

Description

UL TEST REPORT AND PROCEDURE

Standard:	UL 60601-1, 1st Edition, 2006-04-26 , CSA CAN/CSA-C22.2 No. 601.1-M90 (R2005)
Certification Type:	Component Recognition
CCN:	QQHM2 / QQHM8
Complementary CCNs:	QQHM8
Product:	Component Power Supply
Model:	HWS1000-24/ME HWS1000-36/ME HWS1000-48/ME
Rating:	Input (all models): 100-240Vac, 13.5A, 50/60Hz
	Output: Model HWS1000-24/ME 24Vdc, 46A
	Output: Model HWS1000-36/ME 36Vdc, 30.7A
	Output: Model HWS1000-48/ME 48Vdc, 23A
Applicant Name and Address:	TDK-LAMBDA CORP NAGAOKA TECHNICAL CENTER R&D DIV 2704-1 SETTAYA-MACHI NAGAOKA-SHI NIIGATA 940-1195, JAPAN

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 UL LLC ('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 as applicable.

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

Prepared by: Jun Orito, Project Handler Reviewed by: Tsutomu Abe, Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

- A. Authorization - The Authorization page may include additional Factory Identification Code markings.
- B. Generic Inspection Instructions -
 - i. **Part AC** details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
 - ii. **Part AE** details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
 - iii. **Part AF** details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

Product is component power supply series for building-in, intended to be located after a medical approved mains isolation transformer into medical equipment.

Refer to the Report Modifications page for any modifications made to this report.

Model Differences

Models HWS1000-24/ME, HWS1000-36/ME, HWS1000-48/ME are identical except for output rating, transformer T201 and Inductor L401.

Additional Information

The CB Scheme Test Certificate and Report Ref. No. 12016985001 dated 02-Apr-08 was prepared by TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln, Germany.

Technical Considerations

- The product was investigated to the following additional standards: UL 60601-1, 1st Edition, 2006-04-26 (includes National Differences for USA) , CAN/CSA-C22.2 No. 601.1-M90 (R2005) (includes National Differences for Canada)
- The following additional investigations were conducted: N/A
- The product was not investigated to the following standards or clauses: Clause 36, Electromagnetic Compatibility (IEC 601-1-2)
- The following accessories were investigated for use with the product: N/A
- The product is Classified only to the following hazards: Shock , Fire , Casualty
The degree of protection against harmful ingress of water is: Ordinary
The mode of operation is: Continuous
The product is suitable for use in the presence of a flammable anesthetics mixture with air or oxygen or with nitrous oxide: No

Engineering Conditions of Acceptability

For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. When installed in an end-product, consideration must be given to the following:

- Product was investigated for operation at 50°C ambient.
The metal chassis is to be reliably connected to protective bonding in end use equipment. The reliability of the PWB earth trace was not investigated.
The product is for building in and intended to be powered from a medical grade Mains isolation

transformer.

The acceptability of leakage currents to be investigated in end product.

Basic isolation is provided between input and output, input and enclosure.




Limitation of Voltage and/or energy after disconnection to be evaluated in end product.

Product is intended for use within an Electrical/Mechanical/Fire enclosure. Parts of the enclosure were not tested to be part of end use enclosure

The input terminal block TB1 is suitable for factory wiring only.

The output of the power supply is not operator accessible.

Limited voltage and energy was not investigated and needs to be investigated and considered in the end product.

Markings and instructions	
Clause Title	Marking or Instruction Details
Company identification	Classified or Recognized company's name, Trade name, Trademark or File
Model	Model number
Supply Connection	Voltage range, ac/dc, phases if more than single phase
Alternating current	
Supply Frequency	Rated frequency range in hertz
Power Input	Amps, VA, or Watts
Output	Rated output voltage, power, frequency.
Fuses	Ratings (current and voltage) and type. (located adjacent to fuse OR as a diagram inside enclosure)
Attention, consult accompanying documents	
Protective earth ground	

Special Instructions to UL Representative

N/A

Production-Line Testing Requirements**Test Exemptions** - The following models are exempt from the indicated test

Test	Exemption Specifics	Details
Grounding Continuity	The following models are exempt from the indicated test:	Not exempted
Dielectric Voltage Withstand	The following models are exempt from the indicated test:	Not exempted
Patient Circuit Dielectric Voltage Withstand	The following models are exempt from the indicated test:	Exempted
Solid-State Components	The following solid-state components may be disconnected from the remainder of the circuitry during either Dielectric Voltage Withstand Test:	Exempted