

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:	Component Type Power Supply
Model/Type Reference:	iVS8-ABBC-XX (iVS8 series)
	The number of ABBC is 14 max., and may be followed with suffix. Where X denotes alphanumeric character or blank for specific model designation. X for marketing purpose only, and no impact safety related constructions and critical components.
Rating(s):	See Enclosure ID 7-01 for model configuration AC Input: 200 - 240 V, 16A, 3~, 3W+PE, 50/60 Hz DC Outputs: X Vdc, Y A (For X, Y rating, see Enclosure ID 7-04 for details) Other Output: +5 Vsb, 1.0 A max. Maximum Output Power: 4920 W
Standards:	UL 60950-1, 2nd Edition, 2007-03-27 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2007-03 (Information Technology Equipment - Safety - Part 1: General Requirements)
Applicant Name and Address:	ASTEC INTERNATIONAL LTD 16TH & 17TH FL LU PLAZA KWUN TONG, 2 WING YIP ST KOWLOON HONG KONG
This Report includes the following parts, in addition to this cover page:	
<ol style="list-style-type: none">1. Specific Technical Criteria2. Clause Verdicts3. Critical Components	

Issue Date: 2009-06-02
Correction 1 2009-06-15

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Report Reference # E132002-A102-UL-1

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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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.

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Test Report By:


Reviewed By:



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SPECIFIC TECHNICAL CRITERIA

UL 60950-1:2005 (2nd Edition) Information technology equipment - Safety - Part 1: General requirements	
Report Reference No	E132002-A102-UL-1
Compiled by	Suki Kwong
Reviewed by	Brian Wong
Date of issue	2009-06-02
Standards	UL 60950-1, 2nd Edition, 2007-03-27 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2007-03 (Information Technology Equipment - Safety - Part 1: General Requirements)
Test procedure	Component Recognition
Non-standard test method	N/A
Test item description	Component Type Power Supply
Trademark	Emerson Network Power
	
Model and/or type reference	iVS8-ABBC-XX (iVS8 series)
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	DC Outputs: X Vdc, Y A (For X, Y rating, see Enclosure ID 7-04 for details) Other Output: +5 Vsb, 1.0 A max. Maximum Output Power: 4920 W

Particulars: test item vs. test requirements

Equipment mobility : for building-in
Connection to the mains : to be considered in end system
Operating condition : continuous
Over voltage category : OVC II
Mains supply tolerance (%) : +6%, -10% (+10% for China Deviation)
Tested for IT power systems : No
IT testing, phase-phase voltage (V) : -
Class of equipment : Class I (earthed)
Mass of equipment (kg) : < 18
Pollution degree : PD 2
IP protection class : IPX0

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	The subject product in this report is considered as Class I equipment for building in. It consists of a recognized AC-DC Converter (Front-end Module), Model 73-670-00011 and max. 14 units of recognized DC-DC Output Modules, Models 73-550-03XX, 73-551-00XX, 73-552-00XX, 73-553-00XX, 73-554-00XX, 73-550-03XXi, 73-551-00XXi, 73-552-00XXi, 73-553-00XXi, 73-554-00XXi and 73-558-00XXi, each DC-DC Output Modules with max. 3 outputs. See Enclosure ID 7-03 for block diagram.
CC1.0	Model Differences
CC1.1	N/A
CD1.0	Additional Information
CD1.1	The label is a draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval. Correction 1: Revising the model designation by adding "may be followed with suffix"
CE1.0	Technical Considerations
CE1.2	The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50°C and up to 70°C at derated power
CE1.3	The means of connection to the mains supply is: Connection to mains is to be evaluated in the end product.
CE1.4	The product is intended for use on the following power systems: TT, TN
CE1.6	The class of laser product is: Class 1 (I) for indication purpose only
CE1.7	The product was investigated to the following additional standards: EN 60950-1:2006 (which includes all European national differences, including those specified in this test report).
CE1.13	The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
CE2.0	This equipment is not an electromedical equipment intended to be physically connected to a patient. --
CE2.1	The Clearances and Creepage Distances have additionally been assessed for suitability up to 10,000 ft (3048 m) elevation. --
CE2.2	This equipment has a three pole input connector and equipped with a fuse on each line. --
CE2.3	The subject product have up to 14 recognized output DC-DC modules, maximum of three outputs each module. Output voltage set at factory and marked adjacent to each connector. --

CE2.4	Recognized AC-DC Converter, Model 73-670-0001I is a sub-assembly of the subject product --
CF1.0	Engineering Conditions of Acceptability
CF1.1	For use only in or with complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc. When installed in an end-product, consideration must be given to the following:
CF1.2	The following Production-Line tests are conducted for this product: Earthing Continuity, Electric Strength
CF1.3	The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: 360.2 Vrms, 760Vpk, Primary-Earthed Dead Metal: 357 Vrms, 787 Vpk (according to recognized AC-DC Converter, Model 73-670-0001I)
CF1.5	The following secondary output circuits are SELV: +5VSB
CF1.6	The following secondary output circuits are at hazardous energy levels: All outputs of recognized DC-DC Output modules
CF1.11	The power supply terminals and/or connectors are: Not investigated for field wiring
CF1.12	The maximum investigated branch circuit rating is: 60 A (according to recognized AC-DC Converter, Model 73-670-0001I)
CF1.13	The investigated Pollution Degree is: 2
CF1.15	Proper bonding to the end-product main protective earthing termination is: Required
CF1.16	An investigation of the protective bonding terminals has: Been conducted (according to recognized AC-DC Converter, Model 73-670-0001I),
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): T501(Class F) designated 155-10A, T502 (Class F) designated 155-10B in recognized AC-DC Converter, Model 73-670-0001I,
CF1.19	The following end-product enclosures are required: Mechanical, Fire, Electrical
CF1.21	The maximum continuous power supply output (Watts) relied on forced air cooling from: 2 fans provided in recognized AC-DC Converter, Model 73-670-0001I, blowing air towards components (normal airflow) and away from components (reversed airflow) at rate of min. 90 CFM each.,
CF1.23	The equipment is suitable for direct connection to: AC mains supply
CF2.0	This power supply has been evaluated for use in Class I equipment as defined in IEC60950-1, Second Edition and shall be properly earthed or bonded to earth in the end use. An additional evaluation shall be made if the power supply is intended for use in other than Class I equipment.
CF2.1	Output power from DC-DC modules (4920W) decreases by 2.5% per °C from 50°C to 70°C.
CF2.2	Earthing terminal at input connector, of recognized AC-DC Converter, Model 73-670-0001I, , is not considered protective earth, but is considered bonding terminal. Power supply chassis is to be reliably bonded to protective earthing in the end use equipment before equipment is energized.
CF2.3	This power supply is not equipped with a power cord. A safety agency approved power cord (e.g. UL, CSA, VDE) and plug with appropriate wire gauge for the rated input current must be provided together by the end system manufacturer.
CF2.4	Total loading of dual output DC-DC modules do not exceed 144 W and total loading of triple output DC-DC modules do not exceed 36 W.

CF2.5	The secondary outputs of the recognized DC-DC modules are considered SELV except for the outputs of the 48 V DC-DC modules, which exceeds 60 Vdc and is not suitable for SELV. The end system must provide at least basic insulation from the user or service personnel to the outputs of the power supply. There is also hazardous energy level that exceeds 240 VA at the outputs of all power supplies.
CF2.6	A suitable power supply disconnection means is to be provided by the end use equipment.
CF2.7	Fan airflow direction is reversible up to 40 °C at 100 % output power (4920 W). Normal airflow direction is fan blowing air towards components.