

COVER PAGE FOR TEST REPORT

Product Category:	Power Supplies for Information Technology Equipment Including Electrical Business Equipment
Product Category CCN:	QQGQ2, QQGQ8
Complementary Product Categories:	Power Supplies, Medical and Dental(QQHM2, QQHM8)
Test Procedure:	Component Recognition
Product:	Component Power Supply
Model/Type Reference:	AC to DC converter
	Models :
	Model #s May be AQ0400MU48EABF
	AQ = AcuQor Series
	0400 = Output Power: 0400 for 400W or 0300 for 300W
	M = Grade: M for Medical or I for Industrial (ITE applications)
	U = Input voltage: 100-240 Vac
	48 = Output voltage:
	12 for 12 Vdc,
	24 for 24 Vdc ,
	36 for 36 Vdc,
	48 for 48Vdc,
	1T for 12 Vdc, 5 Vdc and 12 V standby,
	2T for 24 Vdc, 5 Vdc and 12 V standby,
	3T for 36 Vdc, 5 Vdc and 12 V standby,
	4T for 48 Vdc, 5 Vdc and 12 V standby
	E = Package = 3"x5"x1.5'
	A = Thermal Design: A for open frame or C for encased
	BF = BF isolation rating
	BFD = BDF isolation rating defibrillator proof
	CF = CF isolation rating
	CFD = CFD isolation rating defibrillator proof
	See enclosure for more details
Rating(s):	Input Voltage : 100 - 240 Vac Input Frequency : 50/60 Hz Input Current : 4A or 5 A Output Voltage : 12Vdc, 24 Vdc, 36Vdc or 48 Vdc and 5 Vdc, 12 Vdc standby for 1t, 2T, 3T, 4T models Output Power : 300W or 400 W
Standards:	UL 60950-1, 1st Edition, 2007-10-31 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-03, 1st Edition, 2006-07 (Information Technology Equipment - Safety - Part 1: General Requirements)
Applicant Name and	SYNQOR INC

Issue Date: 2007-10-01
Amendment 1 2008-11-14

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Report Reference #

E194341-A8-UL-1

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UNITED STATES

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. National Differences
6. 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.

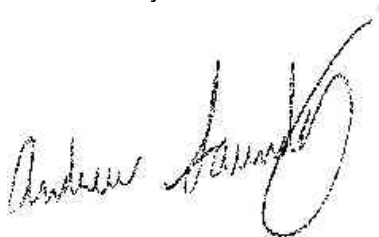
The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

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.

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Test Report By:

Reviewed By:



Lucio Cinelli
Project Engineer
Underwriters' Laboratories of Canada

Andrew Saunders
Manager CAS III
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SPECIFIC TECHNICAL CRITERIA

UL 60950-1, First Edition Information technology equipment - Safety- Part 1: General Requirements	
Report Reference No	E194341-A8-UL-1
Compiled by	Lucio Cinelli
Reviewed by	Andrew Saunders
Date of issue	2007-10-01
Standards	UL 60950-1, 1st Edition, 2007-10-31 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-03, 1st Edition, 2006-07 (Information Technology Equipment - Safety - Part 1: General Requirements)
Test procedure	Component Recognition
Non-standard test method	N/A
Test item description	Component Power Supply
Trademark	None
Model and/or type reference	AC to DC converter
	Models :
	Model #s May be AQ0400MU48EABF
	AQ = AcuQor Series
	0400 = Output Power: 0400 for 400W or 0300 for 300W
	M = Grade: M for Medical or I for Industrial (ITE applications)
	U = Input voltage: 100-240 Vac
	48 = Output voltage:
	12 for 12 Vdc,
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	48 for 48Vdc,
	1T for 12 Vdc, 5 Vdc and 12 V standby,
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	3T for 36 Vdc, 5 Vdc and 12 V standby,
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	E = Package = 3"x5"x1.5'
	A = Thermal Design: A for open frame or C for encased
	BF = BF isolation rating
	BFD = BDF isolation rating defibrillator proof
	CF = CF isolation rating
	CFD = CFD isolation rating defibrillator proof
	See enclosure for more details
Rating(s)	Input Voltage : 100 - 240 Vac

Input Frequency : 50/60 Hz
Input Current : 4A or 5 A
Output Voltage : 12Vdc, 24 Vdc, 36Vdc or 48 Vdc and 5 Vdc, 12 Vdc
standby for 1t, 2T, 3T, 4T models
Output Power : 300W or 400 W

Particulars: test item vs. test requirements

Equipment mobility: for building-in
Operating condition: continuous
Mains supply tolerance (%): +10%, -10%
Tested for IT power systems: No
IT testing, phase-phase voltage (V): N/A
Class of equipment: Class I (earthed)
Mass of equipment (kg): < 18 (0.427)
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	These Products are Component power supply; single output switch mode power supply. The products are medical grade AC/DC power supply. They feature high efficiency output power (90% at 300W or 400W). Its Input Voltage range is a universal input voltage range. These products employ an over-current, over-voltage, and over-temperature protection.
CC1.0	Model Differences
CC1.1	<p>Model #s May be AQ0400MU48EABF</p> <p>AQ = AcuQor Series 0400 = Output Power: 0400 for 400W or 0300 for 300W M = Grade: M for Medical or I for Industrial U = Input voltage: 100-240 Vac 48 = Output voltage: 48 = Output voltage: 12 for 12 Vdc, 24 for 24 Vdc , 36 for 36 Vdc, 48 for 48Vdc, 1T for 12 Vdc, 5 Vdc and 12 V standby, 2T for 24 Vdc, 5 Vdc and 12 V standby, 3T for 36 Vdc, 5 Vdc and 12 V standby, 4T for 48 Vdc, 5 Vdc and 12 V standby E = Package = 3"x5"x1.5' A = Thermal Design: A for open frame or C for encased BF = BF isolation rating BFD = BDF isolation rating defibrillator proof CF = CF isolation rating CFD = CFD isolation rating defibrillator proof</p> <p>The difference between the 400 and 300-watt model is in the software. The 300-watt model has a lower Over Current Protection set-point. The Fan in both model series is temperature controlled and is therefore subject to environment conditions for operation.</p>
CD1.0	Additional Information
CD1.1	<p>These products have a complementary coverage under QQHM2 and QQHM8</p> <p>These products have been evaluated to UL60601-1 1st Ed. 2006-04-26; CAN/CSA-C22.2 No. 601.1.M90 with updates 1 and 2, 2003-11; IEC 60601-1, Second Edition (1988) with Amendments 1 (1991) and 2 (1995) and UL60950-1 1st Ed. 2006-07-07; CSA C22.2 No. 60950-</p>

	1-03 1st Ed. 2003-11; IEC 60950-1:2001, First Edition
CE1.0	Technical Considerations
CE1.2	The product was submitted and tested for use at the maximum ambient temperature (T _{ma}) permitted by the manufacturer's specification of: 25°C
CE1.4	The product is intended for use on the following power systems: TN
CE1.7	The product was investigated to the following additional standards: EN 60950-1:2001 (which includes all European national differences, including those specified in this test report).UL60601-1: 2003 component power supply for use in medical equipment
CE2.0	The Unit is for building-in to an end-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: Electric Strength, Earthing Continuity
CF1.3	The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: 240Vrms, 370Vpk, Primary-Earthed Dead Metal: 240 Vrms, 370Vpk
CF1.5	The following secondary output circuits are SELV: All
CF1.6	The following secondary output circuits are at hazardous energy levels: All outputs
CF1.10	The following output terminals were referenced to earth during performance testing: output return
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 and Limited Short Circuit test should be considered in the end product investigation
CF1.16	An investigation of the protective bonding terminals has: Been conducted
CF1.23	The equipment is suitable for direct connection to: AC mains supply
CF2.0	Power supplies should be used within ratings specified, including cooling requirements
CF2.1	Units are for building-in and require Electrical, Mechanical and Fire enclosures as part of the end product.
CF2.2	The input and output connectors have not been evaluated for field wiring applications.
CF2.3	As power supplies are for building-in, during the end product investigation the following UL60601-1 clauses: 6.2n, 6.8, 15c, 17h, 19, 56.6a, 57.1a, 57.6 and 57.10b should be considered.
CF2.4	Clause 36, EMC, and Clause 48, Biocompatibility, were not considered during this component investigation.
CF2.5	The inputs of these units are intended to be provided via an Isolated Medical Secondary Source.
CF2.6	The product employs double pole fusing, the need for warning to service personal will be

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	considered in the end product.
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