


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 <i>Produit</i>	Switching Power Supply
Name and address of the applicant <i>Nom et adresse du demandeur</i>	SL Power Electronics Corp 6050 King St Ventura, CA 93003, USA
Name and address of the manufacturer <i>Nom et adresse du fabricant</i>	SL Power Electronics Corp 6050 King St Ventura, CA 93003, USA
Name and address of the factory <i>Nom et adresse de l'usine</i>	SL Power Electronics Xianghe Anping Economic & Tech Developing Zone Xianghe, Hebei 065402, China
Rating and principal characteristics <i>Valeurs nominales et caractéristiques principales</i>	Input: 100-240 V~, 50-60 Hz, 4.0-2.0 A Output: 24 Vdc, 11.25 A, 5 Vdc, 0.2 A
Trademark (if any) <i>Marque de fabrique (si elle existe)</i>	
Model / Type Ref. <i>Ref. de type</i>	MINT2270A1976EXX, where A is any letter A to Z and XX is any number between 01 and 99
Additional information (if necessary) <i>Information complémentaire (si nécessaire)</i>	The CB Test Report comprises 7 enclosures.
A sample of the product was tested and found to be in conformity with <i>Un échantillon de ce produit a été essayé et a été considéré conforme à la</i>	PUBLICATION EDITION IEC 60601-1 (1988) Second Edition, with Amendment No. 1 (1991) and No. 2 (1995) with the exception of: Clause 36, Electromagnetic Compatibility, Clause 48, Biocompatibility and Clause 52.1, Programmable Electronic Systems. Inclusive of CENELEC Common Modifications. See Test Report for National Differences.
as shown in the Test Report Ref. No. which forms part of this Certificate <i>comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat</i>	E116994-A46-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

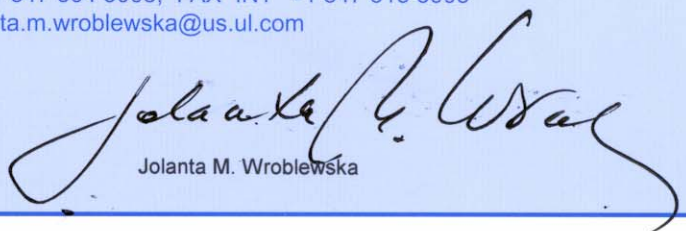


**Underwriters
Laboratories**

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Date: Issued: 2008 August 27

Signature:



Jolanta M. Wroblewska

COVER PAGE FOR TEST REPORT

Product Category:	Power Supplies, Medical and Dental
Product Category CCN:	QQHM2, QQHM8
Test Procedure:	Component Recognition
Product:	Switching Power Supply
Model/Type Reference:	MINT2270A1976EXX, where A is any letter A to Z and XX is any number between 01 and 99
Rating(s):	Input: 100-240 V~, 50-60 Hz, 4.0-2.0 A Output: 24 Vdc, 11.25 A 5 Vdc, 0.2 A
Standards:	UL 60601-1, 1st Edition, 2006-04-26 (Medical Electrical Equipment, Part 1: General Requirements for Safety) CAN/CSA-C22.2 No. 601.1-M90, 2005 (Medical Electrical Equipment - Part 1: General Requirements for Safety)
Applicant Name and Address:	SL POWER ELECTRONICS CORP 6050 KING ST VENTURA CA 93003 UNITED STATES
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.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

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:




Linus Park
Lead Engineering Associate
Underwriters Laboratories Inc.

Reviewed By:



Elizabeth Drew
Senior Project Engineer
Underwriters Laboratories Inc.

SPECIFIC TECHNICAL CRITERIA

<p>TEST REPORT UL 60601-1 Medical Electrical Equipment Part 1: General requirements for safety</p>	
Report Reference No	E116994-A46-UL-1
Compiled by	Linus Park
Reviewed by	Elizabeth Drew
Date of issue	2008-08-26
Standards	UL 60601-1, 1st Edition, 2006-04-26 (Medical Electrical Equipment, Part 1: General Requirements for Safety) CAN/CSA-C22.2 No. 601.1-M90, 2005 (Medical Electrical Equipment - Part 1: General Requirements for Safety)
Test procedure	Component Recognition
Non-standard test method	N/A
Test item description	Switching Power Supply
Trademark	
Model and/or type reference	MINT2270A1976EXX, where A is any letter A to Z and XX is any number between 01 and 99
Rating(s)	Input: 100-240 V~, 50-60 Hz, 4.0-2.0 A Output: 24 Vdc, 11.25 A 5 Vdc, 0.2 A


GENERAL INFORMATION		
Test item particulars (see also clause 5):		
Classification of installation and use	For Building-in	
Supply connection	Terminal Block	
Accessories and detachable parts included in the evaluation	None	
Options included	None	
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) (acceptable only if a corresponding, less stringent national requirement is "Pass")	
Abbreviations used in the report:		
- normal condition	N.C. - single fault condition	S.F.C.
- operational insulation	OP - basic insulation	BI
- basic insulation between parts of opposite polarity:	BOP - supplementary insulation	SI
- double insulation	DI - reinforced insulation	RI
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	The equipment (DC power supply) covered by this report, is a component, which is intended for use in end-product equipment used in a hospital or related health care facility, evaluated to standard Medical Equipment. The MINT2270A1976E01 is designed for building-in to an end piece of equipment.
CC1.0	Model Differences
CC1.1	All models within the power supply series are identical with exception of the minor non-safety changes noted below as part of the nomenclature.

	<p>MINT 2 270 A 19 76 E 01 1 2 3 4 5 6 7 8</p> <ol style="list-style-type: none"> 1. Medical Internal Model number prefix. 2. Signifies number of outputs: 2 3. Output wattage: 270 = 270 W 4. Signifies generational differences such as energy star level changes, EMC level changes; may be any letter from A to Z. 5. Multiple output code: 19 = 24 V and 5 V 6. Output connector options: 76 = 4 Pin Terminal Block, Dinkle DT-25-B01W-04 and 6 Pin Landwin 2502P0600T. 7. Input connector options: E = 3 Pin Terminal Block, Dinkle DT-25-B01W-03. 8. Configuration: 01 = standard, 02-99 for modifications. 	
CD1.0	Additional Information	
CD1.1	The schematic for this is kept on file at the CB Testing Laboratory and can be provided by the manufacturer upon request by CBTLs.	
CE1.0	Technical Considerations	
CE1.1	The product was investigated to the following additional standards:	UL 60601-1, 1st Edition, 2006-04-26 (includes National Differences for USA), EN 60601-1: 1990 + A1:1993 + A2:1995 + A13:1996, CAN/CSA-C22.2 No. 601.1-M90 (R2005) (includes National Differences for Canada), (except EMC limitations, EN 60601-1-2, Biocompatibility, EN 10993-1, Programmable Electronic Systems, IEC 60601-1-4)
CE1.2	The product was not investigated to the following standards or clauses:	Clause 36, Electromagnetic Compatibility (IEC 601-1-2), Clause 48, Biocompatibility (ISO 10993-1), Clause 52.1, Programmable Electronic Systems (IEC 601-1-4)
CE1.3	The product is Classified only to the following hazards:	Shock, Fire, Casualty
CE1.4	The degree of protection against harmful ingress of water is:	Ordinary
CE1.6	The mode of operation is:	Continuous
CE1.8	The product is suitable for use in the presence of a flammable anesthetics mixture with air or oxygen or with nitrous oxide:	No
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>	

CF2.0	Power supply has been evaluated as Class I, continuous operation, ordinary equipment and has not been evaluated for use in the presence of a flammable anesthetic mixture with air, oxygen or nitrous oxide.	--
CF2.1	The power supply covered by this report are components intended for use in end-product equipment which are used in a hospital or related health care facility.	--
CF2.2	The component shall be installed in compliance with the enclosure, mounting, spacing, casualty markings and segregation requirements of the end-use application.	--
CF2.3	Consideration should be given to measuring the temperature, leakage and earthing when the power supply is installed in the end-use equipment.	--
CF2.4	The input/output connectors were not evaluated for field connections, they are only intended for factory connection of internal wiring inside the end-use equipment.	--
CF2.5	The output circuits have not been evaluated for direct patient connection (Type B, BF or CF).	--
CF2.6	The component should be properly bonded to ground in the end-use equipment.	--
CF2.7	The power supply was evaluated as Reinforced insulation between primary and secondary; basic insulation between primary to ground; basic insulation between primary to mounting hole (H1).	--
CF2.8	Under normal and single fault conditions, the outputs do not exceed 25 V ac or 60 V dc.	--
CF2.9	Transformers (T301 and T201) are provided with a Class B (130°C) Insulation System.	--
CF3	The power supply was evaluated for an evaluated ambient of 40°C.	--
CF3.1	Consideration should be given in the end-product to the following measured working voltages. Primary to GND (C103 to GND): 314 Vrms, 432 Vpk; Primary to Secondary: 272 Vrms, 440 Vpk.	--

Demko Certificate

Product: Switching Power Supply
Manufacturer: SL POWER ELECTRONICS CORP
6050 KING ST
VENTURA CA 93003, UNITED STATES
Production site: SL POWER ELECTRONICS XIANGHE
ANPING ECONOMIC & TECH DEVELOPING ZONE
XIANGHE,
HEBEI 065402 CHINA
Certified by request of: SL POWER ELECTRONICS CORP
6050 KING ST
VENTURA CA 93003, UNITED STATES
Trademark: 
Model/Type ref.: MINT2270A1976EXX
Rated current or power: See rated voltage
Rated voltage: 100-240 V-, 50-60 Hz, 4.0-2.0 A
Insulation Class: I
Degree of protection:
Additional information: Type key: where A is any letter A to Z and XX is any number between 01 and 99, for building-in

A sample of the product has been tested and found in conformity with EN 60601-1:1990+A1:1993+A2:1995+A13:1996, as shown in the Test Report with ref. No. E116994-A46-CB-1 dated 2008-08-26.

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

Date of expiry: 2018-08-27

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, 2008-09-08


Jan-Erik Storgaard
Certification Manager

UL International Demko A/S

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Appendix to Demko Certificate No. 145935-01

This certificate has been issued on the basis of CB Certificate (CB Test Certificate) No. US/13001/UL, issued by Underwriters Laboratories Inc., dated 2008-08-27

Herlev, 2008-09-08


Jan-Erik Storgaard
Certification Manager

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