

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

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

Abes Technology Co Ltd  
3 Lane 891, Sec 1 Zhangshui Rd Xiushui Hsiang Changhua  
Hsien 504  
TAIWAN

Note: When more than one factory, please report on page 2  
Note: Lorsque il y a plus d'une usine, veuillez utiliser la 2<sup>ème</sup> page

Additional Information on page 2

Ratings and principal characteristics  
Valeurs nominales et caractéristiques principales

Input: 100-240 Vac, 2.5 A, 50/60 Hz  
Output: See Test Report Enclosure - Miscellaneous Ratings  
Table (7-01) for details.

Trademark (if any)  
Marque de fabrique (si elle existe)



SMT

Type of Manufacturer's Testing Laboratories used  
Type de programme du laboratoire d'essais  
constructeur

ECP180PSXX  
See Page 2

Model / Type Ref.  
Ref. De type

Additional information (if necessary may also be  
reported on page 2)  
Les informations complémentaires (si nécessaire,,  
peuvent être indiqués sur la 2<sup>ème</sup> 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

E321744-A18-CB-1 issued on 2013-12-30

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](http://www.ul.com/ncbnames)

Date: 2013-12-30

Signature:

Jolanta M. Wroblewska



Ref. Certif. No.

**US-22730-UL**

**Model Details:**

ECP180PSXX, where XX can be any number between 12 and 48 designating the output voltage, may also be provided with suffix "SF" for removal of F2.

**Factories:**

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

**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](http://www.ul.com/ncbnames)

Date: 2013-12-30

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** .....: E321744-A18-CB-1

Date of issue .....: 2013-12-30

Total number of pages .....: 193

**CB Testing Laboratory** .....: UL Camas

Address .....: 2600 N.W. Lake Road, Camas, WA, 98607, 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 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

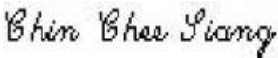
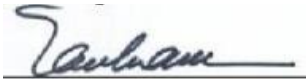

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If this test Report is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

**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.**

<b>Test item description</b> .....	Power supply for building-in
Trade Mark .....	
Manufacturer .....	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference .....	ECP180PSXX, where XX can be any number between 12 and 48 designating the output voltage, may also be provided with suffix "SF" for removal of F2
Ratings .....	Input: 100-240 Vac, 2.5 A, 50/60 Hz Output: See Enclosure - Miscellaneous Ratings Table (7-01) for details.

<b>Testing procedure and testing location:</b>	
<input type="checkbox"/>	<b>CB Testing Laboratory</b> Testing location / address..... :
<input type="checkbox"/>	<b>Associated CB Test Laboratory</b> Testing location / address..... : Tested by (name + signature) ..... : _____ Approved by (name + signature) ... : _____
<input type="checkbox"/>	<b>Testing Procedure: TMP</b> Tested by (name + signature) ..... : _____ Approved by (+ signature) ..... : _____ Testing location / address..... :
<input type="checkbox"/>	<b>Testing Procedure: WMT</b> Tested by (name + signature) ..... : _____ Witnessed by (+ signature)..... : _____ Approved by (+ signature) ..... : _____ Testing location / address..... :
<input checked="" type="checkbox"/>	<b>Testing Procedure: SMT</b> Tested by (name + signature) ..... : Chin Chee Siang <span style="float: right;"></span>  Approved by (+ signature) ..... : Tac Pham <span style="float: right;"></span>  Supervised by (+ signature) ..... : Timothy L. Gambrell <span style="float: right;"></span>  Testing location / address..... : XP POWER LTD 401 COMMONWEALTH DR, HAW PAR TECHNOCENTRE LOBBY B, #02-02,SINGAPORE 149598
<input type="checkbox"/>	<b>Testing Procedure: RMT</b> Tested by (name + signature) ..... : _____ Approved by (+ signature) ..... : _____ Supervised by (+ signature) ..... : _____ Testing location / address..... :

<b>List of Attachments</b>	
National Differences (17 pages)	
Enclosures (72 pages)	
<b>Summary Of Testing</b>	
Unless otherwise indicated, all tests were conducted at XP POWER LTD 401 COMMONWEALTH DR, HAW PAR TECHNOCENTRE LOBBY B, #02-02,SINGAPORE 149598 .	
<b>Tests performed (name of test and test clause)</b>	<b>Testing location / Comments</b>
Power Input Test (4.11)	

Humidity Preconditioning Treatment (5.7)

Voltage or Charge Limitation (8.4.3)

Working Voltage Measurement (8.5.4)

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)

RISK MANAGEMENT FILE Review (4.2)

**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, JP, 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.



<b>Test item particulars (see also Clause 6):</b>		
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 .....	None	
Other options include .....	None	
<b>Testing:</b>		
Date of receipt of test item(s) .....	2013-10-07	
Dates tests performed .....	2013-10-07 to 2013-12-05	
<b>Possible test case verdicts:</b>		
- 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)	
<b>Abbreviations used in the report:</b>		
- normal condition .....	N.C. - single fault condition .....	S.F.C.
- means of Operator protection .....	MOOP - means of Patient protection .....	MOPP
<b>General remarks:</b>		
<p>"(see Attachment #)" refers to additional information appended to the report.                  "(see appended table)" refers to a table appended to the report.</p> <p>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.</p> <p>Throughout this report a point is used as the decimal separator.</p>		
<b>Manufacturer's Declaration per Sub Clause 4.2.5 of IECEE 02:</b>		
<p>The application for obtaining a CB Test Certificate includes more than one factory 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 .....</p> <p>When differences exist, they shall be identified in the General Product Information section.</p>		
<b>Name and address of Factory(ies):</b>	Abes Technology Co Ltd 3 Lane 891, Sec 1 Zhangshui Rd Xiushui Hsiang Changhua Hsien 504 TAIWAN	

Not  
Applicable



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 Medical 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

All models in the Model ECP180PSXX series are identical with exception to the Mains Transformer, TR1, and minor secondary components that allow for different output voltage ratings.

See below for Model Ratings Table for 50°C ambient with 10 cfm fan applied 5 cm from input connector CN1 blowing inward:

Model ECP180PS12: Output Rated: 12 Vdc, 15A  
Model ECP180PS15: Output Rated: 15 Vdc, 12A  
Model ECP180PS24: Output Rated: 24 Vdc, 7.5 A  
Model ECP180PS28: Output Rated: 28 Vdc, 6.43 A  
Model ECP180PS36: Output Rated: 36 Vdc, 5A  
Model ECP180PS48: Output Rated: 48 Vdc, 3.75A

See Enclosure 7-01 for additional ratings information.

### Additional Information

The clearance distances have additionally been assessed for suitability up to 5000 m elevation (1.29 correction factor from Table 8 of IEC 60601-1, Third Ed.).

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

The nameplate markings provided are considered representative of the entire series.

The power supply series covered by this report employ 2 Methods of Patient Protection (MOPP) between Primary and Secondary circuits.

### Technical Considerations

- The product was investigated to the following additional standards: EN 60601-1: 2006 + CORR:

2010 (Medical electrical equipment Part 1: General requirements for basic safety and essential performance), 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), 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)

- The product was not investigated to the following standards or clauses: Biocompatibility (ISO 10993-1), 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

#### **Engineering Conditions of Acceptability**

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

- Considerations to the applied parts requirement, to be conducted as end-product. --
- The input/output connectors are not acceptable for field connections, they are only intended for factory wiring inside the end-use product. --
- The component shall be installed in compliance with the enclosure, mounting, marking, spacing, and separation requirements of the end use application. --
- Power supply provides the following MOPP (means of patient protection): 2 MOPP based upon a working voltage 250 Vrms, 388 Vpk between Primary to Secondary, 1 MOPP based upon a working voltage 241 Vrms, 343 Vpk between Primary and Earth, two MOPP based upon a working voltage 48Vdc between secondary to floated earth trace on PWB for BF output consideration, one MOPP based upon a working voltage 250 Vrms between secondary and earthing trace or chassis for BF output consideration. --
- Temperature, Leakage Current (including the use of non-frequency weighted device of 8.7.3e), Protective Earthing, Dielectric Voltage Withstand, and Interruption of the Power Supply tests should be considered as part of the end product evaluation. --
- The product was submitted and tested for use at the manufacturer's recommended ambient temperature (T<sub>ma</sub>) of 50°C at Full Load and 70°C at Half Load. --
- Magnetic devices TR1 employ a Class B (130°C) or higher insulation system. --
- The PWB is rated 130°C. --
- The end-product evaluation shall ensure that the requirements related to Accompanying Documents, Clause 7.9 are met. --
- The following input terminals/connectors must be connected to the end-product supply neutral: AC-N CN1 --
- The maximum continuous power supply output (Watts) relied on forced air cooling from: 10 cfm fan applied 5 cm from input connector CN1 blowing inward --
- For models marked "SF", additional fusing may be required in the end product to meet the requirement of Cl. 8.11.5, Mains fuses and Over Current Release. These products are only provided with a single fuse. --
- Unit is rated 100-240 Vac with an output of 120W, however when conducting heating test at -10% tolerance (90 Vac) using convection cooling, the unit was loaded to 110W. Consideration for additional testing to be considered in the end product. --

- When installed in a Class I end product, the power supply shall be mounted in a manner that provides sufficient clearance and creepage distance between the primary side of the 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 in a manner that provides sufficient clearance and creepage distance between the hazardous parts and any accessible conductive parts. --
- Overcurrent releases of adequate breaking capacity must be employed in the end product. --

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

Name and address of the applicant  
Nom et adresse du demandeur

Name and address of the manufacturer  
Nom et adresse du fabricant

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 2<sup>ème</sup> page

Ratings and principal characteristics  
Valeurs nominales et caractéristiques principales

Trademark (if any)  
Marque de fabrique (si elle existe)

Type of Manufacturer's Testing Laboratories used  
Type de programme du laboratoire d'essais  
constructeur

Model / Type Ref.  
Ref. De type

Additional information (if necessary may also be  
reported on page 2)  
Les informations complémentaires (si nécessaire,,  
peuvent être indiqués sur la 2<sup>ème</sup> page

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

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

Power Supply

XP POWER L L C  
SUITE 150 1241 E DYER RD SANTA ANA CA 92705  
UNITED STATES

XP POWER LTD  
401 COMMONWEALTH DR HAW PAR TECHNOCENTRE  
LOBBY B, #02-02 SINGAPORE 149598 SINGAPORE

ABES TECHNOLOGY CO LTD  
3 LANE 891, SEC 1 ZHANGSHUI RD XIUSHUI HSIANG  
CHANGHUA HSIEN 504  
TAIWAN

Additional Information on page 2

Input: 100-240 Vac, 2.5 A, 50/60 Hz  
Output: See Test Report for details



SMT

ECP180PSXX  
See Page 2

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

IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1

E317867-A83-CB-1 issued on 2013-10-30

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 Pflugsten 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](http://www.ul.com/ncbnames)

Date: 2013-10-30

Signature:

Jolanta M. Wroblewska



Ref. Certif. No.

**US-22416-UL**

**Model Details:**

ECP180PSXX , where XX can be any number between 12 and 48 designating the output voltage, may also be provided with suffix "SF" for removal of F2.

**Factories:**

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

**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](http://www.ul.com/ncbnames)

Date: 2013-10-30

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** .....: E317867-A83-CB-1

Date of issue .....: 2013-10-30

Total number of pages .....: 71

**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\_1C

Test Report Form originator .....: SGS Fimko Ltd


Master TRF .....: 2012-08




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**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.**

<b>Test item description</b> .....	Power Supply
Trade Mark .....	
Manufacturer .....	XP POWER LTD 401 COMMONWEALTH DR HAW PAR TECHNOCENTRE LOBBY B, #02-02 SINGAPORE 149598 SINGAPORE
Model/Type reference .....	ECP180PSXX, where XX can be any number between 12 and 48 designating the output voltage, may also be provided with suffix "SF" for removal of F2
Ratings .....	Input: 100-240 Vac, 2.5 A, 50/60 Hz Output: See Enclosure - Miscellaneous Ratings Table for details.

<b>Testing procedure and testing location:</b>	
<input type="checkbox"/> <b>CB Testing Laboratory</b>	Testing location / address..... :
<input type="checkbox"/> <b>Associated CB Test Laboratory</b>	Testing location / address..... :
	Tested by (name + signature) ..... : _____
	Approved by (name + signature) ... : _____
<input type="checkbox"/> <b>Testing Procedure: TMP</b>	Tested by (name + signature) ..... : _____
	Approved by (+ signature) ..... : _____
	Testing location / address..... :
<input type="checkbox"/> <b>Testing Procedure: WMT</b>	Tested by (name + signature) ..... : _____
	Witnessed by (+ signature)..... : _____
	Approved by (+ signature) ..... : _____
	Testing location / address..... :
<input checked="" type="checkbox"/> <b>Testing Procedure: SMT</b>	Tested by (name + signature) ..... : Chin Chee Siang 
	Approved by (+ signature) ..... : Tac Pham 
	Supervised by (+ signature) ..... : David E. Drewes 
	Testing location / address..... : XP Power, 401 Commonwealth Drive, Haw Par Technocentre, Lobby B, #02-02, Singapore 149598
<input type="checkbox"/> <b>Testing Procedure: RMT</b>	Tested by (name + signature) ..... : _____
	Approved by (+ signature) ..... : _____
	Supervised by (+ signature) ..... : _____
	Testing location / address..... :

<b>List of Attachments</b>	
National Differences (41 pages)	
Enclosures (99 pages)	
<b>Summary Of Testing</b>	
Unless otherwise indicated, all tests were conducted at XP Power, 401 Commonwealth Drive, Haw Par Technocentre, Lobby B, #02-02, Singapore 149598.	
<b>Tests performed (name of test and test clause)</b>	<b>Testing location / Comments</b>
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)  
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, 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

The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011

### 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.



00 01

<b>Test item particulars :</b>	
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) .....	2.5 A
Pollution degree (PD) .....	PD 2
IP protection class .....	IPX0
Altitude of operation (m) .....	5000
Altitude of test laboratory (m) .....	33
Mass of equipment (kg) .....	0.25
<b>Possible test case verdicts:</b>	
- 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)
<b>Testing:</b>	
Date(s) of receipt of test item .....	2013-07-01
Date(s) of Performance of tests .....	2013-08-26 to 2013-09-04
<b>General remarks:</b>	
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.	
<b>Manufacturer's Declaration per Sub Clause 6.2.5 of IEC 60950-1:</b>	
The application for obtaining a CB Test Certificate includes more than one factory 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 .....	
When differences exist, they shall be identified in the General Product Information section.	
<b>Name and address of Factory(ies):</b>	ABES TECHNOLOGY CO LTD 3 LANE 891, SEC 1 ZHANGSHUI RD XIUSHUI HSIANG

CHANGHUA HSIEN  
504 TAIWAN

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. Double insulated symbol is optionally provided. Earthing symbol may only be provided for Class I power supplies.

### Model Differences

All models in the Model ECP180PSXX series are identical with exception to the Mains Transformer, T1, and minor secondary components that allow for different output voltage ratings.

See below for Model Ratings Table for 50°C ambient with 10 cfm fan applied 5 cm from input connector CN1 blowing inward:

Model ECP180PS12: Output Rated: 12 Vdc, 15A  
Model ECP180PS15: Output Rated: 15 Vdc, 12A  
Model ECP180PS24: Output Rated: 24 Vdc, 7.5 A  
Model ECP180PS28: Output Rated: 28 Vdc, 6.43 A  
Model ECP180PS36: Output Rated: 36 Vdc, 5A  
Model ECP180PS48: Output Rated: 48 Vdc, 3.75A

See Enclosure 7-01 for additional ratings information.

### 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).

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

The nameplate markings provided are considered representative of the entire series.

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

**Technical Considerations**

- The product was submitted and evaluated for use at the maximum ambient temperature (T<sub>ma</sub>) permitted by the manufacturer's specification of: 50°C at 100% load, 70 °C at 50% 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 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 CY7
- 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-Earth: 241 Vrms, 343 Vpk, Primary-SELV: 250 Vrms, 388 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. The power supply will be considered Class II only when protection against electric shock does not rely on Basic Insulation and provides a minimum of 5 mm creepage and 4 mm clearance distance between Primary and SELV components (mounted above chassis/accessible metal parts on Insulating posts etc). Class II units have no reliance upon protective earthing.,
- 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 CN1
- The following magnetic devices (e.g. transformers or inductor) are provided with an OBJ2 insulation system with the indicated rating greater than Class A (105°C): TR1 (Class B, 130°C)
- The following end-product enclosures are required: Electrical, Mechanical, Fire
- The maximum continuous power supply output (Watts) relied on forced air cooling from: 10 cfm fan applied 5 cm from input connector CN1 blowing inward
- Printed Wiring Board rated 130°C. --
- The equipment is provided with a fuse in both the Line and Neutral of the primary circuit, unless provided with suffix "SF" to indicate only one fuse provided in the Line. --
- Touch Current test to be conducted in the end-product evaluation. --
- Clearance spacing evaluated for 5000 m altitude. Additional consideration maybe necessary in the

end-use product. --

- Units provided with fuses in the line and neutral shall be considered for the need for "Double Pole Fusing" warning markings as part of the end-product. --
- Unit was evaluated as a component for building-in, the need for markings and marking durability testing shall be determined as part of the end product. --
- Unit is rated 100-240 Vac with an output of 120W, however when conducting heating test at -10% tolerance (90 Vac) using convection cooling, the unit was loaded to 110W. Consideration for additional testing to be considered in 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)