Ref. Certif. No.

US-18293-A2-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product Produit	Medical Switching Power Supply
Name and address of the applicant Nom et adresse du demandeur	XP POWER LLC SUITE 150 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the manufacturer Nom et adresse du fabricant	XP POWER LLC SUITE 150 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	XP POWER LLC 990 BENECIA AVE SUNNYVALE CA 94085 USA ☒ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	See Page 2
Trademark (if any) Marque de fabrique (si elle existe)	XP
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	SMT
Model / Type Ref. Ref. De type	ECM40USXX, ECM40US24-XB0194, ECM60USXX and ECM60USXX (3X5), See Page 2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	National Differences specified in the CB Test Report. ☒ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60601-1(ed.3)
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	E146893-A29-CB-1 issued on 2012-07-05

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2012-07-05
Original Issue Date: 2011-12-28

Signature:

Jolanta M. Wroblewska

Ref. Certif. No.

US-18293-A2-UL

Model Details:
ECM40USXX, ECM40US24-XB0194, ECM60USXX and
ECM60USXX (3X5) (where XX can be any number between 05 and
48 designating the output voltage, all models may be followed by "- W")

Factories:
XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN JIANGSU 215321
CHINA

Ratings:
Model ECM40USXX and ECM40US24-XB0194:
Input Rated: 100-240 V~, 50/60 Hz, 1.0A
Models ECM60USXX and ECM60USXX (3X5):
Input Rated: 100-240 V~, 50/60 Hz, 1.5A
All Models (Except ECM40US24 -XB0194):
Output: See Model Differences for details.
Model ECM40US24-XB0194:
Output: 23 Vdc, 1.74A

Additional Information:
The original report was modified to include the following changes/additions:
Add model, update component table, see test report.

Additional information (if necessary)
Information complémentaire (si nécessaire)

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2012-07-05
Original Issue Date: 2011-12-28

Signature:
Jolanta M. Wroblewska

Test Report issued under the responsibility of:

TEST REPORT
IEC 60601-1
Medical Electrical Equipment
Part 1:General requirements for basic safety and essential performance

Report Reference No ..... :	E146893-A29-CB-1
Date of issue ..... :	2011-12-27
Total number of pages ..... :	47
CB Testing Laboratory ..... :	UL San Jose
Address ..... :	455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
Applicant's name ..... :	XP POWER LLC SUITE 150
Address ..... :	1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Test specification:	
Standard ..... :	IEC 60601-1: 2005 + CORR. 1 (2006) + CORR. 2 (2007)
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60601_1G
Test Report Form originator ..... :	UL LLC
Master TRF ..... :	Dated 2010-11

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Medical Switching Power Supply
Trade Mark ..... :	
Manufacturer ..... :	XP POWER LLC SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference ..... :	ECM40USXX, ECM40US24-XB0194, ECM60USXX and ECM60USXX (3X5) (where XX can be any number between 05 and 48 designating the output voltage, all models may be followed by "-W")
Ratings ..... :	Model ECM40USXX and ECM40US24-XB0194: Input Rated: 100-240 V~, 50/60 Hz, 1.0A Models ECM60USXX and ECM60USXX (3X5): Input Rated: 100-240 V~, 50/60 Hz, 1.5A All Models (Except ECM40US24 -XB0194): Output: See Model Differences for details. Model ECM40US24-XB0194: Output: 23 Vdc, 1.74A

Testing procedure and testing location:			
[ ]	**CB Testing Laboratory**		
	Testing location / address..... :		
[ ]	**Associated CB Test Laboratory**		
	Testing location / address..... :		
	Tested by (name + signature) ..... :		
	Approved by (name + signature) ... :		
[ ]	**Testing Procedure: TMP**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: WMT**		
	Tested by (name + signature) ..... :		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[x]	**Testing Procedure: SMT**		
	Tested by (name + signature) ..... :	Rodney Reyes	Rodney Reyes
	Approved by (+ signature) ..... :	Tac Pham	
	Supervised by (+ signature) ..... :	David V. Alma	D. V. Alma
	Testing location / address..... :	UL Brea 2929 Imperial Hwy, Ste 100, Brea, CA, 92821, USA	
[ ]	**Testing Procedure: RMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		

List of Attachments

National Differences (0 pages)

Enclosures (13 pages)

Summary Of Testing

Unless otherwise indicated, all tests were conducted at UL Brea 2929 Imperial Hwy, Ste 100, Brea, CA, 92821, USA.

	Tests performed (name of test and test clause)	**Testing location / Comments**
	Power Input Test (4.11)	

Humidity Preconditioning Treatment (5.7)

Voltage or Charge Limitation (8.4.3)

Working Voltage Measurement (8.5.4)

Earthing and Potential Equalization Test (8.6.4a)

Dielectric Voltage Withstand (8.8.3)

Ball Pressure (8.8.4.1)

Temperature Test (11)

Abnormal Operation and Single Fault Conditions (13)

Transformer Overload and Short-Circuit Tests (15.5.1)

Leakage Current Test (8.7)

Summary of Compliance with National Differences:

Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AT, BE, CA, CH, CZ, DE, DK, FI, FR, GB, HU, IL, IT, NL, PL, SE, SI, SK, TR, UA, US

The product fulfills the requirements of: ANSI/AAMI ES60601-1 (2005 + C1:09 + A2:10), CAN/CSA-C22.2 No. 60601-1 (2008), IEC 60601-1: 2005, EN 60601-1: 2006 + CORR: 2010

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

Test item particulars (see also Clause 6):				
Classification of installation and use .....:	For building-in			
Device type (component/sub-assembly/ equipment/ system) .....:	Component			
Intended use (Including type of patient, application location) .....:	None			
Mode of operation .....:	Continuous			
Supply connection .....:	For building-in			
Accessories and detachable parts included .....:	None			
Other options include .....:	None			
Testing:				
Date of receipt of test item(s) .....:	2012-04-18			
Dates tests performed .....:	2012-04-18 to 2012-04-25			
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 was not evaluated for the requirement :	N / E			
- test object does not meet the requirement .....:	F(Fail)			
Abbreviations used in the report:				
- normal condition .....:	N.C.	- single fault condition .....:	S.F.C.	
- means of Operator protection .....:	MOOP	- means of Patient protection .....:	MOPP	

General remarks:

"(see Attachment #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the testing laboratory.
List of test equipment must be kept on file and available for review.
Additional test data and/or information provided in the attachments to this report.

Throughout this report a point is used as the decimal separator.

Manufacturer's Declaration per Sub Clause 6.25 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory and a declaration form the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... Yes

When differences exist, they shall be identified in the General Product Information section.

Name and address of Factory(ies):

XP POWER LLC
990 BENECIA AVE
SUNNYVALE CA 94085
UNITED STATES

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN
JIANGSU 215321 CHINA

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2012-07-05 to include the following changes/additions:
1. Add Model ECM40US24 -XB0194
2. Miscellaneous administrative corrections to Critical Component List

Product Description

Products covered are open frame power supplies intended for building-in to be used with Medical Electrical Equipment. Units are intended for used with Class I or Class II end-products.

Model Differences

Model ECM40USXX Series and Model ECM60USXX Series are identical with exception to input and output ratings, all models may be followed by suffix "-W".

All models in Model ECM40USXX and Model ECM60USXX series are identical with exception to the Mains Transformer, T1, and minor secondary components that allow for different output voltage ratings.

Models followed by "-W" are optionally provided with two Y1 bridging capacitors (C22 and C23) and provide 2 MOPP between primary and secondary and Models without the "-W" are provided with one Y1 bridging capacitors (C17) and provide 1 MOPP between primary and secondary.

See below for Model Ratings for up to 50°C ambient:

Model ECM40US05: Output Rated: 5.0 Vdc, 8.0 A
Model ECM40US07: Output Rated: 7.0 Vdc, 5.7 A
Model ECM40US09: Output Rated: 9.0 Vdc, 4.4 A
Model ECM40US12: Output Rated: 12.0 Vdc, 3.5 A
Model ECM40US15: Output Rated: 15.0 Vdc, 2.7 A
Model ECM40US18: Output Rated: 18.0 Vdc, 2.2 A
Model ECM40US24: Output Rated: 24.0 Vdc, 1.7 A
Model ECM40US33: Output Rated: 33.0 Vdc, 1.2 A
Model ECM40US48: Output Rated: 48.0 Vdc, 0.9 A
Model ECM60US05: Output Rated: 5.0 Vdc, 12.0 A
Model ECM60US07: Output Rated: 7.0 Vdc, 8.6 A
Model ECM60US09: Output Rated: 9.0 Vdc, 6.7 A
Model ECM60US12: Output Rated: 12.0 Vdc, 5.0 A
Model ECM60US15: Output Rated: 15.0 Vdc, 4.0 A
Model ECM60US18: Output Rated: 18.0 Vdc, 3.3 A
Model ECM60US20: Output Rated: 20.0 Vdc, 3.0 A
Model ECM60US24: Output Rated: 24.0 Vdc, 2.5 A
Model ECM60US28: Output Rated: 28.0 Vdc, 2.14 A
Model ECM60US33: Output Rated: 33.0 Vdc, 1.8 A

Model ECM60US48: Output Rated: 48.0 Vdc, 1.25 A
Model ECM40US24 -XB0194: Output Rated: 23Vdc, 1.74 A

See Enclosures 7-01 for de-rating curve for ambient temperatures up to 70°C.

Model ECM60USXX Series is identical to Model ECM60USXX (3X5) with exception to Model ECM60USXX (3X5) being provided on a 3 by 5 in. printed wiring board.

Model ECM40US24-XB0194 is identical to Model ECM40US24-W with exception to the board layout, provided earthed heatsink construction, and modification to the output voltage and current rating.

Additional Information

This report is a reissue of CBTR Ref. No.E146893-A1-CB-2, CB Test Certificate Ref. No. US/12319/UL. Based on previously conducted testing and the previous review of product construction it was determined that the product continues to comply with the standard.

Nameplate marking provided is considered representative of the series.

Tests conducted on models with suffix "- W" were considered representative of models without suffix "-W".

For licenses older than 3 years, manufacturer to provide updated licenses upon NCB's request.

Technical Considerations

- The product was investigated to the following additional standards: ANSI/AAMI ES60601-1 (2005 + C1:09 + A2:10) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance) (includes Deviations for United States), CAN/CSA-C22.2 No. 60601-1 (2008) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance) (includes National Differences for Canada), EN 60601-1: 2006 + CORR: 2010 (Medical electrical equipment Part 1: General requirements for basic safety and essential performance)

- The product was not investigated to the following standards or clauses: Biocompatibility (ISO 10993-1), Clause 14, Programmable Electronic Systems, Electromagnetic Compatibility (IEC 60601-1-2)

- 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

- Unit also complied with spacing requirements of UL60601-1 (1st), CSA C22.2 No. 60601-1 (2nd), and IEC 60601-1 (2nd) for Basic for 250 Vac from Primary to Ground, Double/Reinforced for 250 Vac from Primary to Secondary. --

- The power supply was evaluated for use in 50°C ambient at Full Rated Output and 50% of the Rated

Output in 70°C ambient. (See De-rating Curve, Enclosure 7-01 for details) --

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- The component shall be considered for compliance with the Marking (clause 7) and Separation (clause 8) requirements as part of the end use application evaluation. --
- Repeat of leakage current testing and consideration of non-frequency weighted leakage to be considered as part of the end product. --
- Power supply Models with the suffix "- W" are provided with two Y1 bridging capacitor (C22 and C23) and evaluated with Two MOPP between Primary and Secondary; One MOPP primary and Earth. Models without the suffix "- W" are provided with one Y1 bridging capacitor (C17) and evaluated for 1 MOPP between primary and secondary and 1 MOPP between primary and earth. --
- This power supply has been evaluated as a 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. The output circuits have not been evaluated for direct patient connection (Type B, BF or CF). --
- The end product shall ensure that the requirements related to accompanying documents, clause 7.9, are met. --
- The available voltage for the secondary outputs does not exceed 25 Vac or 60 Vdc, under normal and single fault conditions. --
- The following secondary output circuits are at hazardous energy levels: Main Power Output --
- The output connectors are not acceptable for field connections; they are only intended for connection to mating connectors of the end-use equipment. --
- The Dielectric Strength Test conducted on this power supply (except Model ECM40US24 -XB0194) was based upon a maximum working voltage of: Primary-Earthed Dead Metal (Class I units): 347 Vpk, 244 Vrms; Primary-SEC: 356 Vpk, 240 Vrms. --
- For Class I application: Protective bonding testing shall be considered in the end product application. --
- 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): L1 and T1 (Class F, 155°C) --
- Printed Wiring Board rated 130°C. --

- Cleaning test shall be considered as part of end product evaluation. --
- The need for Marking Durability and Marking Legibility Testing shall be considered as part of the end product installation. --
- Fire/ Mechanical/ Electrical Enclosure to be provided as part of the end product. --
- When installed in a Class I end product, the power supply shall be mounted in a manner that provides, at a minimum, 2.5 mm Clearance/4 mm Creepage between the primary sides of power supply and protectively earthed accessible conductive parts. In addition, when installed in a Class I end product, the protective bonding terminal of the power supply shall be reliably connected to the main protective earthing terminal of the end product. --
- When installed in a Class II end product, the power supply shall be mounted, on insulating posts, in a manner that provides, at a min. 5 mm Clearance/8 mm Creepage between the power supply and any accessible conductive parts. --
- Models without the suffix "- W" are evaluated for 1 MOPP between primary and secondary. The end-product evaluation shall consider the need for additional protection. --
- The Dielectric Strength Test conducted on this power supply, Model ECM40US24 -XB0194, was based upon a maximum working voltage of: Primary-Earthed Dead Metal (Class I units): 353 Vpk, 243 Vrms; Primary-SEC: 491 Vpk, 249 Vrms. --
- For Model ECM40US24 -XB0194: Heat Sink (HS1) to be protectively earthed as part as end product evaluation. --

Ref. Certif. No.

US-18269-A1-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product Produit	Component Switching Power Supply
Name and address of the applicant Nom et adresse du demandeur	XP POWER INC SUITE 150, 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the manufacturer Nom et adresse du fabricant	XP POWER L L C SUITE 150, 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	XP POWER INC 990 BENECIA AVE SUNNYVALE CA 94085 USA ☒ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	See Page 2
Trademark (if any) Marque de fabrique (si elle existe)	XP
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	
Model / Type Ref. Ref. De type	ECM60UDxx, ECM60UTxx, ECM40UDxx, ECM40UTxx, See Page 2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	National Differences specified in the CB Test Report. ☒ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60601-1(ed.3)
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	E146893-A31-CB-1 issued on 2012-03-08

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2012-03-09
Original Issue Date: 2011-12-21

Signature:

Jolanta M. Wroblewska

Model Details:

ECM60UDxx, ECM60UTxx, ECM40UDxx, ECM40UTxx, ECC60UDxx, ECC60UTxx, ECC40UDxx, ECC40UTxx, ECM60UDxx (3X5), ECM60UTxx (3X5), where xx can be 21-22, 31-37, ECM60UT31>2449; all models maybe followed by "W".
ECM60UT31 -XD0166, 10013486, ECM60UT31 -XE0410, 10013489.

Factories:

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD ZHANGPU TOWN KUNSHAN JIANGSU 215321
CHINA

Ratings:

Input Rated: 100-240 Vac, 50/60 Hz, 1.5 A
Output rated: 3.3, 5, 12, 15, 24, -12 or -15 Vdc, Max 40 or 60 W, Dual or Triple outputs.

For Models ECM60UT31 -XD0166 and 10013486:
Output Rated:
Output 1: 5.6 Vdc, 8 A
Output 2: 12.5 Vdc, 3 A
Output 3: -12 Vdc, 0.5 A

For Models ECM60UT31 -XE0410 and 10013489:
Output Rated:
Output 1: 5 Vdc, 2.5 A
Output 2: 12.5 Vdc, 3 A
Output 3: -12 Vdc, 1 A

Additional Information:

The original report was modified to include the following changes/additions:
Add models, modify output ratings information.

Additional information (if necessary)
Information complémentaire (si nécessaire)

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2012-03-09
Original Issue Date: 2011-12-21

Signature:
Jolanta M. Wroblewska

Test Report issued under the responsibility of:

TEST REPORT
IEC 60601-1
Medical Electrical Equipment
Part 1:General requirements for basic safety and essential performance

Report Reference No ..... :	E146893-A31-CB-1
Date of issue ..... :	2011-12-20
Total number of pages ..... :	22
CB Testing Laboratory ..... :	UL Camas
Address ..... :	2600 N.W. Lake Road, Camas, WA, 98607, USA
Applicant's name ..... :	XP POWER INC SUITE 150
Address ..... :	1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Test specification:	
Standard ..... :	IEC 60601-1: 2005 + CORR. 1 (2006) + CORR. 2 (2007)
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60601_1G
Test Report Form originator ..... :	UL LLC
Master TRF ..... :	Dated 2010-11

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Component Switching Power Supply
Trade Mark ..... :	
Manufacturer ..... :	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference ..... :	ECM60UDxx, ECM60UTxx, ECM40UDxx, ECM40UTxx, ECC60UDxx, ECC60UTxx, ECC40UDxx, ECC40UTxx, ECM60UDxx (3X5), ECM60UTxx (3X5), where xx can be 21-22, 31-37, ECM60UT31>2449; all models maybe followed by "W". ECM60UT31 -XD0166, 10013486, ECM60UT31 -XE0410, 10013489
Ratings ..... :	Input Rated: 100-240 V ac, 50/60 Hz, 1.5 A Output rated: 3.3, 5, 12, 15, 24, -12 or -15 V dc, Max 40 or 60 W, Dual or Triple outputs. For Models ECM60UT31 -XD0166 and 10013486: Output Rated: Output 1: 5.6Vdc, 8A Output 2: 12.5Vdc, 3A Output 3: -12Vdc, 0.5A For Models ECM60UT31 -XE0410 and 10013489: Output Rated: Output 1: 5Vdc, 2.5 A Output 2: 12.5Vdc, 3A Output 3: -12Vdc, 1A

Testing procedure and testing location:			
[x]	**CB Testing Laboratory**		
	Testing location / address..... :	UL Camas 2600 N.W. Lake Road, Camas, WA, 98607, USA	
[ ]	**Associated CB Test Laboratory**		
	Testing location / address..... :		
	Tested by (name + signature) ..... :	Linus Park	
	Approved by (name + signature) ... :	David V. Alma	
[ ]	**Testing Procedure: TMP**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: WMT**		
	Tested by (name + signature) ..... :		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: SMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: RMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		

List of Attachments

National Differences (0 pages)

Enclosures (0 pages)

Summary of Testing:

No tests were conducted

Summary of Compliance with National Differences:

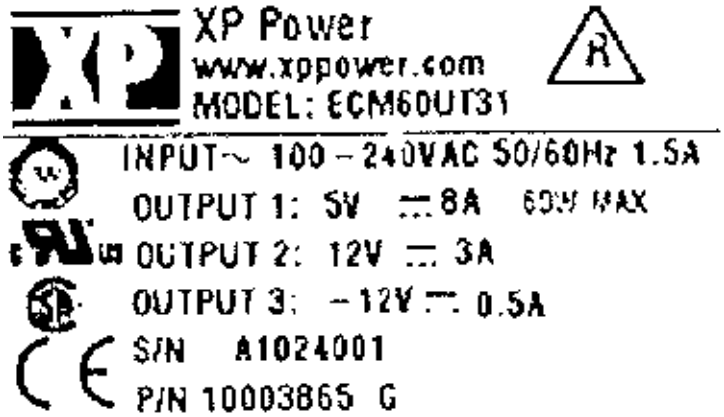
Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AT, BE, CA, CH, CZ, DE, DK, FI, FR, GB, HU, IL, IT, NL, NO, PL, SE, SG, SI, SK, TR, UA, US

The product fulfills the requirements of: ANSI/AAMI ES60601-1 (2005 + C1:09); CAN/CSA-C22.2 No. 60601-1 (2008); EN 60601-1: 2006 + CORR:2010; IEC 60601-1: 2005 + CORR. 1 (2006) + CORR. 2 (2007)

Copy of Marking Plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Test item particulars (see also Clause 6):	
Classification of installation and use .....:	Building-in
Device type (component/sub-assembly/ equipment/ system) .....:	Component
Intended use (Including type of patient, application location) .....:	To supply regulated power
Mode of operation .....:	Continuous
Supply connection .....:	To be determined in the end product
Accessories and detachable parts included .....:	None
Other options include .....:	None
Testing:	
Date of receipt of test item(s) .....:	N/A
Dates tests performed .....:	N/A
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 was not evaluated for the requirement :	N / E
- test object does not meet the requirement .....:	F(Fail)

Abbreviations used in the report:			
- normal condition .....:	N.C.	- single fault condition .....:	S.F.C.
- means of Operator protection .....:	MOOP	- means of Patient protection .....:	MOPP

General remarks:

"(see Attachment #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the testing laboratory.
List of test equipment must be kept on file and available for review.
Additional test data and/or information provided in the attachments to this report.

Throughout this report a point is used as the decimal separator.

Manufacturer's Declaration per Sub Clause 6.25 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory and a declaration form the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... Yes

When differences exist, they shall be identified in the General Product Information section.

Name and address of Factory(ies):

XP POWER INC
990 BENECIA AVE
SUNNYVALE CA 94085
UNITED STATES

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN
JIANGSU 215321 CHINA

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2012-03-08 to include the following changes/additions:
1. Addition of Models ECM60UT31 -XD0166, 10013489, ECM60UT31 -XE0410, and 10013489
2. Added output ratings for new models added
3. Numerous minor administrative changes

Product Description

The products covered in this report are component power supplies intended for use in Medical Electrical Equipment.

Model Differences

All models are identical except output electrical ratings, designation and may be provided with either dual or triple outputs. Models with designation UD represent dual outputs and UT represents triple outputs. Models rated 40 W are identical in construction to Models rated 60 W and differ for marketing purposes only. ECM models are identical to ECC models and differ in designation only. See Enclosure 7-01 for differences in output rating and manufacturers recommended ambient Tma relative to output loading and cooling.

Model ECM60UT31>2449 is identical to Model ECM60UTXX series with exception to changes to components: Optical Isolator, U3, and Capacitors, C2, C3, C22, C29.

Models ECM60UDxx (3X5) and ECM60UTxx (3X5) are identical to Models ECM60UDxx and ECM60UTxx respectively except the PWB size is larger (3X5 inches) and changes to the trace layout and secondary circuitry.

Models followed by W are provided with two Y1 bridging capacitors(C22 and C22A) and provide 2 MOPP between primary and secondary and Models without the W are provided with one Y1 bridging capacitors(C22) and provide 1 MOPP between primary and secondary.

Model ECM60UT31 -XD0166 is identical to Model ECM60UT31 -W, with exception to the capacitor configuration.

Model ECM60UT31 -XD0166 is identical to Model 10013486, with exception to the model designation.

Model ECM60UT31 -XE0410 is identical to Model ECM60UT >2449, except it is provided with two bridging capacitors (C22, C22A) instead of one.

Model ECM60UT31 -XE0410 is identical to Model 10013489, with exception to the model designation.

Additional Information

These models have not been evaluated for use with a cover.

When submitting this Test Report to other Certification Body, the manufacturer is responsible for providing any additional information that the Body may need in order to issue its Mark, including testing for compliance with the applicable collateral standards.

Manufacturer to provide up to date IEC Licensed for component licenses greater than 3 years upon request.

This CB Report is being reissued based on an earlier CB Report E149893-A3-CB-1, issued on 2004-08-16 and amended on 2006-06-23, 2007-11-12 and corrected on 2005-04-08 and 2006-01-19 with Certificate US/8609B/UL.

Only one marking plate is provided which is representative of the other models in the series except for the output ratings

Technical Considerations

- The product was investigated to the following additional standards: ANSI/AAMI ES60601-1 (2005 + C1:09) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance) (includes Deviations for United States), CAN/CSA-C22.2 No. 60601-1 (2008) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance) (includes National Differences for Canada), EN 60601-1: 2006 + CORR:2010 (Medical electrical equipment Part 1: General requirements for basic safety and essential performance)

- The product was not investigated to the following standards or clauses: Electromagnetic Compatibility (IEC 60601-1-2), Clause 14, Programmable Electronic Systems, Biocompatibility (ISO 10993-1)

- 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

- Scope of Power Supply evaluation excludes the following: Patient applied parts clauses: 4.6, 7.2.10, 8.3, 8.5.2, 8.5.5, 8.7.4.7-8.7.4.9, 8.9.1.15; Battery related clauses: 7.3.3, 15.4.3; Hand Control related clauses: 8.10.4; Oxygen related clauses: 11.2.2; Fluids related clauses: 11.6.2 – 11.6.4; Sterilization clause: 11.6.7; Biocompatibility Clause: 11.7 (ISO 10993); Motor related clauses: 13.2.13.3, 13.4; Heating Elements related clause: 13.2; Flammable Anaesthetic Mixtures Protection: Annex G --

- Supply connection: Overvoltage Category II --

- Software is relied upon for meeting safety requirements related to mechanical, fire and shock: No --

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- Power supply Models with the suffix W are provided with two Y1 bridging capacitor (C22 and C22A) and evaluated with Two MOPP between Primary and Secondary; One MOPP primary and Earth and Models without the suffix W are provided with one Y1 bridging capacitor (C22) and evaluated for 1 MOPP between primary and secondary and 1 MOPP between primary and earth. --

- This power supply has been evaluated as a 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. The output circuits have not been evaluated for direct patient connection (Type B, BF or CF) --

- The end product shall ensure that the requirements related to accompanying documents, clause 7.9, are met. --

- The available voltage for the secondary outputs does not exceed 25 Vac or 60 Vdc, under normal and single fault conditions. --

- The input/output connectors are not acceptable for field connections, they are only intended for connection to mating connectors of internal wiring inside the end-use equipment. --

- The maximum investigated branch circuit rating is: 20 A. If used on a branch circuit greater than this, additional testing may be necessary. --

- The Dielectric Voltage Withstand Test conducted on this power supply was based upon a maximum working voltage of: Primary-Earthed Dead Metal (Class I units): 340 Vpk, 240 Vrms; Primary-SEC: 406 Vpk, 261 Vrms. --

- When installed in a Class I end product, the power supply shall be mounted in a manner that provides, at a minimum, 2.5 mm Clearance/4 mm Creepage between the primary sides of power supply and protectively earthed accessible conductive parts. In addition, when installed in a Class I end product, the protective bonding terminal of the power supply shall be reliably connected to the main protective earthing terminal of the end product. --

- When installed in a Class II end product, the power supply shall be mounted, on insulating posts, in a manner that provides, at a min. 7 mm Clearance/8.3 mm Creepage between the power supply and any accessible conductive parts. --

- An investigation of the protective bonding terminal has: Not been conducted. --

- For Class I application: Protective bonding testing shall be considered in the end product application. --

- Suitable fire enclosure shall be provided in the end use application --

- Proper bonding to the Class I end-product main protective earthing termination is required (via mounting holes on the PCB), unless for Class II applications. For Class II applications the primary

side mounting pads are isolated from accessible conductive chassis by Reinforced Insulation --

- Model ECM60xx series, convection cooled was submitted and tested for use at the manufacturer's recommended ambient temperature (Tmra) of 50°C, at 100% of its rated output. The output is then de-rated linearly to 50% in an ambient 70°C. Models ECM60xx provided with 5CFM of forced air cooling are rated for 100% output in an ambient of 60°C decreasing linearly to 50% of output in an ambient of 80°C. Models ECM40xx series, convection cooled, in an ambient of 60°C is rated for 100% output, decreasing linearly to 75% in an ambient of 70°C. For 5CFM of forced air cooling, in an ambient of 70°C, the output is 100%, decreasing linearly to 75% in an ambient of 80°C. --

- The products were tested on a 20 A branch circuit. If used on a branch circuit greater than this, additional testing may be necessary --

- The equipment has been evaluated for use in a Pollution Degree 2 environment --

- Residual Voltage in Attachment Plug should be conducted in the end product with the final configuration/values of Y and bridging capacitors. --

- 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): L1 and T1 are min. Class F (155°C). --

- The PWB is rated 130°C. --

- Cleaning test to be considered as part of end product evaluation --

- The need for Marking Durability and Marking Legibility Testing shall be considered as part of the end product installation. --

- Fire/ Mechanical/ Electrical Enclosure to be provided as part of the end product --

- The need to measure the leakage current with a non-frequency weighted device per Clause 8.7.3 (e) shall be considered in the end product. --

- A 5cfm fan should be provided based on the end product rated ambient temperature and load. --

- The component shall be considered for compliance with the Marking (clause 7) and Separation (clause 8) requirements as part of the end use application evaluation. --

- Temperature, leakage and Dielectric Tests should be considered in the end product --

- Touch current test to be conducted as part of the end product. --

Ref. Certif. No.

US-16441-A3-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product Produit	Switching Power Supply
Name and address of the applicant Nom et adresse du demandeur	XP POWER LLC SUITE 150, 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the manufacturer Nom et adresse du fabricant	XP POWER LLC SUITE 150, 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	XP POWER LLC 990 BENECIA AVE SUNNYVALE CA 94085 USA ☒ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	See Page 2
Trademark (if any) Marque de fabrique (si elle existe)	XP
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	SMT
Model / Type Ref. Ref. De type	ECM100USXX, ECM100USXX*, ECM100US12-C, ECM100US33-C, ECM100US33>2413, ECM100US12>2516, See Page 2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	Additionally evaluated to EN 60601-1:2006; National Differences specified in the CB Test Report ☒ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60601-1(ed.3)
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	E146893-V1-S7 issued on 2012-05-16

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2012-05-16
Original Issue Date: 2011-01-19

Signature:

Jolanta M. Wroblewska

Ref. Certif. No.

US-16441-A3-UL

Model Details:

ECM100USXX, ECM100USXX*, ECM100US12-C, ECM100US33-C, ECM100US33>2413, ECM100US12>2516, ECM100US12>2662 and ECM100USXX 3X5, where XX can be any number between 03 and 48 designating the output voltage.

Factories:
XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RDZHANGPU TOWN KUNSHAN JIANGSU 215321
CHINA

Ratings:

All Models (Except Models ECM100US12-C, ECM100US33-C, ECM100US12>2516 and ECM100US12>2662):
Input: 100-240 V~, 50/60 Hz, 2.2 A
Output: See Enclosure 7-02 for details

Models ECM100US12>2516 and ECM100US12>2662:
Input: 100-240 V~, 50-60 Hz, 2.2 A
Output: See Enclosure 7-02 for details

Model ECM100US12-C:
Input: 100-240 V~, 50/60 Hz, 1.0 A
Output: 12 Vdc, 3.75 A, 45 W

Model ECM100US33-C:
Input: 100-240 V~, 50/60 Hz, 1.4 A
Output: 33 Vdc, 1.97 A, 65 W

Additional Information:
The original report was modified to include the following changes/additions: addition of Model ECM100US33-C including update to Ratings, Critical Components List and Test Tables, see Test Report.

Additional information (if necessary)
Information complémentaire (si nécessaire)

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2012-05-16
Original Issue Date: 2011-01-19

Signature:
Jolanta M. Wroblewska

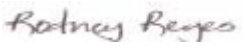
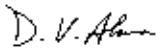
Test Report issued under the responsibility of:

IEC 60601-1
Medical electrical equipment
Part 1: General requirements for basic safety and essential performance

Report Reference No.....:	E146893-V1-S7
Date of issue .....:	2011-01-14
Total number of pages.....:	24
CB Testing Laboratory.....:	UL LLC
Address .....:	455 E. Trimble Rd., San Jose, CA 95131-1230, USA
Applicant's name.....:	XP POWER LLC
Address .....:	SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Test specification:	
Standard.....:	IEC 60601-1: 2005 + CORR. 1 (2006) + CORR. 2 (2007)
Test procedure .....:	CB Scheme
Non-standard test method……..:	N/A
Test Report Form No.....:	IEC60601_1G
Test Report Form Originator.....:	Underwriters Laboratories Inc.
Master TRF .....:	Dated 2010-11

Test item description .....:	Switching Power Supply
Trade Mark .....:	

Manufacturer.....:	XP POWER LLC SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference.....:	ECM100USXX, ECM100USXX*, ECM100US12-C, ECM100US33-C, ECM100US33>2413, ECM100US12>2516, ECM100US12>2662 and ECM100USXX 3X5, where XX can be any number between 03 and 48 designating the output voltage.
Ratings .....:	All Models (Except Models ECM100US12-C, ECM100US33-C, ECM100US12>2516 and ECM100US12>2662): Input: 100-240 V~, 50/60 Hz, 2.2 A Output: See Enclosure 7-02 for details Models ECM100US12>2516 and ECM100US12>2662: Input: 100-240 V~, 50-60 Hz, 2.2 A Output: See Enclosure 7-02 for details Model ECM100US12-C: Input: 100-240 V~, 50/60 Hz, 1.0 A Output: 12 Vdc, 3.75 A, 45 W Model ECM100US33-C: Input: 100-240 V~, 50/60 Hz, 1.4 A Output: 33 Vdc, 1.97 A, 65 W

Testing procedure and testing location:		
☐ CB Testing Laboratory:		
Testing location/ address .....:		
☐ Associated CB Test Laboratory:		
Testing location/ address .....:		
Tested by (name + signature) ..:		
Approved by (+ signature).....:		
☐ Testing procedure: TMP		
Tested by (name + signature) ..:		
Approved by (+ signature).....:		
Testing location/ address .....:		
☐ Testing procedure: WMT		
Tested by (name + signature) ..:		
Witnessed by (+ signature) .....:		
Approved by (+ signature).....:		
Testing location/ address .....:		
☒ Testing procedure: SMT		
Tested by (name + signature) ..:	Rodney Reyes	
Approved by (+ signature).....:	Tac Pham	
Supervised by (+ signature).....:	David Alma	
Testing location/ address .....:	XP Power/ 1241 E. Dyer Rd #150, Santa Ana, CA 92705, USA	
☐ Testing procedure: RMT		
Tested by (name + signature) ..:		
Approved by (+ signature).....:		
Supervised by (+ signature).....:		
Testing location/ address .....:		

List of Attachments (including a total number of pages in each attachment):

Enclosures (5 pages)

Summary of testing

Unless otherwise indicated, all tests were conducted at XP Power/ 1241 E. Dyer Rd #150, Santa Ana, CA 92705, USA.

Tests performed (name of test and test clause):	**Testing location:**
Power Input Test (4.11)	
Temperature Test (11)	

Summary of compliance with National Differences

List of countries addressed:

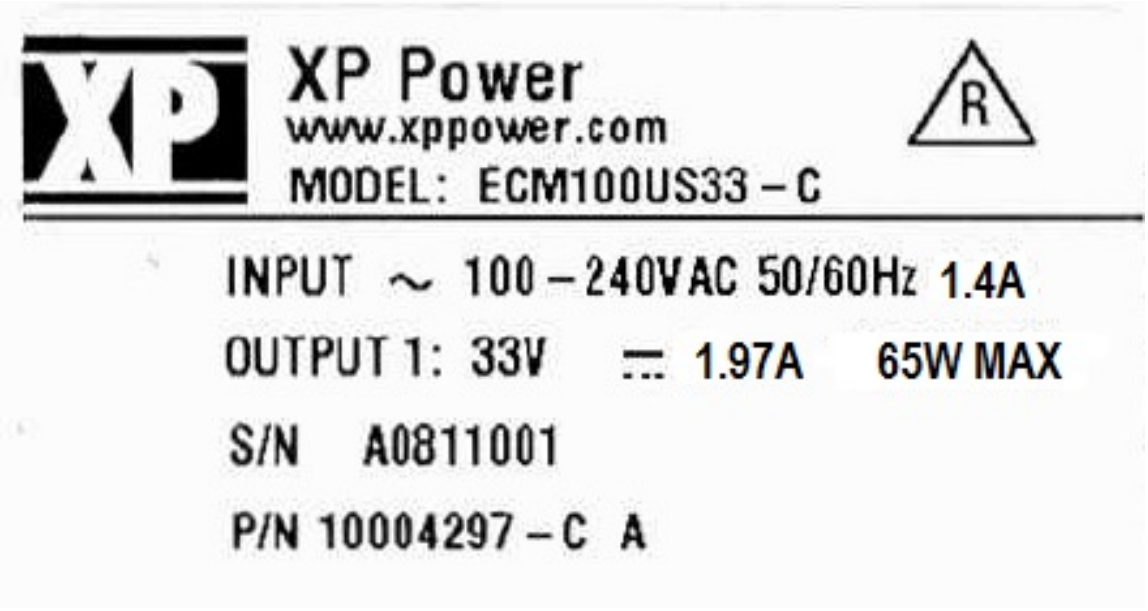
US, CAN

The product fulfils the requirements of IEC 60601-1: 2005 + CORR. 1 (2006) + CORR. 2 (2007)

Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Labels provided are considered representative of the entire series.



GENERAL INFORMATION	
Test item particulars (see also Clause 6):	
Classification of installation and use ..... :	For Building-in
Device type (component/sub-assembly/ equipment/ system).....:	Component, Power Supply
Intended use (Including type of patient, application location) .....:	To supply regulated power.
Mode of operation .....:	Continuous
Supply connection .....:	For Building-in
Accessories and detachable parts included.....:	N/A
Other options include.....:	N/A
Testing	
Date of receipt of test item(s) .....:	2012-04-04
Dates tests performed.....:	2012-04-04
Possible test case verdicts:	
- test case does not apply to the test object .....:	N/A
- test object does meet the requirement.....:	Pass (P)
- test object was not evaluated for the requirement.....:	N/E
- test object does not meet the requirement.....:	Fail (F)
Abbreviations used in the report:	
- normal condition.....: N.C.	- single fault condition .....: S.F.C.
- means of Operator protection .....: MOOP	- means of Patient protection .....: MOPP

General remarks:

"(see Attachment #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.
The tests results presented in this report relate only to the object tested.
This report shall not be reproduced except in full without the written approval of the testing laboratory.
List of test equipment must be kept on file and available for review.
Additional test data and/or information provided in the attachments to this report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 6.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :

☒ **Yes**
☐ **Not applicable**

When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	XP POWER LLC 990 BENECIA AVE SUNNYVALE CA 94085 UNITED STATES XP POWER (KUNSHAN) LTD 230 BIN JIANG NAN RD ZHANGPU TOWN KUNSHAN JIANGSU 215321 CHINA

General product information:

Report Summary

The original report was modified on 2012-05-16 to include the following changes/additions:

1. Add Model ECM100US33-C including update to Ratings, Critical Components List and Test Tables
2.

All applicable tests according to the referenced standard(s) have been carried out.

Product Description

Component Medical Power Supply intended for use in Medical Electrical Equipment**.**

Models ECM100USXX 3X5 and ECM100USXX are intended for building-in Class I or Class II end-products, whereas Model ECM100USXX*, ECM100US12-C, and ECM100US33-C are intended for building-in Class I end-products only.

Model Differences

Model ECM100USXX 3X5 is identical to model ECM100USXX except the PWB size is larger (3x5 inches) and changes to the trace layout and secondary circuitry.

Model ECM100USXX* is identical to model ECM100USXX except for changes to the trace layout and secondary circuitry.

Model ECM100US33>2413 is identical to model ECM100US33 except the input and output connectors are reversed on the PCB.

Models ECM100US12>2516 is identical to Model ECM100US12 with exception to having an input frequency rating of 50-60Hz, instead of 50/60Hz.

Models ECM100US12>2662 is identical to Model ECM100US12 (3 X 5) with exception to having an input frequency rating of 50-60Hz, instead of 50/60Hz.

Model ECM100US12-C is identical to ECM100US12 except for provided with a cover and the input and output electrical ratings.

Model ECM100US33-C is identical to ECM100US12-C except for input and output electrical ratings.

Additional Information

The schematics are kept in file at the CBTL and can be provided by the manufacturer upon request by NCB's/CBTL's.

These power supplies have been previously evaluated by UL to IEC 60601-1:1998+ A1:1991+ A2:1995 (2nd ed), UL 60601-1: 1st ed, 2006-04-26 (includes National Differences for USA), CAN/CSA-C22.2 No. 601.1-M90 (R2005) ((includes National Differences for Canada), and EN 60601-1:1990+A1: 1993+A2: 1995 under CB Test Report/Certificate E146893-A4-CB-2/US/9641A/UL. All tests conducted per 2nd ed of IEC 60601-1 were considered representative of the corresponding tests required by 3rd ed of IEC 60601-1 as stated under Summary of Testing above.

CB Test certificates for components are included in Licenses Enclosure. In accordance with the current rules of CB Scheme, CB Test certificate is effective for 3 years. Recognizing NCB may challenge the CBTC when

certificates are more than 3 years old.

When submitting this Test Report to other Certification Body, the manufacturer is responsible for providing any additional information that the Body may need in order to issue its Mark, including testing for compliance with the applicable collateral standards.

Technical Considerations

- The product was investigated to the following additional standards: ANSI/AAMI ES60601-1:2005/C1:2009 (includes National Differences for USA); CAN/CSA-C22.2 No. 60601-1:08 (includes National Differences for Canada), EN 60601-1:2006
- Scope of Power Supply evaluation defers the following clauses to the be determined as part of the end product: Clause 7.5 (Safety Signs), Clause 7.9 (Accompanying Documents), Clause 9 (ME Hazard), Clause 10 (Radiation), Clause 14 (PEMS), Clause 16 (ME Systems)
- Scope of Power Supply evaluation excludes the following:
  Patient applied parts clauses: 4.6, 7.2.10, 8.3, 8.5.2, 8.5.5, 8.7.4.7-8.7.4.9, 8.9.1.15
  Battery related clauses: 7.3.3, 15.4.3
  Hand Control related clauses: 8.10.4
  Oxygen related clauses: 11.2.2
  Fluids related clauses: 11.6.2 – 11.6.4
  Sterilization clause: 11.6.7
  Biocompatibility Clause: 11.7 (ISO 10993)
  Motor related clauses: 13.2.13.3, 13.4
  Heating Elements related clause: 13.2
  Flammable Anaesthetic Mixtures Protection: Annex G
- The product is Classified only to the following hazards: Casualty, Fire, Shock
- The degree of protection against harmful ingress of water is: Ordinary
- Software is relied upon for meeting safety requirements related to mechanical, fire and shock: No
- The manufacturer's recommended ambient was considered: All Models except Model ECM100US33-C: 50°C at Full Output Rating (with Output De-rated linearly to 50% Full Output Rating at 70°C); For Model ECM100US33-C: 40°C at Full Output Rating

Risk Controls/ Engineering Condition of Acceptability

- The component shall be installed in compliance with the Marking (clause 7) and Separation (clause 8) requirements of the end use application.
- Consideration should be given to measuring the temperature on power electronic components and transformer windings when the power supply is installed in the end-use equipment. The end use product shall ensure that the power supply is used within its ratings.
- Dielectric Strength and Leakage current testing should be conducted in the end product application.
- Grounding continuity should be conducted in the end product for Class I end-product applications.
- This power supply was evaluated with Two MOPP between primary and secondary; One MOPP primary and Earth.
- This power supply has been evaluated as with a functional earth, 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. The output circuits have not been evaluated for direct patient connection (Type B, BF or CF).
- The end product should ensure that the requirements related to accompanying documents, clause 7.9, are met.
- The available voltage for the secondary outputs does not exceed 25 Vac or 60 Vdc, under normal

and single fault conditions.

- The input/output connectors are not acceptable for field connections; they are only intended for connection to mating connectors of internal wiring inside the end-use machine.
- The power supply was tested with and without an externally powered 5 cfm fan.
- Heat sinks were considered floating live and should not be connected to earth in the end product.
- The power supply should be mounted on insulating posts when installed in a Class II end product.
- For Models ECM100USXX and ECM100USXX*, the "floating" mounting hole near Capacitor (C1) shall be mounted on insulating post or properly earthed for Class I end product.
- The need for Marking Durability Testing to be considered as part of the end product installation.
- For units provided with input lead connection, the acceptability of the input leads shall be determined as part of the end product installation.
- Capacitors (C2, C3, C22, C22A, C43) may have various capacitance ratings and options. The end-product evaluation shall make determination whether or not additional control of capacitor values are required.

Ref. Certif. No.

US-18262-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Component Switching Power Supply
Name and address of the applicant Nom et adresse du demandeur	XP POWER INC SUITE 150, 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the manufacturer Nom et adresse du fabricant	XP POWER L L C SUITE 150, 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	See Page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	See Page 2
Trademark (if any) Marque de fabrique (si elle existe)	XP
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	SMT
Model / Type Ref. Ref. De type	ECM100UD21, ECM100UQ46, ECM100UT31, ECM100UT32, ECM100UT33, ECM100UT34, ECM100UT35, ECM100UT36, ECM100UT37, See Page 2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	This report comprises 2 enclosures.
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60601-1(ed.3)
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	E146893-A36-CB-1 issued on 2011-12-20

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 Inc. / GMA Certification Department, US
333 Pfingsten Road, Northbrook, IL 60062-2096
United States of America
TEL INT* +1 847 664 3008, FAX INT* +1 847 313 3008
email: jolanta.m.wroblewska@us.ul.com

Signature:

Date: 2011-12-20

Jolanta M. Wroblewska

Model Details:

ECM100UQ41, ECM100UQ42, ECM100UQ43, ECM100UQ44, ECM100UQ45, ECM100UD22

ECM100UD21, ECM100UQ46, ECM100UT31, ECM100UT32, ECM100UT33, ECM100UT34, ECM100UT35, ECM100UT36, ECM100UT37;
All models numbers maybe followed with "(3x5)" and/or W

Factories:

XP POWER INC
990 BENECIA AVE
SUNNYVALE CA 94085, USA

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN JIANGSU 215321, CHINA

Ratings:

All Models: Input Rating: 100-240Vac; 50/60 Hz; max. 2.2A.
Output Ratings:
ECM100UD21:5 V, 12 A; 12 V, 3 A
ECM100UD22:5 V, 12 A; 15 V, 3 A
ECM100UT31:5 V, 10 A; 12 V, 3 A; -12 V, 0.8 A
ECM100UT32:5 V, 10 A; 24 V, 2 A; -12 V, 0.8 A
ECM100UT33:5 V, 10 A; 15 V, 3 A; -15 V, 0.8 A
ECM100UT34:3.3 V, 10 A; 5 V, 5 A; 12 V, 0.8 A
ECM100UT35:5 V, 10A; 3.3 V, 5 A; 12 V, 0.8 A
ECM100UT36:5 V, 10 A; 12 V, 3 A; -5 V, 0.8 A
ECM100UT37:5 V, 10 A; 15 V, 3 A; -5 V, 0.8 A
ECM100UQ41:5 V, 10 A; 3.3 V, 5 A; 12 V, 0.8 A; -12 V, 0.5 A
ECM100UQ42:3.3 V,10 A; 5 V, 5 A; 12 V, 0.8 A; -12 V, 0.5 A
ECM100UQ43:5 V, 10 A; 24 V, 2 A; 12 V, 0.8 A; -12 V, 0.5 A
ECM100UQ44:5 V, 10 A; 24 V, 2 A; 15 V, 0.8 A; -15 V, 0.5 A
ECM100UQ45:5 V,10 A; 12 V, 3 A; -12V, 0.8 A; -5 V, 0.5 A
ECM100UQ46:5 V,10 A; 15 V, 3A ; -15V, 0.8 A; -5 V, 0.5 A
Tmra = 50°C
All models total max. power:
100 W with 5 cfm external fan.
80 W with no fan.

Additional Information:

Additional evaluation to CENELEC Common Modifications also included. See Test Report for National Differences.

Additional information (if necessary)
Information complémentaire (si nécessaire)

Underwriters Laboratories Inc. / GMA Certification Department, US
333 Pfingsten Road, Northbrook, IL 60062-2096
United States of America
TEL INT* +1 847 664 3008, FAX INT* +1 847 313 3008
email: jolanta.m.wroblewska@us.ul.com

Date: 2011-12-20

Signature:

Jolanta M. Wroblewska

Test Report issued under the responsibility of:

Underwriters Laboratories Inc.

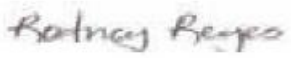
TEST REPORT
IEC 60601-1
Medical Electrical Equipment
Part 1:General requirements for basic safety and essential performance

Report Reference No ..... :	E146893-A36-CB-1
Date of issue ..... :	2011-12-20
Total number of pages ..... :	245
CB Testing Laboratory ..... :	Underwriters Laboratories Inc.
Address ..... :	2600 N.W. Lake Road, Camas, WA, 98607, USA
Applicant's name ..... :	XP POWER INC SUITE 150
Address ..... :	1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Test specification:	
Standard ..... :	IEC 60601-1: 2005 + CORR. 1 (2006) + CORR. 2 (2007)
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60601_1G
Test Report Form originator ..... :	Underwriters Laboratories Inc.
Master TRF ..... :	Dated 2010-11

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Component Switching Power Supply
Trade Mark ..... :	
Manufacturer ..... :	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference ..... :	ECM100UD21, ECM100UD22, ECM100UT31, ECM100UT32, ECM100UT33, ECM100UT34, ECM100UT35, ECM100UT36, ECM100UT37, ECM100UQ41, ECM100UQ42, ECM100UQ43, ECM100UQ44, ECM100UQ45, ECM100UQ46 All models numbers maybe followed with "(3x5)" and/or W
Ratings ..... :	All Models. Input Rating: 100-240Vac, 50/60 Hz, max. 2.2A. Output Ratings: ECM100UD21: 5 V, 12 A; 12 V, 3 A ECM100UD22: 5 V, 12 A; 15 V, 3 A ECM100UT31: 5 V, 10 A; 12 V, 3 A; -12 V, 0.8 A ECM100UT32: 5 V, 10 A; 24 V, 2 A; -12 V, 0.8 A ECM100UT33: 5 V, 10 A; 15 V, 3 A; -15 V, 0.8 A ECM100UT34: 3.3 V, 10 A; 5 V, 5 A; 12 V, 0.8 A ECM100UT35: 5 V, 10A; 3.3 V, 5 A; 12 V, 0.8 A ECM100UT36: 5 V, 10 A; 12 V, 3 A; -5 V, 0.8 A ECM100UT37: 5 V, 10 A; 15 V, 3 A; -5 V, 0.8 A ECM100UQ41: 5 V, 10 A; 3.3 V, 5 A; 12 V, 0.8 A; -12 V, 0.5 A ECM100UQ42: 3.3 V,10 A; 5 V, 5 A; 12 V, 0.8 A; -12 V, 0.5 A ECM100UQ43: 5 V, 10 A; 24 V, 2 A; 12 V, 0.8 A; -12 V, 0.5 A ECM100UQ44: 5 V, 10 A; 24 V, 2 A; 15 V, 0.8 A; -15 V, 0.5 A ECM100UQ45: 5 V,10 A; 12 V, 3 A; -12V, 0.8 A; -5 V, 0.5 A ECM100UQ46: 5 V,10 A; 15 V, 3A ; -15V, 0.8 A; -5 V, 0.5 A

	Tmra = 50°C All models total max. power: 100 W with 5 cfm external fan. 80 W with no fan.

Testing procedure and testing location:			
[ ]	**CB Testing Laboratory**		
	Testing location / address..... :		
[ ]	**Associated CB Test Laboratory**		
	Testing location / address..... :		
	Tested by (name + signature) ..... :		
	Approved by (name + signature)... :		
[ ]	**Testing Procedure: TMP**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: WMT**		
	Tested by (name + signature) ..... :		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[x]	**Testing Procedure: SMT**		
	Tested by (name + signature) ..... :	Rodney Reyes	
	Approved by (+ signature) ..... :	Tac Pham	
	Supervised by (+ signature) ..... :	Glenn Luchen	
	Testing location / address..... :	XP POWER LLC, SUITE 150, 1241 E DYER RD, SANTA ANA CA 92705 UNITED STATES	
[ ]	**Testing Procedure: RMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		

List of Attachments

National Differences (9 pages)

Enclosures (84 pages)

Summary Of Testing

Unless otherwise indicated, all tests were conducted at XP POWER LLC, SUITE 150, 1241 E DYER RD, SANTA ANA CA 92705 UNITED STATES.

Tests performed (name of test and test clause)	**Testing location / Comments**

Humidity Preconditioning Treatment (5.7)

Voltage or Charge Limitation (8.4.3)

Working Voltage Measurement (8.5.4)

Dielectric Voltage Withstand (8.8.3)

Abnormal Operation and Single Fault Conditions (13)

Transformer Overload and Short-Circuit Tests (15.5.1)

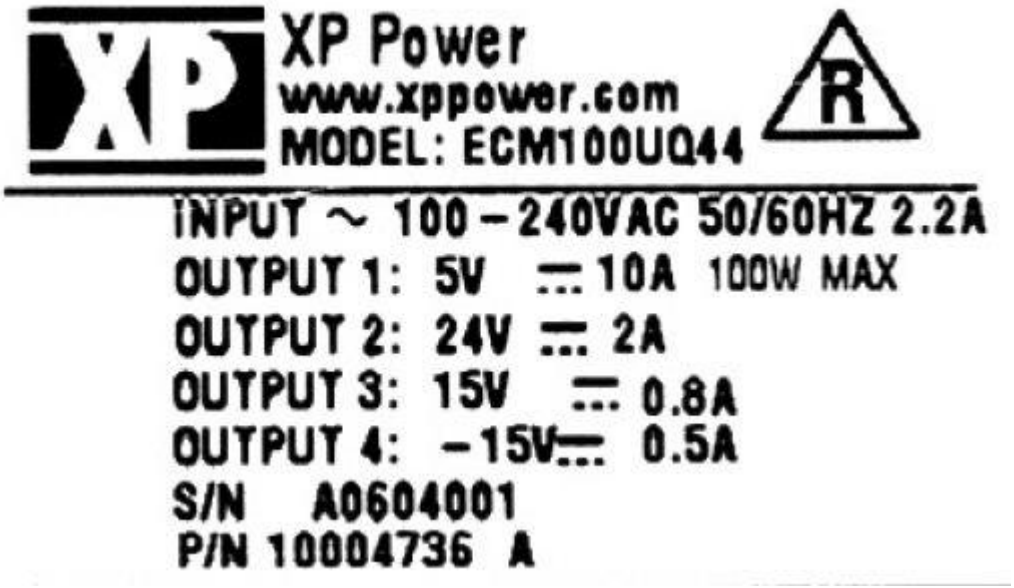
Leakage Current Test (8.7)

Summary of Compliance with National Differences:

List of countries addressed: AT, BE, CA, CH, CZ, DE, DK, FI, FR, GB, HU, IL, IT, NL, NO, PL, SE, SG, SI, SK, TR, UA, US

Copy of Marking Plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Test item particulars (see also Clause 6):	
Classification of installation and use .....:	Building-in
Device type (component/sub-assembly/ equipment/ system) .....:	Component
Intended use (Including type of patient, application location) .....:	To supply regulated power
Mode of operation .....:	Continuous
Supply connection .....:	To be determined in the endproduct
Accessories and detachable parts included .....:	None
Other options include .....:	None
Testing:	
Date of receipt of test item(s) .....:	2006-09-15, 2011-08-12, 2011-12-01
Dates tests performed .....:	2006-11-27, 2006-12-01, 2006-12-06, 2007-01-25, 2011-08-16, 2011-08-17, 2011-08-18, 2011-08-19, 2011-08-22, 2011-08-23, 2011-11-30, 2011-12-02
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 was not evaluated for the requirement :	N / E
- test object does not meet the requirement ..... :	F(Fail)

Abbreviations used in the report:			
- normal condition ..... :	N.C.	- single fault condition ..... :	S.F.C.
- means of Operator protection ..... :	MOOP	- means of Patient protection ..... :	MOPP

General remarks:

"(see Attachment #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the testing laboratory.
List of test equipment must be kept on file and available for review.
Additional test data and/or information provided in the attachments to this report.

Throughout this report a point is used as the decimal separator.

Manufacturer's Declaration per Sub Clause 6.25 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory and a declaration form the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... Yes

When differences exist, they shall be identified in the General Product Information section.

Name and address of Factory(ies):	XP POWER INC 990 BENECIA AVE

SUNNYVALE CA 94085
UNITED STATES

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN
JIANGSU 215321 CHINA

GENERAL PRODUCT INFORMATION:

Report Summary

All applicable tests according to the referenced standard(s) have been carried out.

Product Description

This report covers a component power supply series for use in Medical Electrical Equipment. The power supply series is Class I and relies on the end-product for proper grounding. Power supplies are configured with 2 to 4 outputs using two switching transformer (T1, T2).

Model Differences

All models are identical with exception to the number of outputs, secondary output ratings and secondary circuit components.

The following nomenclature is provided to distinguish the number of outputs:

ECM100UDXX - Dual, Two outputs

ECM100UTXX - Triple, Three outputs
ECM100UQXX - Quad, four outputs

All model numbers denoted by "(3x5)" are identical base models with the exception they are provided on a 3 by 5 in. printed wiring board.

Models followed by W are provided with two Y1 bridging capacitors(C22 and C22A) and provide 2 MOPP between primary and secondary and Models without the W are provided with one Y1 bridging capacitors(C22) and provide 1 MOPP between primary and secondary

Additional Information

Models not evaluated for use with a cover. The label provided is considered representative of the entire series.

When submitting this Test Report to other Certification Body, the manufacturer is responsible for providing any additional information that the Body may need in order to issue its Mark, including testing for compliance with the applicable collateral standards.

Manufacturer to provide up to date IEC Licensed for component licenses greater than 3 years upon request.

This CB Report is being issued based on testing conducted by UL to UL 60601-1, First Edition and CSA

International CB Report Test Report Reference CB 155548-1790974 issued August 9, 2006 and CB Certificate CA/7818/CSA issued August 17, 2006 to IEC 60601-1, Second Edition Amendments No. 1 and No. 2.

The report was upgraded to IEC 60601-1, 3rd Edition and the following tests were conducted under the SMT program:
Humidity Preconditioning Test
Working Voltage Measurement
Dielectric Voltage Withstand Test
Abnormal Operation and Single Fault Conditions
Transformer Overload and Short Circuit Tests
Transformer Dielectric Voltage Withstand Test
Leakage Current Test

Multiple Location Manufacturer Codes:
"K" XP Power, Jiangsu, China
"FS" XP Power, Sunnyvale, Ca

Technical Considerations

- The product was investigated to the following additional standards: ANSI/AAMI ES60601-1 (2005 + C1:09) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance) (includes Deviations for United States), CAN/CSA-C22.2 No. 60601-1 (2008) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance) (includes National Differences for Canada), EN 60601-1: 2006 (Medical electrical equipment Part 1: General requirements for basic safety and essential performance)

- The product was not investigated to the following standards or clauses: Electromagnetic Compatibility (IEC 60601-1-2), Clause 14, Programmable Electronic Systems, Biocompatibility (ISO 10993-1)

- 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

- Scope of Power Supply evaluation excludes the following: Patient applied parts clauses: 4.6, 7.2.10, 8.3, 8.5.2, 8.5.5, 8.7.4.7-8.7.4.9, 8.9.1.15; Battery related clauses: 7.3.3, 15.4.3; Hand Control related clauses: 8.10.4; Oxygen related clauses: 11.2.2; Fluids related clauses: 11.6.2 – 11.6.4; Sterilization clause: 11.6.7; Biocompatibility Clause: 11.7 (ISO 10993); Motor related clauses: 13.2.13.3, 13.4; Heating Elements related clause: 13.2; Flammable Anaesthetic Mixtures Protection: Annex G --

- Supply connection: Overvoltage Category II --

- Software is relied upon for meeting safety requirements related to mechanical, fire and shock: No --

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- The component shall be considered for compliance with the Marking (clause 7) and Separation (clause 8) requirements as part of the end use application evaluation --
- Temperature, leakage, humidity and Dielectric Tests should be considered in the end product --
- Touch current test to be conducted as part of the end product --
- Power supply Models with the suffix W are provided with two Y1 bridging capacitor (C22 and C22A) and evaluated with Two MOPP between Primary and Secondary; One MOPP primary and Earth and Models without the suffix W are provided with one Y1 bridging capacitor (C22) and evaluated for 1 MOPP between primary and secondary and 1 MOPP between primary and earth --
- This power supply has been evaluated as a 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. The output circuits have not been evaluated for direct patient connection (Type B, BF or CF). --
- The end product shall ensure that the requirements related to accompanying documents, clause 7.9, are met. --
- The available voltage for the secondary outputs does not exceed 25 Vac or 60 Vdc, under normal and single fault conditions. --
- The input/output connectors are not acceptable for field connections, they are only intended for connection to mating connectors of internal wiring inside the end-use equipment. --
- The maximum investigated branch circuit rating is: 20 A. If used on a branch circuit greater than this, additional testing may be necessary. --
- The Electric Strength Test conducted on this power supply was based upon a maximum working voltage of: Primary-Earthed Dead Metal (Class I units): 353 Vpk, 245 Vrms; Primary-SEC: 406 Vpk, 240 Vrms. --
- An investigation of the protective bonding terminal has: Not been conducted. --
- For Class I application: Protective bonding testing shall be considered in the end product application. --

- Suitable fire enclosure shall be provided in the end use application. --
- The products were tested on a 20 A branch circuit. If used on a branch circuit greater than this, additional testing may be necessary. --
- The equipment has been evaluated for use in a Pollution Degree 2 environment. --
- The Voltage Limitation Test should be conducted in the end product with the final , configuration/values of y and bridging capacitors. --
- Magnetic devices T1, T2, L1 and L5 employ an (OBJY3) electrical insulation system designated Class F (155°C). --
- The PWB is rated 130°C. --
- Power supply has been evaluated for a Tmra of 50°C at 80W and Tmra of 50°C at 100W with a 5cfm fan. --
- This component has been judged on the basis of the required spacings in the Standards for Medical Electrical Equipment, Part 1: General Requirements for Basic Safety and Essential Performance, ANSI/AAMI ES 60601-1:2005, and CAN/CSA-C22.2 No. 60601-1 (2008) which covers the end use product for which the component is designed. --

Ref. Certif. No.

US-19316-A1-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product Produit	Power supply for building-in, switch mode type
Name and address of the applicant Nom et adresse du demandeur	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the manufacturer Nom et adresse du fabricant	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	XP POWER LLC 990 BENECIA AVE SUNNYVALE CA 94085 USA ☒ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	See Page 2
Trademark (if any) Marque de fabrique (si elle existe)	XP
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	
Model / Type Ref. Ref. De type	10003831, 10006770, ECM60US12-XB0324, See Page 2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	Additionally evaluated to EN 60950-1:2006/A11:2009/A1:2010/ A12:2011; National Differences specified in the CB Test Report. ☒ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	E139109-A4-CB-4 issued on 2012-10-15

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

UL

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2012-10-15
Original Issue Date: 2012-07-05

Signature:

Jolanta M. Wroblewska

Ref. Certif. No.

US-19316-A1-UL

Model Details:

ECM40USXX, ECM60USXX, ECC40USXX, and ECC60USXX, (Where XX can be any number between 05 and 48 designating the output voltage. May be followed by 3X5)

Factories:

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN KUNSHAN JIANGSU 215321
CHINA

Ratings:

Input Rated:

Models ECM40USXX, ECC40USXX, 10003831: ~100-240 V, 50/60 Hz, 1A (40W)

Models ECM60USXX, ECC60USXX, 10006770, ECM60US12-XB0324: ~100-240 V, 50/60 Hz, 1.5A (60W)

Output: See Model Differences for details.

Additional Information:

The original report was modified to add models and alternate components, update clauses and the Critical Component Table. See Test Report.

Additional information (if necessary)
Information complémentaire (si nécessaire)

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2012-10-15
Original Issue Date: 2012-07-05

Signature:
Jolanta M. Wroblewska

Test Report issued under the responsibility of:

TEST REPORT
IEC 60950-1
Information technology equipment - Safety - Part 1: General requirements

Report Reference No ..... :	E139109-A4-CB-4
Date of issue ..... :	2012-07-05
Total number of pages ..... :	26
CB Testing Laboratory ..... :	UL San Jose
Address ..... :	455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
Applicant's name ..... :	XP POWER L L C SUITE 150
Address ..... :	1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Test specification:	
Standard ..... :	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1B
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	2010-04

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Power supply for building-in, switch mode type
Trade Mark ..... :	
Manufacturer ..... :	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference ..... :	ECM40USXX, ECM60USXX, ECC40USXX, and ECC60USXX (Where XX can be any number between 05 and 48 designating the output voltage. Maybe followed by 3X5) 10003831, 10006770, ECM60US12-XB0324
Ratings ..... :	Input Rated: Models ECM40USXX, ECC40USXX, 10003831: ~100-240 V, 50/60 Hz, 1A (40W) Models ECM60USXX, ECC60USXX, 10006770, ECM60US12-XB0324: ~100-240 V, 50/60 Hz, 1.5A (60W) Output: See Model Differences for details.

Testing procedure and testing location:		
[ ]	**CB Testing Laboratory**	
	Testing location / address..... :	
[x]	**Associated CB Test Laboratory**	
	Testing location / address..... :	UL Brea 2929 Imperial Hwy, Ste 100, Brea, CA, 92821, USA
	Tested by (name + signature) ..... :	Sal Oseguera 
	Approved by (name + signature) ... :	Linus Park 
[ ]	**Testing Procedure: TMP**	
	Tested by (name + signature) ..... :	
	Approved by (+ signature) ..... :	
	Testing location / address..... :	
[ ]	**Testing Procedure: WMT**	
	Tested by (name + signature) ..... :	
	Witnessed by (+ signature)..... :	
	Approved by (+ signature) ..... :	
	Testing location / address..... :	
[ ]	**Testing Procedure: SMT**	
	Tested by (name + signature) ..... :	
	Approved by (+ signature) ..... :	
	Supervised by (+ signature) ..... :	
	Testing location / address..... :	
[ ]	**Testing Procedure: RMT**	
	Tested by (name + signature) ..... :	
	Approved by (+ signature) ..... :	
	Supervised by (+ signature) ..... :	
	Testing location / address..... :	

List of Attachments

National Differences (2 pages)

Enclosures (15 pages)

Summary of Testing:

No tests were conducted

Summary of Compliance with National Differences:

Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AT, BE, BG, BY, CA, CH, CN, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IL, IT, JP, KR, NL, PL, PT, RO, SE, SG, SI, SK, UA, US

The product fulfills the requirements of: CSA C22.2 No. 60950-1-07 + A1:2011, EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011, UL 60950-1 2nd Ed. Revised 2011-12-19, IEC 60950-1:2005 + A1:2009

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

Test item particulars :	
Equipment mobility .....:	for building-in
Connection to the mains .....:	for building-in
Operating condition .....:	continuous
Access location .....:	N/A
Over voltage category (OVC) .....:	OVC II
Mains supply tolerance (%) or absolute mains supply values .....:	+10%, -10%
Tested for IT power systems .....:	No
IT testing, phase-phase voltage (V) .....:	N/A
Class of equipment .....:	Class I (earthed) or Class II (double Insulated)
Considered current rating of protective device as part of the building installation (A) .....:	20A
Pollution degree (PD) .....:	PD 2
IP protection class .....:	IPX0
Altitude of operation (m) .....:	5000
Altitude of test laboratory (m) .....:	less than 2000 meters
Mass of equipment (kg) .....:	0.25 kg
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)
Testing:	
Date(s) of receipt of test item .....:	N/A
Date(s) of Performance of tests .....:	N/A

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Manufacturer's Declaration per Sub Clause 6.25 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory and a declaration form the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... Yes

When differences exist, they shall be identified in the General Product Information section.

Name and address of Factory(ies): XP POWER LLC

990 BENECIA AVE
SUNNYVALE CA 94085
UNITED STATES

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN
JIANGSU 215321 CHINA

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2012-10-15 to include the following changes/additions:
1. Add Models ECM60US12 (10006770) and ECM60US12-XB0324
2. Evaluate clearance values for 5000m elevation (1.48 correction factor as per IEC 60664-1, Table A2).
3. Numerous administrative clause verdict revisions.
4. Critical Component List description "Various" revised to "Interchangeable" per IEC request and minor administrative changes.
5. Add alternate components:
- Fuse, Littelfuse (Wickmann Werke), Type 374 Series
- X Capacitor, Vishay type F1778
- Thermistor, Ametherm, Type SL0810002
- Bridge Rectifier, Lite-On, Type KBP06G
- Insulating Tape, Jingjian Yahua, Type CT286
- Triple Insulted Wire, Virginia Insulated Products type 20-38B-29S
- Bobbin, Chang Chun type T373J

Product Description

Models covered in this report are component power supply intended for use in Information Technology Equipment. Units are intended for use with Class I or Class II end-products.

Model Differences

All Models are identical, except for output ratings, minor differences in the secondary circuit components, heat-sink and the number of turns of secondary winding in the Isolation Transformer (T1).

The difference between Series ECC/ECM40/60 is model designation. The difference between Model 10003831 and the ECM/ECC Series is the heat-sink.

Model 10006770 is identical to ECM60US12 except for output ratings.
Model ECM60US12-XB0324 is identical to ECM60US12.

Output Ratings:
Model ECM40US05, ECC40US05: Output Rated: 5 Vdc, 8.0 A
Model ECM40US12, ECC40US12: Output Rated: 12 Vdc, 3.5 A
Model ECM40US15, ECC40US15: Output Rated: 15 Vdc, 2.7 A
Model ECM40US24, ECC40US24: Output Rated: 24 Vdc, 1.7 A
Model ECM40US48, ECC40US48: Output Rated: 48 Vdc, 0.9 A

Model ECM60US05, ECC60US05: Output Rated: 5 Vdc, 12.0 A
Model ECM60US12, ECC60US12: Output Rated: 12 Vdc, 5.0 A
Model ECM60US15, ECC60US15: Output Rated: 15 Vdc, 4.0 A
Model ECM60US24, ECC60US24: Output Rated: 24 Vdc, 2.5 A
Model ECM60US48, ECC60US48: Output Rated: 48 Vdc, 1.25 A

Model 10006770: Output Rated: 12.5 Vdc, 4.8 A
Model ECM60US12-XB0324: Output Rated: 12 Vdc, 5.0 A

Additional Information

The clearance distances have additionally been assessed for suitability up to 5000 m elevation (1.48 correction factor as per IEC 60664-1, Table A2).

Component licenses provided may be older than 3 years old. Manufacturer to provide updated license upon request.

Marking labels are representative of all models and ratings.

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50°C for 100% rated output; 70°C at 50% rated output; 80°C at 50% rated output with 5cfm fan.
- The product is intended for use on the following power systems: TN
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 (which includes all European national differences, including those specified in this test report).

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- The following Production-Line tests are conducted for this product: Electric Strength
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: 250 Vrms, 325 Vpk, Primary-Earthed Dead Metal: 250 Vrms, 354 Vpk
- The following secondary output circuits are SELV: Entire Series outputs.
- The following secondary output circuits are at non-hazardous energy levels: Entire Series outputs.
- The power supply terminals and/or connectors are: Suitable for factory wiring only
- The maximum investigated branch circuit rating is: 20 A

- The investigated Pollution Degree is: 2
- Proper bonding to the end-product main protective earthing termination is: Required for class I units
- An investigation of the protective bonding terminals has: Not been conducted
- The following input terminals/connectors must be connected to the end-product supply neutral: AC N
- 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): T1 (Class F, 155°C) and/or L1 (min. 130°C)
- The following end-product enclosures are required: Mechanical, Fire, Electrical
- A suitable main disconnect device shall be provided in the end product. --
- When installed in a Class I end product, the power supply shall be mounted in a manner that provides, at a min. 3.0 mm Clearance/3.0 mm Creepage between the primary sides of power supply and protectively earthed accessible conductive parts. --
- When installed in a Class II end product, the power supply shall be mounted in a manner that provides, at a min. 6.0 mm Clearance/6.0 mm Creepage between the power supply and accessible conductive parts. --
- Leakage Current Test to be conducted in end-product. --
- Consideration to repeating Heating Tests should be given in the end-product evaluation. --
- Clearance spacing evaluated for 5000 m altitude. Additional consideration maybe necessary in the end-use product. --
- Need for Double Pole Fusing Warning to be considered as part of the end product. --

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

Indicate used abbreviations (if any)

Ref. Certif. No.

US-20705-A1-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product Produit	Power supply for building-in, switch mode type
Name and address of the applicant Nom et adresse du demandeur	XP POWER LLC SUITE 150, 1241 E DYER RD. SANTA ANA, CA 92705 USA
Name and address of the manufacturer Nom et adresse du fabricant	XP POWER LLC SUITE 150, 1241 E DYER RD. SANTA ANA, CA 92705 USA
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	XP POWER LLC 990 BENECIA AVE US SUNNYVALE CA 94085 UNITED STATES ☒ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	Input: 100-240 V ac, 50/60 Hz, 40W or 60W, 1 A or 1.5 A. Output: 3.3, 5, 12, 15, 24, -12 or -15 V dc, Max 40 or 60 W, Dual or Triple outputs.
Trademark (if any) Marque de fabrique (si elle existe)	XP
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	
Model / Type Ref. Ref. De type	ECC40UDxx, ECC40UTxx, ECC60UDxx, ECC60UTxx, ECM40UDxx, ECM40UTxx, See Page 2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	☒ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	E139109-A5-CB-4 issued on 2013-03-04

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2013-03-04
Original Issue Date: 2013-01-24

Signature:

Jolanta M. Wroblewska

Ref. Certif. No.

US-20705-A1-UL

Model Details:
ECC40UDxx,ECC40UTxx,ECC60UDxx,ECC60UTxx,ECM40UDxx,ECM40UTxx,ECM60UDxx,ECM60UTxx (where xx can be 21-22,31-37 representing the number of outputs and the output ratings configuration. Maybe followed by 3X5.)

Factories:
XP POWER (S) PTE LTD
LIPO BLDG, #05-01 621 ALJUNIED RD SINGAPORE 389834
SINGAPORE

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD ZHANGPU TOWNKUNSHANJIANGSU 215321
CHINA

Additional Information:
The original report was modified to include the following changes/additions:
Added and deleted factories.

Additionally evaluated to EN60950-1:2006/A11:2009/A1:2010/A12:2011;
National Differences specified in the CB Test Report.

Additional information (if necessary)
Information complémentaire (si nécessaire)

- [x] UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
- [ ] UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
- [ ] UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
- [ ] UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2013-03-04
Original Issue Date: 2013-01-24

Signature:
Jolanta M. Wroblewska

Test Report issued under the responsibility of:

TEST REPORT
IEC 60950-1
Information technology equipment - Safety - Part 1: General requirements

Report Reference No ..... :	E139109-A5-CB-4
Date of issue ..... :	2013-01-24
Total number of pages ..... :	82
CB Testing Laboratory ..... :	UL San Jose
Address ..... :	455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
Applicant's name ..... :	XP POWER LLC
Address ..... :	SUITE 150, 1241 E DYER RD. SANTA ANA, CA 92705 USA
Test specification:	
Standard ..... :	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1B
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	2010-04

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Power supply for building-in, switch mode type
Trade Mark ..... :	
Manufacturer ..... :	XP POWER LLC SUITE 150, 1241 E DYER RD. SANTA ANA, CA 92705 USA
Model/Type reference ..... :	ECM60UDxx, ECM60UTxx, ECM40UDxx, ECM40UTxx, ECC60UDxx, ECC60UTxx, ECC40UDxx, ECC40UTxx, where xx can be 21-22,31-37 representing the number of outputs and the output ratings configuration. Maybe followed by 3X5.
Ratings ..... :	Input: 100-240 V ac, 50/60 Hz, 40W or 60W, 1 A or 1.5 A. Output: 3.3, 5, 12, 15, 24, -12 or -15 V dc, Max 40 or 60 W, Dual or Triple outputs.

Testing procedure and testing location:			
[ ]	**CB Testing Laboratory**		
	Testing location / address..... :		
[x]	**Associated CB Test Laboratory**		
	Testing location / address..... :	UL Denver 100 Technology Drive, Suite 100, Broomfield, CO, 80021-3414, USA	
	Tested by (name + signature) ..... :	David G. Pedersen	David G. Pedersen
	Approved by (name + signature) ... :	Gregory Ray	Gregory Ray
[ ]	**Testing Procedure: TMP**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: WMT**		
	Tested by (name + signature) ..... :		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: SMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: RMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		

List of Attachments

National Differences (41 pages)

Enclosures (329 pages)

Summary of Testing:

All Applicable tests according to the referenced standard(s) have been carried out

Summary of Compliance with National Differences:

Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AT, BE, BG, BY, CA, CH, CN, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IL, IT, JP, KR, NL, NO, PL, PT, RO, SE, SG, SI, SK, UA, US

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

Test item particulars :	
Equipment mobility ..... :	for building-in
Connection to the mains ..... :	for building-in
Operating condition ..... :	continuous
Access location ..... :	for building-in
Over voltage category (OVC) ..... :	OVC II
Mains supply tolerance (%) or absolute mains supply values ..... :	+10%, -10%
Tested for IT power systems ..... :	No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	Class I (earthed) or Class II (double insulated)
Considered current rating of protective device as part of the building installation (A) ..... :	20 A
Pollution degree (PD) ..... :	PD 2
IP protection class ..... :	IPX0
Altitude of operation (m) ..... :	up to 3048 meters
Altitude of test laboratory (m) ..... :	less than 2000 meters
Mass of equipment (kg) ..... :	0.15 kg
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)
Testing:	
Date(s) of receipt of test item ..... :	2004-03-31, 2007-06-27
Date(s) of Performance of tests ..... :	2004-06-04 to 2004-08-04, 2007-06-27
General remarks:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the testing laboratory. "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a point is used as the decimal separator.	
Manufacturer's Declaration per Sub Clause 6.25 of IECEE 02:	Yes
The application for obtaining a CB Test Certificate includes more than one factory and a declaration form the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... When differences exist, they shall be identified in the General Product Information section.	
Name and address of Factory(ies):	XP POWER LLC SUITE 150, 1241 E DYER RD.

SANTA ANA, CA 92705 USA

XP POWER INC
990 BENECIA AVE
US
SUNNYVALE CA 94085 USA

FORTRON/SOURCE (CHINA) CORP
UNIT 25
ZONE 37
BAO'AN
SHENZHEN,
GUANGDONG 518104 CHINA

FORTRON XP POWER (KUNSHAN) LIMITED
10 DONG HUAN RD
ZHANG PU TOWN
KUNSHAN,
JIANGSU 215321 CHINA

XP POWER (S) PTE LTD
LIPO BLDG, #05-01
621 ALJUNIED RD
SINGAPORE 389834 SINGAPORE

GENERAL PRODUCT INFORMATION:

Report Summary

All applicable tests according to the referenced standard(s) have been carried out.

Product Description

Models covered in this report are component power supplies intended for use in Information Technology Equipment. They are open frame power supplies intended for building-in.

Model Differences

All models are identical except output electrical ratings, designation and may be provided with either dual or triple outputs. Models with designation UD represent dual outputs and UT represents triple outputs. Models rated 40 W are identical in construction to Models rated 60 W and differ for marketing purposes only. Models ECC are identical to Models ECM except for designation.

Additional Information

Models not evaluated for use with cover. Models also evaluated to IEC60601-1 under separate investigation.

See Miscellaneous Enclosure for Output ratings.

This report is a reissue of CBTR Ref. No.E139109-A5-CB-3, CB Test Certificate Ref. No.US/12607/UL. Based on previously conducted testing and the review of product construction it was determined that the

product continues to comply with the standard. No tests were conducted under this investigation. All required tests were carried out under the original investigation.

Some of the attached Critical Component Licenses/Certs may be more than 3 years old. Manufacturer shall provide updated licenses upon request from an accepting NCB.

The Critical Components Table includes components in the product as submitted and also includes, in certain cases, alternate generic descriptions (designated as "interchangeable") for equivalent component substitutions. Recognizing NCBs may require additional information and/or evaluation to qualify alternate components.

User's Manuals, instructions and markings will be provided in the national language of the country of sale. The manufacturer is aware of the requirements for language requirements for markings/instructions, cords/cables, plugs and EMC. Detailed information may be obtained directly from the client. See Enclosure-Miscellaneous for a Letter of Assurance.

An additional evaluation was conducted to determine compliance when this product is used at an altitude of up to 3048 m. See Table 2.10.3 & 2.10.4 for details.

Technical Considerations

- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 (which includes all European national differences, including those specified in this test report).
- The product was submitted and tested for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40W Models: Tma = 60°C at 100% load (40W), Convection cooling Tma = 70°C at 75% load (30W), Convection cooling Tma = 70°C at 100% load (40W), Forced air cooling Tma = 80°C at 75% load (30W), Forced air cooling 60W Models: Tma = 50°C at 100% load (60W), Convection cooling Tma = 70°C at 50% load (30W), Convection cooling Tma = 60°C at 100% load (60W), Forced air cooling Tma = 80°C at 50% load (30W), Forced air cooling Convection cooling consists of no external forced air cooling. Forced air cooling consists of an external fan blowing 132 lfm over the power supply input to output, placed approx 1 foot from power supply. --
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: Load side of C22 (Pri to Sec bridging capacitor) --
- The means of connection to the mains supply is: for building-in --
- The product is intended for use on the following power systems: TN --

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- Printed Wiring Board rated 130°C. --
- The equipment is provided with double pole/neutral fusing. End product evaluation to consider suitable marking to service personal. --
- The maximum investigated branch circuit rating is: 20 A --
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary to Earthed Dead Metal: 240 Vrms, 340 Vpk , Primary to SELV: 261 Vrms, 406 Vpk --
- The following secondary output circuits are SELV: All outputs --
- The following secondary output circuits are at non-hazardous energy levels: All outputs --

- The power supply terminals and/or connectors are: Suitable for factory wiring only --
- The investigated Pollution Degree is: 2 --
- Proper bonding to the end-product main protective earthing termination is: To be considered in the end use application: open frame power supply components are for building-in Class I or Class II. All units will be considered Class I, except as described below: They will be considered Class II when protection against electric shock does not rely on Basic Insulation only, unit provides additional safety precautions such as Double/Reinforced Insulation and provide minimum of 5 mm creepage and 4 mm clearance distance (mounted above chassis/accessible metal parts on Insulating posts etc). Class II units have no reliance upon protective earthing. --
- 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): L1 and T1 (Class F, 130°C) --
- The following end-product enclosures are required: Fire , Electrical --
- The maximum continuous power supply output (Watts) relied on forced air cooling from: See Miscellaneous Enclosure - Output Ratings --
- The equipment is suitable for direct connection to: AC mains supply --
- An investigation of the protective bonding terminals has: Not been conducted --

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

Indicate used abbreviations (if any)

Ref. Certif. No.

US-20068-M1-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Power supply for building-in, switch mode type
Name and address of the applicant Nom et adresse du demandeur	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the manufacturer Nom et adresse du fabricant	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 USA ☒ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	Input: 100-240 V ac; 50/60 Hz; 1.65 A. Output: 56Vdc; 1.43A; 80W Max
Trademark (if any) Marque de fabrique (si elle existe)	XP
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	
Model / Type Ref. Ref. De type	ECM80US56
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	Additionally evaluated to EN 60950-1:2006 / A11:2009 / A1:2010 / A12:2011; National Differences specified in the CB Test Report. ☒ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	E139109-A20-CB-2 issued on 2012-11-08

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2012-11-08
Original Issue Date: 2012-11-01

Signature:

Jolanta M. Wroblewska

Factories:
XP POWER L L C
990 BENECIA AVE
SUNNYVALE CA 94085
USA

XP POWER (KUNSHAN) LIMITED
230 BIN JIANG NAN RD
ZHANG PU TOWN
KUNSHAN, JIANGSU 215321
CHINA

XP POWER (S) PTE LTD
LIPO BLDG, #05-01
621 ALJUNIED RD
SINGAPORE 389834
SINGAPORE

Additional Information:
The original report was modified to include the following changes/additions:
Corrected a factory address. See test report.

Additional information (if necessary)
Information complémentaire (si nécessaire)

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2012-11-08
Original Issue Date: 2012-11-01

Signature:

Jolanta M. Wroblewska

Test Report issued under the responsibility of:

TEST REPORT
IEC 60950-1
Information technology equipment - Safety - Part 1: General requirements

Report Reference No ..... :	E139109-A20-CB-2
Date of issue ..... :	2012-11-01
Total number of pages ..... :	11
CB Testing Laboratory ..... :	UL San Jose
Address ..... :	455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
Applicant's name ..... :	XP POWER L L C SUITE 150
Address ..... :	1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Test specification:	
Standard ..... :	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1B
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	2010-04

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test Report issued under the responsibility of:

TEST REPORT
IEC 60950-1
Information technology equipment - Safety - Part 1: General requirements

Report Reference No ..... :	E139109-A20-CB-2
Date of issue ..... :	2012-11-01
Total number of pages ..... :	60
CB Testing Laboratory ..... :	UL San Jose
Address ..... :	455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
Applicant's name ..... :	XP POWER L L C SUITE 150
Address ..... :	1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Test specification:	
Standard ..... :	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1B
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	2010-04

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Power supply for building-in, switch mode type
Trade Mark ..... :	
Manufacturer ..... :	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference ..... :	ECM80US56
Ratings ..... :	Input: 100-240 V ac, 50/60 Hz, 1.65 A. Output: 56Vdc, 1.43A, 80W Max

Testing procedure and testing location:			
[ ]	**CB Testing Laboratory**		
	Testing location / address..... :		
[ ]	**Associated CB Test Laboratory**		
	Testing location / address..... :		
	Tested by (name + signature) ..... :		
	Approved by (name + signature)... :		
[ ]	**Testing Procedure: TMP**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: WMT**		
	Tested by (name + signature) ..... :		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[x]	**Testing Procedure: SMT**		
	Tested by (name + signature) ..... :	Rodney Reyes	Rodney Reyes
	Approved by (+ signature) ..... :	Tac Pham	
	Supervised by (+ signature) ..... :	Bob Davis	Bob Davis
	Testing location / address..... :	XP Power, LLC 1241 E Dyer Rd, Suite 150, Santa Ana, CA 92705 USA	
[ ]	**Testing Procedure: RMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		

List of Attachments
National Differences (37 pages)
Enclosures (101 pages)
Summary Of Testing Unless otherwise indicated, all tests were conducted at XP Power, LLC 1241 E Dyer Rd, Suite 150, Santa Ana, CA 92705 USA.

Tests performed (name of test and test clause)	**Testing location / Comments**

Guide Information Page - Maximum Output Voltage, Current, and Volt Ampere Measurement (1.2.2.1)	
Input: Single-Phase (1.6.2)	Evaluated under previous CB Scheme investigation.
Durability of Marking (1.7.11)	Evaluated under previous CB Scheme investigation.
Energy Hazard Measurements (2.1.1.5, 2.1.2, 1.2.8.10)	
Capacitance Discharge (2.1.1.7)	Evaluated under previous CB Scheme investigation.
SELV Reliability Test Including Hazardous Voltage Measurements (2.2.2, 2.2.3, 2.2.4, Part 22 6.1)	
Limited Current Circuit Measurement (2.4.1, 2.4.2)	Evaluated under previous CB Scheme investigation.
Humidity (2.9.1, 2.9.2, 5.2.2)	Evaluated under previous CB Scheme investigation.
Determination of Working Voltage; Working Voltage Measurement (2.10.2)	Evaluated under previous CB Scheme investigation.
Transformer and Wire /Insulation Electric Strength (2.10.5.13)	Evaluated under previous CB Scheme investigation.
Heating (4.5.1, 1.4.12, 1.4.13)	Evaluated under previous CB Scheme investigation.
Ball Pressure (4.5.5, 4.5)	Evaluated under previous CB Scheme investigation.
Touch Current (Single-Phase; TN/TT System) (5.1, Annex D)	Evaluated under previous CB Scheme investigation.
Electric Strength (5.2.2)	Evaluated under previous CB Scheme investigation.
Component Failure (5.3.1, 5.3.4, 5.3.7)	Evaluated under previous CB Scheme investigation.
Power Supply Output Short-Circuit/Overload (5.3.7)	Evaluated under previous CB Scheme investigation.

Summary of Compliance with National Differences:

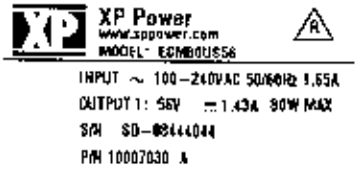
Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AT, BE, BG, BY, CA, CH, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IL, IT, JP, KR, NL, PL, PT, RO, SE, SI, SK, UA, US

The product fulfills the requirements of: EN CSA C22.2 No. 60950-1-07 + A1:2011, EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011, UL 60950-1 2nd Ed. Revised 2011-12-19, IEC 60950-1:2005 + A1:2009

Copy of Marking Plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Test item particulars :	
Equipment mobility ..... :	for building-in
Connection to the mains ..... :	for building-in
Operating condition ..... :	continuous
Access location ..... :	for building-in
Over voltage category (OVC) ..... :	OVC II
Mains supply tolerance (%) or absolute mains supply values ..... :	+10%, -10%
Tested for IT power systems ..... :	No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	Class I or Class II (Determined by end product)
Considered current rating of protective device as part of the building installation (A) ..... :	20 A
Pollution degree (PD) ..... :	PD 2
IP protection class ..... :	IPX0
Altitude of operation (m) ..... :	up to 3048
Altitude of test laboratory (m) ..... :	less than 2000 meters
Mass of equipment (kg) ..... :	0.17 kg
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)
Testing:	
Date(s) of receipt of test item ..... :	2012-10-24
Date(s) of Performance of tests ..... :	2012-10-24

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Manufacturer's Declaration per Sub Clause 6.25 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory and a declaration form the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... Yes

When differences exist, they shall be identified in the General Product Information section.

Name and address of Factory(ies):	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES XP POWER L L C 990 BENECIA AVE SUNNYVALE CA 94085 USA XP POWER (KUNSHAN) LIMITED 10 DONG HUAN RD ZHANG PU TOWN KUNSHAN, JIANGSU 215321 CHINA XP POWER (S) PTE LTD LIPO BLDG, #05-01 621 ALJUNIED RD SINGAPORE 389834 SINGAPORE

GENERAL PRODUCT INFORMATION:

Report Summary

All applicable tests according to the referenced standard(s) have been carried out.

Product Description

The model covered in this report is a component power supply intended for use in Information Technology Equipment. It is an open frame power supply intended for building-in Class I or Class II end-products. Double insulated symbol is optionally provided. Earthing symbol may only be provided for Class I power supplies.

Model Differences

N/A

Additional Information

This CB Report is a reissue of CBTR Ref. No. E139109-A20-CB-1, CB Test Certificate Ref. No. US/12999/UL. Based on previously conducted testing and review of product construction, only limited testing was deemed necessary.

The clearance and creepage distances have additionally been assessed for suitability up to 3048 m elevation (1.15 correction factor as per IEC 60664-1, Table A2).

Manufacturer to provide updated component licenses for those older than 3 years upon request.

The power supply covered by this report employs Double/Reinforced Insulation between Primary and Secondary circuits.

The need for the additional testing and evaluation shall be determined in the end product investigation.

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50°C
- The means of connection to the mains supply is: for building-in, to be determined in the end product.
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: for building-in, to be determined in the end product.
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 (which includes all European national differences, including those specified in this test report).
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: Load side of C17 (Pri to Sec bridging capacitor)
- Power supplies covered by this report were evaluated for both Class I and Class II (double insulated). Double insulated symbol is optionally provided. See Conditions of Acceptability for insulation required for Class II. Earthing symbol may only be provided for Class I power supplies. --

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- The following Production-Line tests are conducted for this product: Electric Strength
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-Earthed Dead Metal: 250 Vrms, 354 Vpk, Primary-SELV: 198 Vrms, 428 Vpk, ,
- The following secondary output circuits are SELV: All outputs
- The following secondary output circuits are at non-hazardous energy levels: All outputs
- The power supply terminals and/or connectors are: Suitable for factory wiring only
- The maximum investigated branch circuit rating is: 20 A

- The investigated Pollution Degree is: 2
- Proper bonding to the end-product main protective earthing termination is: required when the power supply is used in a Class I end product. ,
- An investigation of the protective bonding terminals has: Not been conducted
- The following input terminals/connectors must be connected to the end-product supply neutral: ACN J1-3
- 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): L1, L2 and T1 (Class F, 130°C)
- The following end-product enclosures are required: Electrical, Fire
- The equipment is suitable for direct connection to: AC mains supply
- Printed Wiring Board rated 130°C. --
- The equipment is provided with a fuse in the hot line of the primary circuit. --
- Heatsinks are floating and considered live. They should not be accessible in the end-product. --
- Consideration to repeating the Touch Current test should be given in the end-product evaluation. --
- When installed in a Class I end product, the power supply shall be mounted in a manner that provides, at a minimum, 2.3 mm Clearance/2.5 mm Creepage between the primary sides of power supply and protectively earthed accessible conductive parts. --
- When installed in a Class II end product, the power supply shall be mounted in a manner that provides, at a minimum, 4.6 mm Clearance/5.0 mm Creepage between the power supply and accessible conductive parts. --

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

Indicate used abbreviations (if any)

Ref. Certif. No.

US-19308-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Power Supply for Building-in, Switch Mode Type
Name and address of the applicant Nom et adresse du demandeur	XP POWER INC SUITE 150, 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the manufacturer Nom et adresse du fabricant	XP POWER INC SUITE 150, 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	XP POWER INC 990 BENECIA AVE SUNNYVALE CA 94085 USA ☒ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	Input: 100-240 Vac, 50/60 Hz, 2.2 A Output: 3-48 Vdc, 20 A max, not to exceed 100 W (See Test Report for details)
Trademark (if any) Marque de fabrique (si elle existe)	XP
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	
Model / Type Ref. Ref. De type	ECM100USXX, ECM100USXX*, ECM100USXX 3X5, ECM100US33 >2413 See Page 2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	Additionally evaluated to EN 60950-1:2006/ A11:2009/ A1:2010/ A12:2011; National Differences specified in the CB Test Report. ☐ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	E139109-A7-CB-3 issued on 2012-07-03

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2012-07-03

Signature:

Jolanta M. Wroblewska

Ref. Certif. No.

US-19308-UL

Model Details:
ECM100USXX, ECM100USXX*, ECM100USXX 3X5, ECM100US33 >2413,
where XX can be any number between 03 to 48 designating the output voltage

Factories:

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN
JIANGSU 215321
CHINA

Additional information (if necessary)
Information complémentaire (si nécessaire)

- [x] UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
- [ ] UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
- [ ] UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
- [ ] UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2012-07-03

Signature:

Jolanta M. Wroblewska

Test Report issued under the responsibility of:

TEST REPORT
IEC 60950-1
Information technology equipment - Safety - Part 1: General requirements

Report Reference No ..... :	E139109-A7-CB-3
Date of issue ..... :	2012-07-03
Total number of pages ..... :	70
CB Testing Laboratory ..... :	UL San Jose
Address ..... :	455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
Applicant's name ..... :	XP POWER INC SUITE 150
Address ..... :	1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Test specification:	
Standard ..... :	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1B
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	2010-04

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Power supply for building-in, switch mode type
Trade Mark ..... :	XP
Manufacturer ..... :	XP POWER INC SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference ..... :	ECM100USXX, ECM100USXX*, ECM100USXX 3X5, ECM100USXX-DC 3X5, ECM100US33 >2413, where XX can be any number between 03 to 48 designating the output voltage
Ratings ..... :	Input: 100-240 Vac, 50/60 Hz, 2.2 A Output: 3-48 Vdc, 20 A max, not to exceed 100 W (See Enclosure Miscellaneous for details) For Model ECM100USXX-DC 3X5 only: Input: 106-333 Vdc, 1.14 A Output: 48 Vdc, 1.5A

Testing procedure and testing location:			
[x]	**CB Testing Laboratory**		
	Testing location / address..... :	UL San Jose 455 E. Trimble Rd., San Jose, CA, 95131-1230, USA	
[ ]	**Associated CB Test Laboratory**		
	Testing location / address..... :		
	Tested by (name + signature) ..... :	Longjie Zhang	Longjie Zhang
	Approved by (name + signature)... :	Scott Varner	Scott Varner
[ ]	**Testing Procedure: TMP**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: WMT**		
	Tested by (name + signature) ..... :		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: SMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: RMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		

List of Attachments

National Differences (35 pages)

Enclosures (75 pages)

Summary of Testing:

All Applicable tests according to the referenced standard(s) have been carried out

Summary of Compliance with National Differences:

Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AT, BE, CA, CH, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, KR, NL, PL, PT,

SE, SI, SK, US

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

Test item particulars :	
Equipment mobility ..... :	for building-in
Connection to the mains ..... :	for building-in
Operating condition ..... :	continuous
Access location ..... :	for building-in
Over voltage category (OVC) ..... :	OVC II
Mains supply tolerance (%) or absolute mains supply values ..... :	+10%, -10%
Tested for IT power systems ..... :	No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	Class I or Class II (Determined by end product)
Considered current rating of protective device as part of the building installation (A) ..... :	20A
Pollution degree (PD) ..... :	PD 3
IP protection class ..... :	IPX0
Altitude of operation (m) ..... :	Up to 2000
Altitude of test laboratory (m) ..... :	less than 2000 meters
Mass of equipment (kg) ..... :	0.25 kg
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)
Testing:	
Date(s) of receipt of test item ..... :	2009-08-05, 2010-04-16
Date(s) of Performance of tests ..... :	2009-08-05 to 2009-08-06, 2010-04-20

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Manufacturer's Declaration per Sub Clause 6.25 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory and a declaration form the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... Yes

When differences exist, they shall be identified in the General Product Information section.

Name and address of Factory(ies): XP POWER INC

990 BENECIA AVE
SUNNYVALE CA 94085
UNITED STATES

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN
JIANGSU 215321 CHINA

GENERAL PRODUCT INFORMATION:

Report Summary

All applicable tests according to the referenced standard(s) have been carried out.

Product Description

Models covered in this report are component power supply intended for use in Information Technology Equipment. The need for the additional testing and evaluation shall be determined in the end product investigation.

Magnetic device, transformer T1 employs an (OBJY3), electrical insulation system designated Class 155 °F, max temp rise 115°C

The open frame power supply, no enclosure or chassis, is for building-in Class I or Class II end-products. Double insulated symbol is optionally provided. Earthing symbol may only be provided for Class I power supplies.

The open frame power supplies covered by this report employ Double/Reinforced Insulation between Primary and Secondary circuits.

When installed in a Class I end product, the power supply shall be mounted in a manner that provides, at a minimum, 2 mm Clearance between the primary side of power supply and protectively earthed accessible conductive parts. Also, when installed in a Class I end product, the protective bonding terminal of the power supply shall be reliably connected to the main protective earthing terminal of the end product.

When installed in a Class II end product, the power supply shall be mounted, on insulating posts, in a manner that provides, at a minimum, 4 mm Clearance between the power supply and any accessible conductive parts.

Single fault testing was conducted with the fuses specified in the critical component list (Wickmann-Werke, Type 374). These fuses were determined to be acceptable based on this testing and are subject to accepting NCB approval.

Model ECM100USXX-DC 3X5 is intended to be powered by a secondary DC source and was not evaluated for direct connection to a DC Mains supply.

Model Differences

EMC100USXX Models are identical to ECM100USXX* models except for the PWB Layout, minor secondary components (C43) and the following:

a) Model ECM100USXX* is intended for Class I installation only.
b) Model ECM100USXX is intended for either Class I or Class II Installation

EMC100USXX Models are identical to ECM100(3*5)XX Models except for the physical size of the PWB and the addition of a functional earth trace to the ECM100(3*5)XX PWB layout.

Model ECM100US33>2413 is identical to Model ECM100USXX except for the PWB Layout and the Primary and Secondary Connectors are located on the opposite side of the PWB

Model ECM100USXX-DC 3X5 is similar to Model ECM100USXX 3X5 except for different input ratings (DC input).

Additional Information

Sample marking plate labels, which represent all models have been provided in Enclosure Miscellaneous. Individual units will be marked in accordance with the Output Ratings, also provided in Enclosure Miscellaneous.

This report is a re-issue of CB Test Report (Cert. No. US/14310A/UL and US/14311A/UL), Test Report Reference: E139109-A7-CB-2, issued on 2010-04-23). All required testing was carried out under the original investigation. No testing was required to upgrade the report to IEC 60950-1, Second Edition including Amendment 1. CB Licenses have been updated over three years to the report.

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40°C
- The means of connection to the mains supply is: For building in
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: To be determined in the end-product.
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 (which includes all European national differences, including those specified in this test report).
- Power supplies covered by this report were evaluated for both Class I and Class II (double insulated). Double insulated symbol is optionally provided. Earthing symbol may only be provided for Class I power supplies. --

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- The following Production-Line tests are conducted for this product: Electric Strength
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-

SELV: 250 Vrms, 340Vpk; Primary-Earthed Dead Metal: 250Vrms, 340Vpk.

- The following secondary output circuits are SELV: All ouptuts
- The following secondary output circuits are at non-hazardous energy levels: Entire Series outputs.
- The power supply terminals and/or connectors are: Not investigated for field wiring
- The maximum investigated branch circuit rating is: 20 A
- The investigated Pollution Degree is: 3
- Proper bonding to the end-product main protective earthing termination is: Required when used in Class I application.
- A suitable main disconnect device shall be provided in the end product. --
- To be considered in the end use application: open frame power supply, no enclosure or chassis, for building-in Class I or Class II end-products. Model ECM100USXX* is for Class I end products only, all other Models covered by this report can be installed in Class I or Class II end products. , --
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Entire series = 250 Vrms (340Vpk) --
- The following output terminals were referenced to earth during performance testing: 0 V terminals. --
- The maximum investigated branch circuit rating is: 20 A --
- An investigation of the protective earthing terminal has: Not been conducted --
- The following input terminals/connectors must be connected to the end-product supply neutral: AC N --
- The following end-product enclosures are required: , Fire, , Electrical --
- The following magnetic devices are provided with an OBJY3 insulation system with the indicated rating greater than Class A (105°C): T1 (Class F, 155°C). Heating test shall be conducted in the end-product. --
- Heatsinks are floating and considered live. They should not be accessible in the end-product. --
- The power supply shall be mounted on insulating posts that provide a minimum of 4 mm Clearance

between the power supply and accessible conductive parts when installed in a Class II end product. --

- The power supply shall be mounted in a manner that provides, at a minimum, 2 mm Clearance between the power supply and protectively earthed accessible conductive parts when mounted in a Class I end product. Also, the protective bonding terminal of the power supply shall be reliably bonded to the main protective earthing terminal of the end product when installed in a Class I end product. --

- The power supplies covered by this report have a fuse in the neutral of the primary circuit. The need for a marking to warn a service person of the hazards associated with neutral fusing shall be considered in the end product. --

- Consideration to repeating the Touch Current test should be given in the end-product evaluation. --

- Model ECM100USXX-DC 3X5 is intended to be powered by a secondary DC source and was not evaluated for direct connection to a DC Mains supply. --

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

Indicate used abbreviations (if any)

Ref. Certif. No.

US-20826-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Power Supply for Building-in, Switch Mode Type
Name and address of the applicant Nom et adresse du demandeur	XP POWER L L C SUITE 150, 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the manufacturer Nom et adresse du fabricant	XP POWER L L C SUITE 150, 1241 E DYER RD SANTA ANA CA 92705, USA
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	XP POWER L L C 990 BENECIA AVE SUNNYVALE CA 94085 USA ☒ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	Input: 100-240 Vac, 50/60 Hz, 2.2 A Output: 12 Vdc, 8.3 A, 100 W Max
Trademark (if any) Marque de fabrique (si elle existe)	XP
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	
Model / Type Ref. Ref. De type	ECM100US12-XA0203A
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	Additionally evaluated to EN 60950-1:2006/ A11:2009/ A1:2010/ A12:2011; National Differences specified in the CB Test Report. ☐ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	E139109-A119-CB-1 issued on 2013-02-05

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2013-02-05

Signature:

Jolanta M. Wroblewska

Factories:

XP POWER (S) PTE LTD
LIPO BLDG, #05-01
621 ALJUNIED RD
SINGAPORE 389834
SINGAPORE

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN KUNSHAN
JIANGSU 215321
CHINA

Additional information (if necessary)
Information complémentaire (si nécessaire)

- [x] UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
- [ ] UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
- [ ] UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
- [ ] UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2013-02-05

Signature:

Jolanta M. Wroblewska

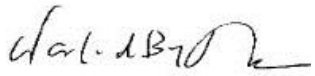
Test Report issued under the responsibility of:

TEST REPORT
IEC 60950-1
Information technology equipment - Safety - Part 1: General requirements

Report Reference No ..... :	E139109-A119-CB-1
Date of issue ..... :	2013-02-05
Total number of pages ..... :	65
CB Testing Laboratory ..... :	UL San Jose
Address ..... :	455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
Applicant's name ..... :	XP POWER L L C
Address ..... :	SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Test specification:	
Standard ..... :	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1B
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	2010-04

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Power supply for building-in, switch mode type
Trade Mark ..... :	XP 
Manufacturer ..... :	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference ..... :	ECM100US12-XA0203A
Ratings ..... :	Input: 100-240 Vac, 50/60 Hz, 2.2 A Output: 12 Vdc, 8.3 A, 100 W Max

Testing procedure and testing location:			
[ ]	**CB Testing Laboratory**		
	Testing location / address..... :		
[x]	**Associated CB Test Laboratory**		
	Testing location / address..... :	UL Brea 2929 Imperial Hwy, Ste 100, Brea, CA, 92821, USA	
	Tested by (name + signature) ..... :	Sal Oseguera	
	Approved by (name + signature)... :	Walid Beytoughan	
[ ]	**Testing Procedure: TMP**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: WMT**		
	Tested by (name + signature) ..... :		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: SMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: RMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		

List of Attachments
National Differences (37 pages)
Enclosures (35 pages)
Summary Of Testing Unless otherwise indicated, all tests were conducted at UL Brea 2929 Imperial Hwy, Ste 100, Brea, CA, 92821, USA.

	Tests performed (name of test and test clause)	**Testing location / Comments**
	Power Supply Reference Page	
	Guide Information Page - Maximum Output Voltage, Current, and Volt Ampere Measurement (1.2.2.1)	

Input: Single-Phase (1.6.2)	
Energy Hazard Measurements (2.1.1.5, 2.1.2, 1.2.8.10)	
Capacitance Discharge (2.1.1.7)	
SELV Reliability Test Including Hazardous Voltage Measurements (2.2.2, 2.2.3, 2.2.4, Part 22 6.1)	
Limited Current Circuit Measurement (2.4.1, 2.4.2)	
Humidity (2.9.1, 2.9.2, 5.2.2)	
Determination of Working Voltage; Working Voltage Measurement (2.10.2)	
Thin Sheet Material (2.10.5.9, 2.10.5.10, 2.10.5.6)	
Heating (4.5.1, 1.4.12, 1.4.13)	
Ball Pressure (4.5.5, 4.5)	Evaluated under CB Scheme report E139109-A7-CB.
Touch Current (Single-Phase; TN/TT System) (5.1, Annex D)	
Electric Strength (5.2.2)	
Component Failure (5.3.1, 5.3.4, 5.3.7)	
Transformer Abnormal Operation (5.3.3, 5.3.7b, Annex C.1)	
Power Supply Output Short-Circuit/Overload (5.3.7)	

Summary of Compliance with National Differences:

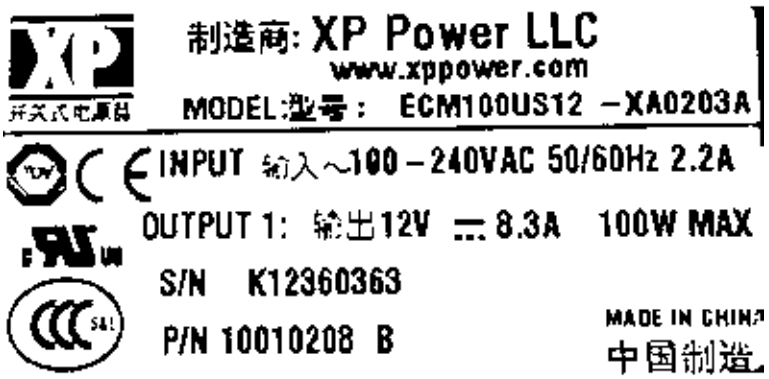
Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AT, BE, BG, BY, CA, CH, CN, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IL, IT, JP, KR, NL, PL, PT, RO, SE, SI, SK, UA, US

The product fulfills the requirements of: CSA C22.2 No. 60950-1-07 + A1:2011, EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011, UL 60950-1 2nd Ed. Revised 2011-12-19, IEC 60950-1:2005 + A1:2009

Copy of Marking Plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Test item particulars :	
Equipment mobility ..... :	for building-in
Connection to the mains ..... :	for building-in
Operating condition ..... :	continuous
Access location ..... :	for building-in
Over voltage category (OVC) ..... :	OVC II
Mains supply tolerance (%) or absolute mains supply values ..... :	+10%, -10%
Tested for IT power systems ..... :	No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	Class I (earthed) or Class II (Determined by end product)
Considered current rating of protective device as part of the building installation (A) ..... :	20A
Pollution degree (PD) ..... :	PD 2
IP protection class ..... :	IPX0
Altitude of operation (m) ..... :	Up to 5000
Altitude of test laboratory (m) ..... :	less than 2000 meters
Mass of equipment (kg) ..... :	0.25 kg
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)
Testing:	
Date(s) of receipt of test item ..... :	2012-12-12
Date(s) of Performance of tests ..... :	2012-12-13 to 2013-01-29
General remarks:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the testing laboratory. "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a point is used as the decimal separator.	
Manufacturer's Declaration per Sub Clause 6.25 of IECEE 02:	Yes
The application for obtaining a CB Test Certificate includes more than one factory and a declaration form the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... When differences exist, they shall be identified in the General Product Information section.	
Name and address of Factory(ies):	XP POWER L L C 990 BENECIA AVE

SUNNYVALE CA 94085
UNITED STATES

XP POWER (S) PTE LTD
LIPO BLDG, #05-01
621 ALJUNIED RD
SINGAPORE 389834 SINGAPORE

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN
JIANGSU 215321 CHINA

GENERAL PRODUCT INFORMATION:

Report Summary

All applicable tests according to the referenced standard(s) have been carried out.

Product Description

The model covered in this report is a component power supply intended for use in Information Technology Equipment. It is an open frame power supply intended for building-in Class I or Class II end-products.

Model Differences

N/A

Additional Information

The required clearance values have been assessed for suitability up to 5000 m elevation (1.48 correction factor as per IEC 60664-1, Table A2).

The need for the additional testing and evaluation shall be determined in the end product investigation.

The power supply covered by this report employs Double/Reinforced Insulation between Primary and Secondary circuits.

Manufacturer to provide up to date IEC Licensed for component licenses greater than 3 years upon request.

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50°C at 90% load.
- The means of connection to the mains supply is: For building-in, to be determined in the end product.
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: For building-in, to be determined in the end-

product.

- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 (which includes all European national differences, including those specified in this test report).
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: the output of C22A (Pri to Sec bridging capacitor).
- Power supplies covered by this report were evaluated for both Class I and Class II (double insulated). Double insulated symbol is optionally provided. Earthing symbol may only be provided for Class I power supplies. --
- The spacings were assessed for a maximum altitude of 5000m. --

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- The following Production-Line tests are conducted for this product: Electric Strength
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-Earthed Dead Metal: 268 Vrms, 392 Vpk, Primary-SELV: 298 Vrms, 532 Vpk
- The following secondary output circuits are SELV: All ouptuts.
- The following secondary output circuits are at non-hazardous energy levels: All ouptuts.
- The power supply terminals and/or connectors are: Not investigated for field wiring
- The maximum investigated branch circuit rating is: 20 A
- The investigated Pollution Degree is: 2,
- Proper bonding to the end-product main protective earthing termination is: Required when sued in a Class I application.
- An investigation of the protective bonding terminals has: Not been conducted
- The following input terminals/connectors must be connected to the end-product supply neutral: Input Connector (J1) N terminal.
- 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): T1 (Class F, 155°C)
- The following end-product enclosures are required: Mechanical, Fire, Electrical
- Heatsinks are floating and considered live. They should not be accessible in the end-product. --
- The power supply covered by this report is provided with a fuse in both the Line and Neutral of the primary circuit. The need for a marking to warn a service person of the hazards associated with neutral fusing shall be considered in the end product. --
- Consideration to repeating the Touch Current test should be given in the end-product evaluation. --
- Clearance spacing evaluated for 5000 m altitude. Additional consideration maybe necessary in the end-use product. --

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		- supplementary insulation	SI

polarity:	BOP		
- double insulation	DI	- reinforced insulation	RI

Indicate used abbreviations (if any)

Ref. Certif. No.

US-17632-A1-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Power supply for building-in, switch mode type
Name and address of the applicant Nom et adresse du demandeur	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA, CA 92705 United States
Name and address of the manufacturer Nom et adresse du fabricant	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA, CA 92705 United States
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	XP POWER L L C 990 BENECIA AVE SUNNYVALE CA 94085 UNITED STATES ☒ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	See Page 2
Trademark (if any) Marque de fabrique (si elle existe)	XP
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	
Model / Type Ref. Ref. De type	ECM100UXY See Page 2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	Additionally evaluated to EN 60950-1:2006 /A11:2009 /A1:2010 /A12:2011; National Differences specified in the CB Test Report. ☒ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	E139109-A84-CB-1 issued on 2013-04-11

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2013-04-11
Original Issue Date: 2011-08-30

Signature:

Jolanta M. Wroblewska

Model Details:
ECM100UXY (where X represents D2, T3 or Q4 and Y represents 1 to 7). May be provided with suffix (3X5) or *, representing PWB size or alternate trace layout.

Factories:
XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD ZHANGPU TOWN KUNSHAN JIANGSU 215300
CHINA

Ratings:
Input: 100-240 Vac, 50/60 Hz, 2.2 A Max

Output:
V1: 5.0 or 3.0 Vdc, 12.0 or 10.0 A
V2: 3.3, 5.0, 12.0, 15.0 or 24.0 Vdc, 2.0, 3.0 or 5.0 A
V3 (optional): -5.0, +/-12.0 or +/-15.0 Vdc, 0.8 A
V4 (optional): -5.0, -12.0 or -15.0 Vdc, 0.5 A

Maximum 100 W combined outputs.
See Test Report for specific output ratings.

Additional Information:
The original report was modified to include the following changes/additions:
Evaluate to EN 60950-1: A12:2011, add USA/Canada National Differences, update components, add Condition of Acceptability, factory address correction, revise Clause 8 verdict to "Pass" and append "Letter of Assurance" to report.

Additional information (if necessary)
Information complémentaire (si nécessaire)

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2013-04-11
Original Issue Date: 2011-08-30

Signature:

Jolanta M. Wroblewska

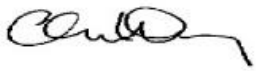
Test Report issued under the responsibility of:

TEST REPORT
IEC 60950-1
Information technology equipment - Safety - Part 1: General requirements

Report Reference No ..... :	E139109-A84-CB-1
Date of issue ..... :	2011-08-30
Total number of pages ..... :	19
CB Testing Laboratory ..... :	UL San Jose
Address ..... :	455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
Applicant's name ..... :	XP POWER L L C
Address ..... :	SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Test specification:	
Standard ..... :	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1B
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	2010-04

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description	:	Power supply for building-in, switch mode type
Trade Mark	:	XP
Manufacturer	:	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference	:	ECM100UXY (where X represents D2, T3 or Q4 and Y represents 1 to 7). May be provided with suffix (3X5) or *, representing PWB size or alternate trace layout.
Ratings	:	Input: 100-240 Vac, 50/60 Hz, 2.2 A Max Output: V1: 5.0 or 3.0 Vdc, 12.0 or 10.0 A V2: 3.3, 5.0, 12.0, 15.0 or 24.0 Vdc, 2.0, 3.0 or 5.0 A V3 (optional): -5.0, +/-12.0 or +/-15.0 Vdc, 0.8 A V4 (optional): -5.0, -12.0 or -15.0 Vdc, 0.5 A Maximum 100 W combined outputs. See enclosure 'Miscellaneous' for specific output ratings.

Testing procedure and testing location:			
[ ]	**CB Testing Laboratory**		
	Testing location / address..... :		
[x]	**Associated CB Test Laboratory**		
	Testing location / address..... :	UL Brea 2929 Imperial Hwy, Ste 100, Brea, CA, 92821, USA	
	Tested by (name + signature) ..... :	Sal Oseguera	
	Approved by (name + signature)... :	Glenn Wang	
[ ]	**Testing Procedure: TMP**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: WMT**		
	Tested by (name + signature) ..... :		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: SMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: RMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		

List of Attachments

National Differences (23 pages)

Enclosures (3 pages)

Summary of Testing:

No tests were conducted

Summary of Compliance with National Differences:

Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AT, BE, BG, CA, CH, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IT, JP, KR, NL, NO, PL, PT, RO, SE, SG, SI, SK, US

The product fulfills the requirements of: CSA C22.2 No. 60950-1-07 + A1:2011, EN 60950-1:2006 + A1:2010

+ A11:2009 + A12:2011, IEC 60950-1:2005 + A1:2009, UL 60950-1 2nd Ed. Revised 2011-12-19

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

Test item particulars :	
Equipment mobility ..... :	for building-in
Connection to the mains ..... :	for building-in
Operating condition ..... :	continuous
Access location ..... :	for building in
Over voltage category (OVC) ..... :	OVC II
Mains supply tolerance (%) or absolute mains supply values ..... :	+10%, -10%
Tested for IT power systems ..... :	No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	Class I or Class II (Determined by end product)
Considered current rating of protective device as part of the building installation (A) ..... :	max. 20 A
Pollution degree (PD) ..... :	PD 2
IP protection class ..... :	IPX0
Altitude of operation (m) ..... :	3048
Altitude of test laboratory (m) ..... :	less than 2000 meters
Mass of equipment (kg) ..... :	0.25 kg
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)
Testing:	
Date(s) of receipt of test item ..... :	N/A
Date(s) of Performance of tests ..... :	N/A

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Manufacturer's Declaration per Sub Clause 6.25 of IECEE 02: Yes

The application for obtaining a CB Test Certificate includes more than one factory and a declaration form the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....

When differences exist, they shall be identified in the General Product Information section.

Name and address of Factory(ies): XP POWER L L C
990 BENECIA AVE
SUNNYVALE CA 94085

UNITED STATES

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN
JIANGSU 215300 CHINA

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2013-04-11 to include the following changes/additions:
1. Evaluate to EN 60950-1: A12:2011.
2. Add USA/Canada National Differences.
3. Required clearance values adjusted for 3048 m (1.15 correction factor per IEC 60664-1, Table A2).
4. Add Input Connector - Molex, type 41791 Series
5. Critical Component List description "Various" revised to "Interchangeable" per IEC request.
6. Add Condition of Acceptability for Class I and Class II end product application.
7. Factory Address Correction: XP POWER (KUNSHAN) LTD zip code revised from "215321" to "215300".
8. Revise Clause 8 verdict to "Pass" and append "Letter of Assurance" to report.

Product Description

Models covered in this report are open frame component power supply for building-in Class I or Class II end products. Double insulated symbol is optionally provided. Earthing symbol may only be provided for Class I power supplies. The power supply is provided with 2, 3 or 4 outputs with a maximum combined power of 100 W with 5 cfm external forced air coolilng.

Model Differences

All models are similar except the number of outputs (2, 3 or 4), output voltage/current rating and corresponding PWB population. 3x5 version differs only by PWB size, mounting hole locations and additional ground trace between mounting pads. * version differs only by secondary circuit trace layout, not provided with Basic/Supplementary Insulation between secondary circuits to mounting pads.
D2 represent dual output version.
T3 represent triple output version.
Q4 represent quad output version.
y represents output voltage variation.

Additional Information

This test report was based on the CB Report by CSA International CB Certificate Number CA/7810/CSA, dated 2006-08-16, submitted via the CB Scheme and additional testing performed under UL60601-1, 1st Edition/ IEC 60601-1. The test results and clause verdicts of the above noted report were reviewed and found to comply with IEC 60950-1:2005 (2nd Ed); Am 1:2009.

The open frame power supplies covered by this report employ Double/Reinforced Insulation between Primary and Secondary circuits.

When installed in a Class I end product, the power supply shall be mounted in a manner that provides, at a minimum, 2.3 mm Clearance between the primary side of power supply and protectively earthed accessible

conductive parts. Also, when installed in a Class I end product, the protective bonding terminal of the power supply shall be reliably connected to the main protective earthing terminal of the end product.

When installed in a Class II end product, the power supply shall be mounted, on insulating posts, in a manner that provides, at a minimum, 5 mm Clearance between the power supply and any accessible conductive parts.

Required values for clearance are adjusted for 3048 m (1.15 correction factor as per IEC 60664-1, Table A2).

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50°C output de-rated to 80 W, convection cooling., 60°C at 100 W with 5 cfm external cooling., 70°C output de-rated to 40 W, convection cooling., 80°C output de-rated to 50 W with 5 cfm external cooling.
- The means of connection to the mains supply is: for building-in
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: To be determined in the end-product.,
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 (which includes all European national differences, including those specified in this test report).
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: Load side of bridging capacitor C22.
- Power supplies covered by this report were evaluated for both Class I and Class II (double insulated). Double insulated symbol is optionally provided. Earthing symbol may only be provided for Class I power supplies. --

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- The following Production-Line tests are conducted for this product: Electric Strength
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: 297 Vrms, 624 Vpk,
- The following secondary output circuits are SELV: All outputs
- The following secondary output circuits are at non-hazardous energy levels: All outputs
- The power supply terminals and/or connectors are: Suitable for factory wiring only
- The maximum investigated branch circuit rating is: 20 A
- The investigated Pollution Degree is: 2
- Proper bonding to the end-product main protective earthing termination is: Required (Class I)
- An investigation of the protective bonding terminals has: Not been conducted
- The following input terminals/connectors must be connected to the end-product supply neutral: AC N
- 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): T1, T2 Class F (155°C)., Inductors L1 and L5 suitable for up to 130°C (Functional insulation)
- The following end-product enclosures are required: Mechanical, Fire, Electrical

- The maximum continuous power supply output (Watts) relied on forced air cooling from: 5 cfm external forced air-cooling directed downward.
- A suitable main disconnect device shall be provided in the end product. --
- The following output terminals were referenced to earth during performance testing: 0 V terminals. --
- Heatsinks are floating and considered live. They should not be accessible in the end-product. --
- The power supplies covered by this report have a fuse in the neutral of the primary circuit. The need for a marking to warn a service person of the hazards associated with double pole/neutral fusing shall be considered in the end product. --
- Consideration to repeating the Touch Current test should be given in the end-product evaluation. --
- Clearance spacing evaluated for 3048m altitude. Additional consideration maybe necessary in the , end-use product. --
- When installed in a Class I end product, the power supply shall be mounted in a manner that provides, at a minimum, 2.3 mm Clearance/2.5 mm Creepage (3048 m altitude) between the primary sides of power supply and protectively earthed accessible conductive parts. --
- When installed in a Class II end product, the power supply shall be mounted in a manner that provides, at a minimum, 5.3 mm Clearance/6.0 mm Creepage (3048 m altitude) between the power supply and accessible conductive parts. --

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

Indicate used abbreviations (if any)