



Test Report issued under
the responsibility of:



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

Report Reference No : E346017-A11-CB-1

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CB Testing Laboratory : UL International Demko A/S

Address : Borupvang 5A, 2750 Ballerup, Denmark

Applicant's name : XP POWER LTD

Address : 401 COMMONWEALTH DR
HAW PAR TECHNOCENTRE
LOBBY B, #02-02
SINGAPORE 149598 SINGAPORE

Test specification:

Standard : IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013

Test procedure : CB Scheme

Non-standard test method : N/A

Test Report Form No. : IEC60950_1F

Test Report Form originator : SGS Fimko Ltd

Master TRF : Dated 2014-02

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Test item description	Switching Brick Power Supply
Trade Mark	
Manufacturer	XP POWER L L C 15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780 UNITED STATES
Model/Type reference	ALM150PSXXYY-ZZ##V (where XX is any number between 12-48 designating output voltage and YY can be blank or "C2" designating Class II configuration, and ZZ can be blank or "-A", "-6", "-6A", "-8", "-8A" designating AC inlet type, and V can be any alphanumeric or blank designating casing colour) Models may have an additional ## identifier which can be any alphanumeric or blank designating marketing purpose only.
Ratings	Input Rated: 100-240 Vac, 50/60 Hz, 1.8 A Output Rated: ALM150PS12: 12 Vdc (10.1 - 13.5 Vdc), 12.5 A max., 150W max.; ALM150PS15: 15 Vdc (13.5 - 17.0 Vdc), 10 A max., 150W max.; ALM150PS19: 19 Vdc (17.1 - 21.0 Vdc), 7.9 A max., 150W max.; ALM150PS24: 24 Vdc (21.0 - 26.0 Vdc), 6.2 A max., 150W max.; ALM150PS48: 48 Vdc (42.1 - 54.0 Vdc), 3.1 A max., 150W max.

Testing procedure and testing location:	
<input type="checkbox"/>	CB Testing Laboratory Testing location / address:
<input type="checkbox"/>	Associated CB Test Laboratory Testing location / address: Tested by (name + signature): _____ Approved by (name + signature).....: _____
<input checked="" type="checkbox"/>	Testing Procedure: TMP/CTF Stage 1 Testing location / address: XP POWER LTD, 401 COMMONWEALTH DR, HAW PAR TECHNOCENTRE, LOBBY B, #02-02, SINGAPORE 149598 SINGAPORE Tested by (name + signature): Chai Ming Yuo, Project Handler <i>Ming Yuo</i> Approved by (name + signature).....: Jim Kao, Reviewer <i>Jim Kao</i>
<input type="checkbox"/>	Testing Procedure: WMT/CTF Stage 2 Testing location / address: Tested by (name + signature): _____ Witnessed by (name + signature) ...: _____ Approved by (name + signature).....: _____
<input type="checkbox"/>	Testing Procedure: SMT/CTF Stage 3 or 4 Testing location / address: Tested by (name + signature): _____ Approved by (name + signature).....: _____ Supervised by (name + signature) ..: _____
<input type="checkbox"/>	Testing Procedure: RMT Testing location / address: Tested by (name + signature): _____ Approved by (name + signature).....: _____ Supervised by (name + signature) ..: _____

List of Attachments	
National Differences (59 pages)	
Enclosures (71 pages)	
Summary Of Testing	
Unless otherwise indicated, all tests were conducted at XP POWER LTD, 401 COMMONWEALTH DR, HAW PAR TECHNOCENTRE, LOBBY B, #02-02, SINGAPORE 149598 SINGAPORE.	
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)
Durability of Marking (1.7.11)
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 II (2.6.3.4, 2.6.1)
Humidity (2.9.1, 2.9.2, 5.2.2)
Determination of Working Voltage; Working Voltage Measurement (2.10.2)
Transformer and Wire /Insulation Electric Strength (2.10.5.13)
Strain Relief (3.2.6, 4.2.1, 4.2.7)
Steady Force (4.2.1 - 4.2.4)
Impact (4.2.5, 4.2.1, Part 22 10.2)
Drop (4.2.6, 4.2.1)
Stress Relief (4.2.7, 4.2.1)
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)
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: AR, AT, AU, BE, BG, BY, CA, CH, CN, CS, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IL, IN, IT, JP, KR, MY, NL, NO, NZ, PL, PT, RO, SA, SE, SG, SI, SK, UA, US, ZA

The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013

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

Test item particulars :

Equipment mobility	transportable
Connection to the mains	pluggable A
Operating condition	continuous
Access location	operator accessible
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)	230
Class of equipment	Class I or Class II
Considered current rating of protective device as part of the building installation (A)	20
Pollution degree (PD)	PD 2
IP protection class	IP X0
Altitude of operation (m)	up to 5000
Altitude of test laboratory (m)	below to 2000
Mass of equipment (kg)	Approximately 0.6 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	2018-01-08
Date(s) of Performance of tests	2018-01-08 to 2018-03-28

General remarks:

"(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 4.2.5 of IEC 60950-1:

Yes

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.

Name and address of Factory(ies): XP POWER (KUNSHAN) LTD
 230 BIN JIANG NAN RD
 ZHANGPU TOWN
 KUNSHAN
 JIANGSU 215321 CHINA

XP POWER INC
990 BENECIA AVE
SUNNYVALE CA 94085
UNITED STATES

XP POWER (VIETNAM) CO LTD
LOT D - 4Q - CN
MY PHUOC 3 INDUSTRIAL PARK
BEN CAT DISTRICT
BINH DUONG VIETNAM

XP POWER PLC
HORESHOE PARK PANGBOURNE RG87 JW
UNITED KINGDOM

GENERAL PRODUCT INFORMATION:

Report Summary

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

Product Description

The devices are a series of isolating brick type power supplies to be used to power ITE equipment. Each model is comprised of electronic components mounted on a PWB and housed within a minimum V-1 thermoplastic enclosure.

Model Differences

All models within the series are identical with exception to power transformer (T1) winding and other minor changes to secondary circuit to accommodate different output voltages and current ratings. Models may have an additional YY identifier which can be blank or "C2" to designate a Class II configuration. Models may have an additional ZZ identifier which can be blank or "A", "6", "6A", "8", "8A" to designate the type of input connector:

- blank designates a C14 input connector (Class I construction) or C18 input connector (Class II construction);
- "A" designates a C14 input connector with optional IEC cable retention;
- "6" designates a C6 input connector;
- "6A" designates a C6 input connector with optional IEC cable retention;
- "8" designates a C8 input connector;
- "8A" designates a C8 input connector with optional IEC cable retention.

Models may have an additional ## identifier which can be any alphanumeric or blank designating marketing purposes only.

Models may have an additional V identifier which can be any alphanumeric or blank to represent the colour of the casing.

Output voltage rating indicated in '()' under "Ratings" represents voltage tolerance evaluated.

ALM150PS12: 12 Vdc (10.1 - 13.5 Vdc), 12.5 A max., 150W max.;
ALM150PS15: 15 Vdc (13.5 - 17.0 Vdc), 10 A max., 150W max.;
ALM150PS19: 19 Vdc (17.1 - 21.0 Vdc), 7.9 A max., 150W max.;
ALM150PS24: 24 Vdc (21.0 - 26.0 Vdc), 6.2 A max., 150W max.;

ALM150PS48: 48 Vdc (42.1 - 54.0 Vdc), 3.1 A max., 150W max.

Additional Information

Marking label is representative of all models. The nameplate labels included in this report depict the draft artwork for the marking plate pending approval by National Certification Bodies and it will not be affixed to products prior to such approval.

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 at 100% load; 60°C at 60% load.
- The means of connection to the mains supply is: Pluggable A, Detachable power cord
- The product is intended for use on the following power systems: IT or TN
- The equipment disconnect device is considered to be: Appliance inlet
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A12:2010 + A12:2011 + A2:2013 (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: Secondary side of C47 and C38 (Class I); Secondary side of C47, C38, C51 and C56 (Class II).
- The following were investigated as part of the protective earthing/bonding: Appliance inlet to output ground.
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- The equipment employs Functional Earthing per 2.6.2. As anticipated by the NOTE for 1.2.4, it does not conform to one of the common Classes (I, II, or III). The following insulation is provided between the primary and accessible dead metal parts and circuits: Double/Reinforced (configurations with a ground pin in the appliance inlet)
- According to IEC60664-1, Table A2, required Clearances have been adjusted by multiplying the clearance at sea level by a factor of 1.48 for operating at an altitude of 5000 meters. The correction factor is based on barometric pressure of 70kPa and Overvoltage Category II. If the calculated Clearance exceeded the Creepage, the Creepage was adjusted to the value of clearance. --

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)