

LISTING REPORT INTERTEK TESTING SERVICES NA INC.

1950 EVERGREEN BOULEVARD, SUITE 100, DULUTH, GA 30096

Job No. J98004458-215
J98004458SVN

Issued: 05/07/98
Revised: 03/26/2010

REPORT NO. J98004458-001

INSPECTION, TESTS AND EVALUATION
OF AN
ISOLATED CAPACITOR CHARGING POWER MODULES AND SUPPLIES
ISOLATED SWITCH - MODE POWER MODULES AND SUPPLIES

RENDERED TO

ANALOG MODULES, INC.
LONGWOOD, FL

GENERAL: This Report gives the results of the inspection, tests and evaluation of a Isolated Capacitor charging power modules and supplies, and Isolated Switch - mode power modules, and supplies for compliance with applicable requirements of the Medical Electrical Equipment, Part 1: General Requirements for Safety UL 60601-1 1st Edition dated April 25, 2003 with revisions through and including April 26, 2006; CAN/CSA-C22.2 No. 601.1 - M90 (R2005) incl. update No.2. This investigation was authorized by po# 27379, dated 02/09/98. The investigation was begun on 03/16/98 and completed on 05/07/98. A prototype in good condition was provided by the client on 03/02/98 and tested at ITS's Orlando, Florida, facility.

RECOGNIZED COMPONENT

Standard for Medical Electrical Equipment, Part 1: General Requirements for Safety UL 60601-1 1st Edition dated April 25, 2003 with revisions through and including April 26, 2006; CAN/CSA-C22.2 No. 601.1 - M90 (R2005) incl. update No.2.

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Manufacturer 1: Same as applicant

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REVISION PAGE

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The following changes have been made to this Report:

<u>DATE</u>	<u>APPROVAL</u>	<u>PAGE</u>	<u>ITEM</u>	<u>DESCRIPTION</u>
02/16/00	<u>MSB</u>	17	8	Added alternate transformer Updated Model Matrix Added page for transformer construction
msb/0*3305		18		
		26a		
03/01/00	<u>MSB</u>	18		Corrected Model Matrix
msb/0*3305				
02/04/04	<u>SBH</u>	31		Added Illustration No. 14 of alternate electrical schematic
sbh/3054408		32		Added Illustration No. 15 of alternate assembly
		33		Marking page Re-numbered

<u>Date/ Project</u>	<u>Project Handler</u>	<u>Project Reviewer</u>	<u>Page</u>	<u>Item</u>	<u>Description of Change</u>
03/26/2010			1	Standard	Standard was updated from UL 2601-1, 2 nd Edition to Standard for Medical Electrical Equipment, Part 1: General Requirements for Safety UL 60601-1 1 st Edition dated April 25, 2003 with revisions through and including April 26, 2006; CAN/CSA-C22.2 No. 601.1 - M90 (R2005) incl. update No. 2. Mention of the UL 544 was removed.
G10006554	M.Fedeli	C. Norman	3	Test Performance 2	Test performance 2 was added to explain that no further testing was necessary to update this report to the updated standard.
ATL			4	Conclusion 2	A new conclusion section was added for the new updated standard.
10/27/11			15	5	Corrected model number of existing cooling fan. Added alternate Recognized cooling fan. Removed : "Other model components with adequate rating may be used."
J98004458			B. Bocchini	J. Pierce	
SVN					

PRODUCT DESCRIPTION**PRODUCT COVERED:**

Isolated Capacitor charging power modules, models 5701, 5703 Isolated Switch - mode power modules models 5702, 5704, Isolated Capacitor charging power supplies, models 5723, 5753 Isolated Switch - Mode power supplies models 5724, 5754.

PRODUCT DESCRIPTION

The products covered by this report are power supply components for use in system level electromedical devices. The power supplies are intended to be permanently connected in end use. External overload and overcurrent protection is to be provided in end use. Manufacturer has specified information on recommended fuse protection.

MODEL SIMILARITY

Models are similar except that the AMI Model 5723 and 5753 utilize the AMI Model 5703 Isolated Capacitor Charging Power Modules. Likewise, AMI Models 5724 and 5754 utilize the AMI Model 5704 Isolated Switch - Mode Power Modules. See Illustration No.1 for product family chart.

CONDITIONS OF ACCEPTABILITY:

Intended Use - Power Modules are for use in a complete end use product, where the acceptability of the equipment is determined by Intertek Testing Services NA, Inc. The following items should be considered when the unit is to be installed in the end-use product.

1. The models listed above have been judged on the ambient temperature being between 15°C and 35°C, the end use enclosure should provide adequate air circulation to limit ambient temperature.
2. Power Modules should be installed in equipment, using the manufacturers recommendation on the rating and type of fuse protection.
3. A suitable enclosure should be provided when installed in the end-use equipment.

ELECTRICAL RATING

See Illustrations 2-7 for additional Ratings.

Model	Input Rating	Output Rating (V is DC)
5703-C	103-127VAC, 1Ø, 50/60Hz	1000W, 400V <= Vmax <= 1500V; 800W, 1500V<Vmax<=2800V
5703-D	198-253VAC, 1Ø, 50/60Hz	1500W, 400V<=Vmax <= 1500V; 1250W, 1500V<Vmax<=2800V
5723-C	103-127VAC, 1Ø, 50/60Hz	1500W, 400V <= Vmax <= 1500V; 1250W, 1500V<Vmax<=2800V
5723-D	198-253VAC, 1Ø, 50/60Hz	1500W, 400V <= Vmax <= 1500V; 1250W, 1500V<Vmax<=2800V
5753	198-253VAC, 1Ø, 50/60Hz	3000W, 400V <= Vmax<= 1500V; 2500W, 1500V <= Vmax <= 2800V
5704-C	103-127VAC, 1Ø, 50/60Hz	1100W,400V <= Vmax<= 1500V; 1000W, 1500V<Vmax<2800V
5724-C	103-127VAC, 1Ø, 50/60Hz	1100W,400V <= Vmax<= 1500V; 1000W, 1500V<Vmax<2800V
5724-D	198-253VAC, 1Ø, 50/60Hz	1750W, 400V <= Vmax <= 1500V; 1500W, 1500V<Vmax<=2800V
5754	198-253VAC, 1Ø, 50/60Hz	3500W, 400V <= Vmax <= 1500V; 2500W, 1500V <= Vmax <= 2800V

TEST PERFORMANCE

A representative sample of the product was tested in accordance with the Standard for Medical Electrical Equipment (UL 2601-1, 2nd Ed., CA /CSA C22.2 No. 601.1) and the Standard for Medical and Dental Equipment (UL 544, 3rd Ed.).

The following tests were performed:

<u>Description</u>	<u>Standard(s)/Clause</u>
Power Input	UL 2601-1, 7.1; UL 544, 41
Limitation of Voltage	UL 2601-1, 15
Grounding Impedance	UL 2601-1, 18; UL 544, 48
Leakage Current	UL 2601-1, 19; UL 544, 42
Dielectric Strength	UL 2601-1, 20; UL 544, 46
Temperature	UL 2601-1, 42; UL 544, 45
Abnormal Operation	UL 2601-1, 52
Transformer Short Circuit	UL 2601-1, 57.9

Results of the tests indicate the specimens conform to applicable test criteria.

TEST PERFORMANCE 2

No further testing was necessary to update this report to the Standard for Medical Electrical Equipment, Part 1: General Requirements for Safety UL 60601-1 1st Edition dated April 25, 2003 with revisions through and including April 26, 2006; CAN/CSA-C22.2 No. 601.1 - M90 (R2005) incl. update No. 2.

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CONCLUSION

A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the Standard for Medical Electrical Equipment (UL 2601-1, 2nd Ed., CAN /CSA C22.2 No. 601.1) and the Standard for Medical and Dental Equipment (UL 544, 3rd Ed.).

Report prepared by:

Report approved by:

Signature on file

Signature on file

Carl Bloomfield
Project Engineer

Robert D. Burek
Technical Supervisor

CONCLUSION 2

A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the Standard for Medical Electrical Equipment, Part 1: General Requirements for Safety UL 60601-1 1st Edition dated April 25, 2003 with revisions through and including April 26, 2006; CAN/CSA-C22.2 No. 601.1 - M90 (R2005) incl. update No. 2.

Report prepared by:

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