates value added configurations that have no impact on safety which may be any number from 001 thru 999; and G indicates compliance to RoHS. (ROHS compliance has not been evaluated by UL.)
Rating(s):	GNT4WXYZ-XXXG: Input: 100-240 V ac, 5.5-2.5 A, 50/60 Hz Output: 12 thru 48 V dc, 400 W maximum with forced air cooling. SP1852G: Input: 100-240 V ac, 5.0-2.0 A, 50/60 Hz Output: +24 V dc/12.5 A maximum with forced air cooling
Standards:	IEC 60950-1:2001, First Edition
Applicant Name and Address:	SL POWER ELECTRONICS CORP. 6050 KING DRIVE, BLDG. A VENTURA, CA 93003
Factory Location(s):	INDUSTRIAS S L S A DE C V COSTA RICA #60 COL CUAHUTEMOC MEXICALI BAJA CALIFORNIA N MEXICO

This Report includes the following parts, in addition to this cover page:

1. Specific Technical Criteria
2. Clause Verdicts
3. Critical Components
4. Test Results
5. Enclosures
 - a. National Differences
 - b. Marking Plate
 - c. Photographs
 - d. Schematics + PWB
 - e. Miscellaneous

The original report was modified on 2007-02-20 to include the following changes/additions:

- 1, New Model SP1852G was added to Models Ratings.
- 2, Test Item Particulars was revised to change the mains supply tolerance.
- 3, General Product Information, Technical Consideration and Conditions of Acceptability were revised.
- 4, The following sub-clauses were revised: 1.5.3, 1.7.7.1, 4.3.13.5, 4.4.1, 5.3.2, Annex B, B.1, Annex K, K5.
- 5, The following tables were revised: 1.5.1, 1.6.2, 2.10.3/2.10.4, 4.5, 5.2 and 5.3.
- 6, The following Enclosures were revised: Marking Plate, Photographs, Schematic and PWB, and Miscellaneous.

All applicable tests according to the above standard(s) have been carried out.

Test results are valid only for the tested equipment.

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Test Report issued under
the responsibility of:



TEST REPORT
IEC 60950-1, First Edition
Information technology equipment-Safety
Part 1: General Requirements

Report Reference No: E135803-A34-CB-1

Tested By: Ross Sacolles

Approved By: Ahmad Daoudi

Supervised By: David Feusier

Date of issue: 2006-10-06

CB Testing Laboratory: Underwriters Laboratories Inc.

Address: 455 E. Trimble Rd., San Jose, CA, 95131-1230, USA

Testing location/procedure: CBTL [] RMT [] SMT [x] TMP [] WMT []

Testing Location/address: N/A

Applicant's name: SL POWER ELECTRONICS CORP.

6050 KING DRIVE, BLDG. A

Address: VENTURA, CA 93003

Test specification:

Standard: IEC 60950-1:2001, First Edition

Test procedure: CB Scheme

Non-standard test method: N/A

Test Report Form No.: IEC60950_1B

Test Report Form originator: SGS Fimko Ltd

Master TRF: dated 2003-03

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IEC 60070-2.

Test item description	Built-in Power Supply
Trade Mark	Condor
Model/Type reference	SP1852G and GNT4WXYZ-XXXG, where W represents the output voltage which may be any number from 12 thru 48; X indicates the type of input connector which may be the letters A, B or C; Y indicates the type of output connector which may be the letter B or T; Z indicates the type of cover or cover/fan options which may be blank or the letter E or T; -XXX indicates value added configurations that have no impact on safety which may be any number from 001 thru 999; and G indicates compliance to RoHS. (ROHS compliance has not been evaluated by UL.)
Manufacturer	SL POWER ELECTRONICS CORP. 6050 KING DRIVE, BLDG. A VENTURA, CA 93003
Rating	GNT4WXYZ-XXXG: Input: 100-240 V ac, 5.5-2.5 A, 50/60 Hz Output: 12 thru 48 V dc, 400 W maximum with forced air cooling. SP1852G: Input: 100-240 V ac, 5.0-2.0 A, 50/60 Hz Output: +24 V dc/12.5 A maximum with forced air cooling

Summary of Testing:

Input: Single-Phase (1.6.2) ; Heating (4.5.1, 1.4.12, 1.4.13) ; Electric Strength (5.2.2) ; Abnormal Operation (5.3.1 - 5.3.8.2) ; Transformer Abnormal Operation (5.3.3, 5.3.6b, Annex C.1)

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

Test item particulars :

Equipment mobility.....	for building-in
Operating condition.....	continuous
Mains supply tolerance (%).....	+6%, -10%
Tested for IT power systems.....	Yes, considered
IT testing, phase-phase voltage (V).....	230
Class of equipment	Class I (earthed)
Mass of equipment (kg)	1.2
Protection against ingress of water.....	IP X0

Possible test case verdicts:

- test case does not apply to the test object: N / A
- test object does meet the requirement: P(Pass)

- test object does not meet the requirement: F(Fail)

Testing:

Date(s) of receipt of test item: 2006-06-08, 2007-01-24

Date(s) of Performance of tests: 2006-06-08, 2006-08-24, 2007-01-24, 2007-01-30

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Refer to the Cover Page For Test Report for a list of all Factory Locations.

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2006-12-18 to include the following changes/additions:
Enclosure Manuals, Installation Instructions (6-02) was revised/replaced to include the latest version of the Installation Instruction in the report.

The original report was modified on 2007-02-20 to include the following changes/additions:
1, New Model SP1852G was added to Models Ratings.
2, Test Item Particulars was revised to change the mains supply tolerance.
3, General Product Information, Technical Consideration and Conditions of Acceptability were revised.
4, The following sub-clauses were revised: 1.5.3, 1.7.7.1, 4.3.13.5, 4.4.1, 5.3.2, Annex B, B.1, Annex K, K5.
5, The following tables were revised: 1.5.1, 1.6.2, 2.10.3/2.10.4, 4.5, 5.2 and 5.3.
6, The following Enclosures were revised: Marking Plate, Photographs, Schematic and PWB, and Miscellaneous.

Product Description

SP1852G and the GNT400 Series are component switch-mode power supplies intended to be built into an end product. The SP1852G input/output connections are via PCB edge fingers connector on the end equipment, and the GNT400 Series are provided with input/output connectors for connection to the end use equipment.

Model Differences

The power supplies in the GNT400 Series are similar to each other and differ only in secondary circuit for the different outputs.

The GNT400 Series is available with three different types of input connector and two different type of output connector. Also, there are two different cover/fan options; option E with fan mounted on end and includes an appliance inlet for the input, and option T with fan mounted on top.

The SP1852G is a custom power supply. which is a repackaged GNT424ABG. The power supply is

provided with two DC fans designed to turn on only when the Primary heatsink is >85 °C. The power supply is also cooled with a fan (rated 44 CFM) provided in the end equipment.

The following are the various options for the GNT4WXYZ-XXXG:

W = Main Output from 12 thru 48

12 = 12 V dc/33.3 A

15 = 15 V dc/26.7 A

24 = 24 V dc/16.7 A

28 = 28 V dc/14.3 A

36 = 36 V dc/11.1 A

48 = 48 V dc/8.4 A

X = Input Connectors A, B, or C

A = Eby P/N 5002-03-N-12

B = Phoenix Contact P/N 1732034 (GMKDSP 3/3)

C = Amp P/N MTA-156 Series

Y = Output Connectors

B = Bussbars

T = Phoenix Contact P/N 1731721

Z = Cover Options

Blank = Standard Mini Cover

E = Cover with Vertically Mounted Fan on End When used, AC inlet is used (Schurter P/N 6100.3100) and input

connector X is C by default.

T = Cover with Horizontally Mounted Fan on Top

-XXX = Value added configurations that have no impact on safety which may be any number from 001 thru 999

G = Compliance to RoHS

Additional Information

The schematics for these models are kept in file at the CB Testing Laboratory mentioned in the first page of this test report, and can be provided by the manufacturer upon request by NCBs.

The power supplies described in this report have the same model number/construction as the power supplies described in Report Ref. # E116994-A33, CB Certificate US/10844/UL. .

Technical Considerations

The product was submitted and tested for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of: Tested at 40°C but product can be operated at higher ambient. Consult factory for application with convection cooling and usage at higher operating ambient temperature. Model SP1852G was submitted and tested at 50 °C ambient.

The product is intended for use on the following power systems: TN, IT

The equipment disconnect device is considered to be: Appliance inlet provided on models with option E. Model SP1852G disconnect device is provided on the end equipment (AC inlet provided), which should be evaluated in the end application.

The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual.

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

The following Production-Line tests are conducted for this product: Earthing Continuity on models with option E., Electric Strength

The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-Earthed Dead Metal: 328 Vrms, 428 Vpk,

The following secondary output circuits are SELV: All.

The following secondary output circuits are at hazardous energy levels: All.

The power supply terminals and/or connectors are: Not investigated for field wiring

The maximum investigated branch circuit rating is: 20 A

The investigated Pollution Degree is: 2

Proper bonding to the end-product main protective earthing termination is: Required (except for models with option "E")

The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C): T5, T6, T100 (Class F, 155°C)

The following components require special consideration during end-product Thermal (Heating) tests due to the indicated maximum temperature measurements during component-level testing: T5 coil (111°C), PWB by Q28, Q29 (100°C).

The maximum continuous power supply output (Watts) relied on forced air cooling from: 400 W, with fan rated at 8.0 cfm mounted on the cover of the power supply with option E and F (see photos for location). Model SP1852G has a maximum continuous power of 300 W with forced air cooling provided in the end equipment, and two fans on the power supply designed to turn on only when the Primary heatsink is >85 °C.

The equipment is suitable for direct connection to: AC mains supply on models with option E.

The power supply shall be installed in compliance with the enclosure, mounting, spacing, casualty and segregation requirements of the end-use application.

This power supply has been evaluated for use in a 40°C ambient. An additional evaluation should be made if the power supply is intended to be used in an elevated ambient. Model SP1852G has been evaluated for use in a 50 °C ambient.

A Heating Test should be conducted in the end-product. Consideration should be given to measuring the temperature on power electronic components, inductors and transformer windings when the power supply is installed in the end-use equipment. All inductors and transformers comply with a min. Class F (155°C) limit.

The input connector for models with option E has been evaluated for field connection and all other models the input/output are not acceptable for field connection, they are only intended for connection to mating connectors of internal wiring inside the end-use machine. The acceptability of this and the mating connectors relative to secureness, insulating materials, and temperature shall be considered in the end-product evaluation.

An Earthing Test between the Chassis and input/output ground references was successfully performed at 40A. The suitability of this connection should be determined in the end product. To ensure that the secondary and front panel are earthed, the chassis should be bonded to the protective earth in the end product.

All tests were conducted with internal R/C (JDYX2) fuses, rated T 6.3 A, 250 V, and a 20 A external circuit breaker. Fuses located on both line and neutral side of the input.

The unit was evaluated with integral forced air-cooling of 8.0 CFM fan provided on models with option E and

T. The SP1852G was evaluated with two integral forced air cooling designed to turn on only when the Primary heatsink is $>85^{\circ}\text{C}$ and also cooled with a fan (rated 44 CFM) provided in the end equipment.

The GNT400 input and output are isolated from each other by Reinforced insulation. Model SP1852G, which is isolated from input to output by Basic insulation only at the input/output PWB due to the grounding of the output return in the end application. Reinforced insulation is provided in all other location; i.e. A1 and A2 PWB, T5, T6, U7, U11, and U13.

The PWB is rated minimum 130°C .

Installation Instructions can be found at the SL Power Electronics website at www.slpower.com or can be requested by mail from SL Power Electronics Corp., 6050 King Drive, Bldg. A, Ventura, CA. 93003, U.S.A.

COVER PAGE FOR TEST REPORT

Product Category:	Power Supplies for Information Technology Equipment Including Electrical Business Equipment
Product Category CCN:	QQGQ2, QQGQ8
Test Procedure:	Component Recognition
Product:	Built-in Power Supply
Model/Type Reference:	SP1852G and GNT4WXYZ-XXXG, where W represents the output voltage which may be any number from 12 thru 48; X indicates the type of input connector which may be the letters A, B or C; Y indicates the type of output connector which may be the letter B or T; Z indicates the type of cover or cover/fan options which may be blank or the letter E or T; -XXX indicates value added configurations that have no impact on safety which may be any number from 001 thru 999; and G indicates compliance to RoHS. (ROHS compliance has not been evaluated by UL.)
Rating(s):	GNT4WXYZ-XXXG: Input: 100-240 V ac, 5.5-2.5 A, 50/60 Hz Output: 12 thru 48 V dc, 400 W maximum with forced air cooling. SP1852G: Input: 100-240 V ac, 5.0-2.0 A, 50/60 Hz Output: +24 V dc/12.5 A maximum with forced air cooling
Standards:	UL 60950-1, 1st Edition, 2006-07-07 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-03, 1st Edition, 2003-11 (Information Technology Equipment - Safety - Part 1: General Requirements)
Applicant Name and Address:	SL POWER ELECTRONICS CORP 6050 KING ST VENTURA CA 93003
This Report includes the following parts, in addition to this cover page:	
<ol style="list-style-type: none">1. Specific Inspection Criteria2. Specific Technical Criteria3. Clause Verdicts4. Critical Components5. Test Results6. National Differences7. Enclosures	

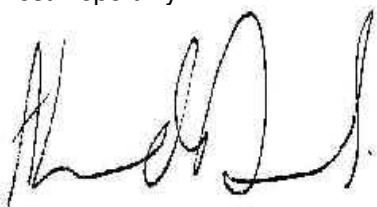
This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of Underwriters Laboratories Inc. ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

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Any information and documentation involving UL Mark services are provided on behalf of Underwriters Laboratories Inc. (UL) or any authorized licensee of UL.

Test Report By:



Ahmad Daoudi
Engineering Project Handler
Underwriters Laboratories Inc.

Reviewed By:



David Feusier
Staff Engineer
Underwriters Laboratories Inc.

SPECIFIC TECHNICAL CRITERIA

UL 60950-1, First Edition Information technology equipment - Safety- Part 1: General Requirements	
Report Reference No	E135803-A34-UL-1
Compiled by	Ahmad Daoudi
Reviewed by	David Feusier
Date of issue	2006-10-06
Standards	UL 60950-1, 1st Edition, 2006-07-07 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-03, 1st Edition, 2003-11 (Information Technology Equipment - Safety - Part 1: General Requirements)
Test procedure	Component Recognition
Non-standard test method	N/A
Test item description	Built-in Power Supply
Trademark	Condor
Model and/or type reference	SP1852G and GNT4WXYZ-XXXG, where W represents the output voltage which may be any number from 12 thru 48; X indicates the type of input connector which may be the letters A, B or C; Y indicates the type of output connector which may be the letter B or T; Z indicates the type of cover or cover/fan options which may be blank or the letter E or T; -XXX indicates value added configurations that have no impact on safety which may be any number from 001 thru 999; and G indicates compliance to RoHS. (ROHS compliance has not been evaluated by UL.)
Rating(s)	GNT4WXYZ-XXXG: Input: 100-240 V ac, 5.5-2.5 A, 50/60 Hz Output: 12 thru 48 V dc, 400 W maximum with forced air cooling. SP1852G: Input: 100-240 V ac, 5.0-2.0 A, 50/60 Hz Output: +24 V dc/12.5 A maximum with forced air cooling

Particulars: test item vs. test requirements

Equipment mobility: for building-in
Operating condition: continuous
Mains supply tolerance (%): +6%, -10%
Tested for IT power systems: Yes, considered
IT testing, phase-phase voltage (V): 230
Class of equipment: Class I (earthed)
Mass of equipment (kg): 1.2
Protection against ingress of water: IP X0

Possible test case verdicts:

- test case does not apply to the test object: N / A
- test object does meet the requirement: Pass
- test object does not meet the requirement: Fail (acceptable only if a corresponding, less stringent national requirement is "Pass")

General remarks:

- "(see Enclosure #)" refers to additional information appended to the Test Report
- "(see appended table)" refers to a table appended to the Test Report
- Throughout the Test Report a point is used as the decimal separator

GENERAL PRODUCT INFORMATION:	
CA1.0	Report Summary
CA1.1	N/A
CB1.0	Product Description
CB1.1	SP1852G and the GNT400 Series are component switch-mode power supplies intended to be built into an end product. The SP1852G input/output connections are via PCB edge fingers connector on the end equipment, and the GNT400 Series are provided with input/output connectors for connection to the end use equipment.
CC1.0	Model Differences
CC1.1	<p>The power supplies in the GNT400 Series are similar to each other and differ only in secondary circuit for the different outputs.</p> <p>The GNT400 Series is available with three different types of input connector and two different type of output connector. Also, there are two different cover/fan options; option E with fan mounted on end and includes an appliance inlet for the input, and option T with fan mounted on top.</p> <p>The SP1852G is a custom power supply, which is a repackaged GNT424ABG. The power supply is provided with two DC fans designed to turn on only when the Primary heatsink is >85 °C. The power supply is also cooled with a fan (rated 44 CFM) provided in the end equipment.</p> <p>The following are the various options for the GNT4WXYZ-XXXG:</p> <p>W = Main Output from 12 thru 48 12 = 12 V dc/33.3 A 15 = 15 V dc/26.7 A 24 = 24 V dc/16.7 A 28 = 28 V dc/14.3 A 36 = 36 V dc/11.1 A 48 = 48 V dc/8.4 A</p> <p>X = Input Connectors A, B, or C A = Eby P/N 5002-03-N-12 B = Phoenix Contact P/N 1732034 (GMKDSP 3/3) C = Amp P/N MTA-156 Series</p> <p>Y = Output Connectors B = Bussbars T = Phoenix Contact P/N 1731721</p> <p>Z = Cover Options Blank = Standard Mini Cover E = Cover with Vertically Mounted Fan on End When used, AC inlet is used (Schurter P/N 6100.3100) and input connector X is C by default.</p>

	<p>T = Cover with Horizontally Mounted Fan on Top</p> <p>-XXX = Value added configurations that have no impact on safety which may be any number from 001 thru 999</p> <p>G = Compliance to RoHS</p>
CD1.0	Additional Information
CD1.1	<p>The schematics for these models are kept in file at the CB Testing Laboratory mentioned in the first page of this test report, and can be provided by the manufacturer upon request by NCBs.</p> <p>The power supplies described in this report have the same model number/construction as the power supplies described in Report Ref. # E116994-A33, CB Certificate US/10844/UL. .</p>
CE1.0	Technical Considerations
CE1.2	The product was submitted and tested for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: Tested at 40°C but product can be operated at higher ambient. Consult factory for application with convection cooling and usage at higher operating ambient temperature. Model SP1852G was submitted and tested at 50 °C ambient.
CE1.4	The product is intended for use on the following power systems: TN, IT
CE1.5	The equipment disconnect device is considered to be: Appliance inlet provided on models with option E. Model SP1852G disconnect device is provided on the end equipment (AC inlet provided), which should be evaluated in the end application.
CE1.14	The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual.
CF1.0	Engineering Conditions of Acceptability
CF1.1	<p>For use only in or with complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.</p> <p>When installed in an end-product, consideration must be given to the following:</p>
CF1.2	The following Production-Line tests are conducted for this product: Earthing Continuity on models with option E., Electric Strength
CF1.3	The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-Earthed Dead Metal: 328 Vrms, 428 Vpk,
CF1.5	The following secondary output circuits are SELV: All.
CF1.6	The following secondary output circuits are at hazardous energy levels: All.
CF1.11	The power supply terminals and/or connectors are: Not investigated for field wiring
CF1.12	The maximum investigated branch circuit rating is: 20 A
CF1.13	The investigated Pollution Degree is: 2
CF1.15	Proper bonding to the end-product main protective earthing termination is: Required (except for models with option "E")
CF1.18	The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2

	insulation system with the indicated rating greater than Class A (105°C): T5, T6, T100 (Class F, 155°C)
CF1.20	The following components require special consideration during end-product Thermal (Heating) tests due to the indicated maximum temperature measurements during component-level testing: T5 coil (111 °C), PWB by Q28, Q29 (100°C).
CF1.21	The maximum continuous power supply output (Watts) relied on forced air cooling from: 400 W, with fan rated at 8.0 cfm mounted on the cover of the power supply with option E and F (see photos for location). Model SP1852G has a maximum continuous power of 300 W with forced air cooling provided in the end equipment, and two fans on the power supply designed to turn on only when the Primary heatsink is >85 °C.
CF1.23	The equipment is suitable for direct connection to: AC mains supply on models with option E.
CF2.0	The power supply shall be installed in compliance with the enclosure, mounting, spacing, casualty and segregation requirements of the end-use application.
CF2.1	This power supply has been evaluated for use in a 40°C ambient. An additional evaluation should be made if the power supply is intended to be used in an elevated ambient. Model SP1852G has been evaluated for use in a 50 °C ambient.
CF2.2	A Heating Test should be conducted in the end-product. Consideration should be given to measuring the temperature on power electronic components, inductors and transformer windings when the power supply is installed in the end-use equipment. All inductors and transformers comply with a min. Class F (155°C) limit.
CF2.3	The input connector for models with option E has been evaluated for field connection and all other models the input/output are not acceptable for field connection, they are only intended for connection to mating connectors of internal wiring inside the end-use machine. The acceptability of this and the mating connectors relative to secureness, insulating materials, and temperature shall be considered in the end-product evaluation.
CF2.4	An Earthing Test between the Chassis and input/output ground references was successfully performed at 40A. The suitability of this connection should be determined in the end product. To ensure that the secondary and front panel are earthed, the chassis should be bonded to the protective earth in the end product.
CF2.5	All tests were conducted with internal R/C (JDYX2) fuses, rated T 6.3 A, 250 V, and a 20 A external circuit breaker. Fuses located on both line and neutral side of the input.
CF2.6	The unit was evaluated with integral forced air-cooling of 8.0 CFM fan provided on models with option E and T. The SP1852G was evaluated with two integral forced air cooling designed to turn on only when the Primary heatsink is >85 °C and also cooled with a fan (rated 44 CFM) provided in the end equipment.
CF2.7	The GNT400 input and output are isolated from each other by Reinforced insulation. Model SP1852G, which is isolated from input to output by Basic insulation only at the input/output PWB due to the grounding of the output return in the end application. Reinforced insulation is provided in all other location; i.e. A1 and A2 PWB, T5, T6, U7, U11, and U13.
CF2.8	The PWB is rated minimum 130 °C.
CF2.9	Installation Instructions can be found at the SL Power Electronics website at www.slpower.com or can be requested by mail from SL Power Electronics Corp., 6050 King Drive, Bldg. A, Ventura, CA. 93003, U.S.A.

Demko Certificate

Product: Built-in Power Supply
Manufacturer: SL Power Electronics Corp.
6050 King Drive, Bldg. A
Ventura, CA 93003, USA
Production site: Industrias S L S A DE C V
Costa Rica #60
Col Cuahutemoc, Mexicali, Baja California N Mexico
Certified by request of: SL Power Electronics Corp.
6050 King Drive, Bldg. A
Ventura, CA 93003, USA
Trademark: CONDOR
Model/Type ref.: See appendix
Rated current or power: 5.5-2.5 A
Rated voltage: 100-240 V ac, 50/60 Hz
Insulation Class: I
Degree of protection: IP X0
Additional information: Output: 12 thru 48 V, 400 W maximum with forced air-cooling.

Variants covered by this certificate are specified in the attached appendix.
Detailed specification of the certified product(s) is listed in the appendix.

A sample of the product has been tested and found in conformity with EN 60950-1:2001, as shown in the Test Report from Underwriters Laboratories with ref. No. E135803-A34-CB-1 dated 2006-10-06, amendment 1 dated 2006-12-18 and amendment 2, dated 2007-02-20

Furthermore, the product complies with the national deviations in Denmark.

Date of expiry: 2010-12-01

UL International Demko A/S is a body notified to the Member States and Commission of the European Communities according to the provisions of Article 8 of the Low Voltage Directive.

The Manufacturer complies with the Production Surveillance Requirements. Products included in this certificate are allowed to carry the registered approval marks of UL International Demko A/S, or for cables <DEMKO>. The name of UL International Demko A/S can be used in the marketing of the products. This Statement is only valid for products, which are identical to the tested product, and manufactured at the above-mentioned production site(s). UL International Demko A/S has to be informed in writing about any changes, in accordance with the "UL International Demko A/S Standard Terms and Conditions" for UL International Demko A/S services. The validity of this certificate is shortened if the EU legislation requires re-testing and re-certification, due to new standards or amendments coming into force, before the expiry date.

Herlev, 2007-03-06


Karina Christiansen
Certification Manager

UL International Demko A/S

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Telephone: +45 44856565
Fax: +45 44856500



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Appendix to Demko Certificate No. 142291-02

The Certificate covers the following:

142291-02-0001; GNT4WXYZ-XXXG;

142291-02-0002; SP1852G;

Type key: W represents the output voltage which may be any number from 12 thru 48; X indicates the type of input connector which may be the letters A, B or C; Y indicates the type of output connector which may be the letter B or T; Z indicates the type of cover or cover/fan options which may be blank or the letter E or T; -XXX indicates value added configurations that have no impact on safety which may be any number from 001 thru 999; and G indicates compliance to RoHS. (ROHS compliance has not been evaluated by UL.)

This certificate replaces the certificate No. 142991-01, dated 2006-11-30.

UL International Demko A/S has issued a new certificate due to adding model, update of Manuel and changes in technical information.

The certificate has been issued on the basis of CB certificate (CB Test certificate) No. US/10873A/UL, issued by Underwriters Laboratories, dated 2006-12-21 and No. US/10873B/UL, dated 2007-02-22.

Herlev, 2007-03-06


Karina Christensen
Certification Manager

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