



Test Report issued under
the responsibility of:



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

Report Reference No: E139109-A128-CB-2

Date of issue: 2015-07-27

Total number of pages: 9

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
15641 RED HILL AVE, SUITE 100

Address: TUSTIN CA 92780
UNITED STATES

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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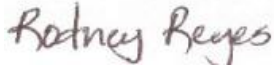


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Test item description	Power supply for building-in, switch mode type
Trade Mark	
Manufacturer	XP POWER L L C 15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780 UNITED STATES
Model/Type reference	GCS250PSxxyy (where xx can be any number between 12 and 56 and yy is "-C", "-TF", "-EF" or blank; all "-" considered optional; may also be provided with additional suffix "SF", "S" or "R")
Ratings	Input: 100-240 Vac, 50/60 Hz, 3A Output: See Model Differences for details

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 type="checkbox"/> Testing Procedure: TMP/CTF Stage 1	Testing location / address
	Tested by (name + signature)
	Approved by (name + signature).....
<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 checked="" type="checkbox"/> Testing Procedure: SMT/CTF Stage 3 or 4	Testing location / address: UL San Jose 455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
	Tested by (name + signature): Rodney Reyes 
	Approved by (name + signature).....: Tac Pham 
	Supervised by (name + signature) ..: Luis Martinez 
<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 (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, 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 + A2:2013

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

Test item particulars :

Equipment mobility	for building-in
Connection to the mains	To be determined in end-use product
Operating condition	continuous
Access location	To be determined in end-use product
Over voltage category (OVC)	OVC II
Mains supply tolerance (%) or absolute mains supply values	+10%, -10%
Tested for IT power systems	Yes
IT testing, phase-phase voltage (V)	230
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
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)	0.6 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	N/A
Date(s) of Performance of tests	N/A

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 INC
 990 BENECIA AVE
 SUNNYVALE CA 94085-2804
 UNITED STATES

 XP POWER (KUNSHAN) LTD

230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN
JIANGSU 215321 CHINA

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

XP POWER PLC
HORESHOE PARK
PANGBOURNE
RG87 JW UNITED KINGDOM

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2015-10-14 to include the following changes/additions:

Amendment:

-Revised Model suffixes to replace "L" with "R".

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 GCS250PSXX series are identical with exception to the Mains Transformer, T1, shape of Heatsink (SEC) and secondary components/circuitry that allow for different output voltage ratings. See below for minor variations within the series.

Models GCS250PS12 to GCS250PS15 are identical to models GCS250PS18 to GCS250PS56 except for secondary output circuitry and secondary heatsink.

Models GCS250PS18 to GCS250PS36 are identical to models GCS250PS48 to GCS250PS56 except for secondary heatsink.

See below for Model Ratings:

Model GCS250PS12: Output Rated: 10.1 Vdc - 13.5 Vdc, 18.7 A Max., 225 W Max.

Model GCS250PS15: Output Rated: 13.6 Vdc - 17 Vdc, 15 A Max., 225 W Max.

Model GCS250PS18: Output Rated: 17.1 Vdc - 21 Vdc, 13.9 A Max, 250 W Max.

Model GCS250PS24: Output Rated: 21.1 Vdc - 26 Vdc, 10.4 A Max., 250 W Max.

Model GCS250PS28: Output Rated: 26.1 Vdc - 31 Vdc, 8.9 A Max., 250 W Max.

Model GCS250PS33: Output Rated: 31.1 Vdc - 33 Vdc, 7.6 A Max., 250 W Max.

Model GCS250PS36: Output Rated: 33.1 Vdc - 42 Vdc, 6.9 A Max, 250 W Max.

Model GCS250PS48: Output Rated: 42.1 Vdc - 54 Vdc, 5.2 A Max., 250 W Max.

Model GCS250PS56: Output Rated: 54.1 Vdc - 63.2 Vdc, 4.5 A Max., 250 W Max.

Units provided with suffix "C" is provided with cover.
Units provided with suffix "TF" is provided with top fan.
Units provided with suffix "EF" is provided with end fan.
Units provided without suffix "C", "TF" or "EF" is open frame (without cover).
Units provided with additional suffix "SF" to indicate single pole fusing.
Units provided with additional suffix "S" to indicate screw terminal block.
Units provided with suffix "R" is remote inhibit.

See Enclosure - Miscellaneous for max Power Outputs based on model, ambient, and forced air cooling.

Additional Information

This report is a reissue of CBTR Ref. No. E139109-A128-CB-1, CB Test Certificate Ref. No. US-22655-UL and US-22655-A1-UL. Based on the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, only limited testing was deemed necessary and has been determined that the product complies with the upgrade of the Second Edition of the Standard to Amendment 2.

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

Licenses older than 3 years to be provided by the manufacturer upon request.

Marking label is representative of all models.

Accepting NCB may request original Electric strength test data (see sub-clause 2.10.5.7) on 3M Corp type 1350F insulating tape.

Technical Considerations

- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 (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. See Conditions of Acceptability for insulation required for Class II. Earthing symbol may only be provided for Class I power supplies. --
- The product is intended for use on the following power systems: TN IT --
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: Load side of C21 (Pri to Sec bridging capacitor) --
- The means of connection to the mains supply is: for building-in, to be determined in the end product. --
- The product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of: 50°C at 100% of Output Rating, 70°C at 50% of Output Rating. See Miscellaneous enclosure Power Output Table for additional information regarding power output and the various configurations. --

- 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. --

Engineering Conditions of Acceptability

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

- Printed Wiring Board rated 130°C. --
- Heatsinks are floating and considered live. They should not be accessible in the end-product. --
- Touch Current test to be conducted in the end-product evaluation. --
- End product to determine the need for "Double Pole Fuse" Marking for units provided with double , pole fusing. --
- The equipment may be provided with a fuse in both the Line and Neutral of the primary circuit. --
- Heating test should be repeated in the end-use product --
- Heating test was not conducted on unit with input/output leads. If unit is provided with input and/or output leads, then temperature on leads must be measured and cannot exceed 105°C. --
- 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: 240 Vrms, 340 Vpk, Primary-SELV: 256 Vrms, 320 Vpk, --
- The following secondary output circuits are SELV: All outputs, except model GCS250PS56 --
- The following secondary output circuits are at 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. --
- 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: J1 --
- 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): L1, L4 and T1 (Class F, 155°C) , --
- The following end-product enclosures are required: Mechanical, Fire, Electrical --
- The following components require special consideration during end-product Thermal (Heating) tests due to the indicated maximum temperature measurements during component-level testing: Model GCS250PS12: T1 coil (127°C) --
- The maximum continuous power supply output (Watts) relied on forced air cooling from: 7 cfm fan applied 1 inch from input side, blowing inward., --
- The equipment is suitable for direct connection to: AC mains supply. Means of connection will need to be evaluated in the end product. --
- Fans: For models with the suffix "EF", the fan provided in this sub-assembly is not intended for operator access., For models with the suffix "TF", the fan provided in this sub-assembly is provided with a fan guard to reduce the risk of operator contact with the stator. --

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)