Ref. Certif. No.

US-18953-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 Supplies
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	Model CCH400PSXX Input: 100-240 Vac, 50/60 Hz, 6.5 A Model CCH600PSXX Input: 100-240 Vac, 50/60 Hz, 8.9 A Output: See Model Differences for ratings.
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	CCH400PSXX, CCH600PSXX 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-A90-CB-1 issued on 2012-05-07

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: 2012-05-08

Signature:

Jolanta M. Wroblewska

Ref. Certif. No.

US-18953-UL

Model Details:
CCH400PSXX,CCH600PSXX (where XX = can be any number between 12 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: 2012-05-08

Signature:

Jolanta M. Wroblewska

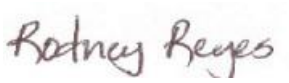
Test Report issued under the responsibility of:

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

Report Reference No ..... :	E139109-A90-CB-1
Date of issue ..... :	2012-05-07
Total number of pages ..... :	90
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 ..... :	Switching Power Supplies
Trade Mark ..... :	
Manufacturer ..... :	XP POWER LLC SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference ..... :	CCH400PSXX and CCH600PSXX (where XX = can be any number between 12 to 48 designating the output voltage)
Ratings ..... :	Model CCH400PSXX Input: 100-240 Vac, 50/60 Hz, 6.5 A Model CCH600PSXX Input: 100-240 Vac, 50/60 Hz, 8.9 A Output: See Model Differences for ratings.

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) ..... :	Linus Park	
	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 (176 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**
	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)

Protective Bonding I (2.6.3.4, 2.6.1).7)

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)

Transformer and Wire /Insulation Electric Strength (2.10.5.13)

Heating (4.5.1, 1.4.12, 1.4.13)

Ball Pressure (4.5.5, 4.5)

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)

Abnormal Operation (5.3.1 - 5.3.9)

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, UK, 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

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 ..... :	To be determined in the end-use product.
Operating condition ..... :	continuous
Access location ..... :	To be determined in the end-use product.
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)
Considered current rating of protective device as part of the building installation (A) ..... :	Model CCH400PSXX: 6.5A, Model CCH600PSXX: 8.9A
Pollution degree (PD) ..... :	PD 2
IP protection class ..... :	IP X0
Altitude of operation (m) ..... :	3048
Altitude of test laboratory (m) ..... :	40
Mass of equipment (kg) ..... :	1.5
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 ..... :	2011-09-06
Date(s) of Performance of tests ..... :	2011-11-16 to 2012-03-01

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

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

Product Description

The product is a component AC-DC power supply for building-in, open frame type provided with a metal chassis, incorporating primary and SELV components and a baseplate for conduction cooling.

Model Differences

The power supplies in the series are differentiated by the output voltage and current ratings, number of turns of primary/secondary windings in the Transformer (T1 (Power)) and minor differences in the secondary circuit components.

Model CCH400PSXX Series is identical to Model CCH600PSXX Series with exception to the output ratings for their respective series.

Suffix "XX" denotes the output voltage rating.

See below for Output Ratings:

Model CCH400PS12: Output Rated: 12 Vdc, 34.0 A (400 W); Stand-by: 5 V, 0.5A
Model CCH400PS24: Output Rated: 24 Vdc, 17.0 A (400 W); Stand-by: 5 V, 0.5A
Model CCH400PS28: Output Rated: 28 Vdc, 14.5 A (400 W); Stand-by: 5 V, 0.5A
Model CCH400PS48: Output Rated: 48 Vdc, 8.5 A (400 W); Stand-by: 5 V, 0.5A

Model CCH600PS12: Output Rated: 12 Vdc, 50.0 A (600 W); Stand-by: 5 V, 0.5A
Model CCH600PS24: Output Rated: 24 Vdc, 25.0 A (600 W); Stand-by: 5 V, 0.5A
Model CCH600PS28: Output Rated: 28 Vdc, 21.5 A (600 W); Stand-by: 5 V, 0.5A
Model CCH600PS48: Output Rated: 48 Vdc, 12.5 A (600 W); Stand-by: 5 V, 0.5A

Additional Information

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

Power supply is designed with a base plate that acts as a heat sink to all the power supply components; as a result, the actual component temperatures are based upon the relative temperature rise from the base plate temperature. Based upon this design, the base plate temperature should not exceed 85°C to insure

component temperatures do not exceed their limits.

Nameplate Marking label provided is considered representative of all models.

Technical Considerations

- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered 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).

Engineering Conditions of Acceptability

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

- Consideration to repeating Heating and Touch Current Tests should be given in the end-product evaluation. --
- Means of disconnection to be provided as part of the end-product. --
- Components within the power supply are heat sinked to the base plate of the power supply. The base plate temperature should not exceed 85°C as part of the end product evaluation. --
- The maximum continuous power supply output (Watts) relied on the base plate temperature not exceeding 85°C. End product shall determine appropriate heat sink size, maximum recommended ambient temperature, and output load to prevent the base plate temperature from exceeding 85°C. --
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-Earthed Dead Metal: 243 Vrms, 366 Vpk, Primary-SELV: 353 Vrms, 631 Vpk --
- The following secondary output circuits are SELV: All outputs --
- The following secondary output circuits are at hazardous energy levels: All 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: 2 --
- Proper bonding to the end-product main protective earthing termination is: Required --

- 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: CON3 --
- The following end-product enclosures are required: Mechanical, , Fire, and , Electrical --
- The following Production-Line tests are conducted for this product: Earthing Continuity, , Electric Strength --
- 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): Platform: L1-L5, L7, L8, L12, L13, PFC Inductor, T1 and T3 (Class F, 155°C); Control Board: L15 and T1 (Class F, 155°C) --
- The following components require special consideration during end-product Thermal (Heating) tests due to the indicated maximum temperature measurements during component-level testing: Power Supply Baseplate (85°C) --

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)