

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2014-10-14 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Listing
CCN:	QQGQ, QQGQ7 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Complementary CCN:	QQJQ, QQJQ7 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
Product:	Power supply, switch mode type
Model:	AHM180PSXXYY-ZW##V Where XX is any number between 12-48, YY can be blank or C2, Z can be blank or A, W can be blank, 6, or 8, # can be blank or any alphanumeric character, and V can be blank or any alphanumeric character, may be provided with or without "-".
Rating:	Input: 100 - 240V ac 2.2A, 50/60Hz Output at 40°C (100% load): Model AHM180PS12: 12 Vdc, 13.75 A (180W max) Model AHM180PS15: 15 Vdc, 12 A (180W max) Model AHM180PS19: 19 Vdc, 9.47 A (180W max) Model AHM180PS24: 24 Vdc, 7.5 A (180W max) Model AHM180PS48: 48 Vdc, 3.75 A (180W max) All outputs are de-rated to 40% load at 60°C.
Applicant Name and Address:	XP POWER L L C 15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780 UNITED STATES

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

Issue Date: 2011-01-28
2018-08-28

Page 2 of 18

Report Reference #

E139109-A48-UL

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared by: Patrick Lan / Project Handler

Reviewed by: Gregory Ray / Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

- A. Authorization - The Authorization page may include additional Factory Identification Code markings.
- B. Generic Inspection Instructions -
 - i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
 - ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
 - iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

The models covered in this report are Class I or Class II power supplies intended for use with Information Technology Equipment. They are enclosed power supplies housed within a thermoplastic enclosure. The units connect to mains via a detachable power supply cord and grounded appliance inlet. The output is through a PVC jacketed output cord terminating in a molded-on polarized connector.

Model Differences

All models in the Model AHM180PSXXYY-ZZ Series are identical with exception of the Main Transformer, T1, and minor secondary components changes that allow for different output voltage ratings. See below for Models and Ratings for 40°C ambient.

Model AHM180PS12: Output Rated: 12 Vdc, 13.75 A
Model AHM180PS15: Output Rated: 15 Vdc, 12 A
Model AHM180PS19: Output Rated: 19 Vdc, 9.47 A
Model AHM180PS24: Output Rated: 24 Vdc, 7.5 A
Model AHM180PS48: Output Rated: 48 Vdc, 3.75 A

See Enclosure 7-01 for details.

Models may have an additional -ZZ identifier which can be "-A", "-6", "-6A", "-8", "-8A", or blank to designate the type of input connector:

blank = C14 style input connector (Class I construction);
"-A" = C14 style input connector with optional IEC cable retention;
"-6" = C6 style input connector (Class I);
"-6A" = C6 style input connector with optional IEC cable retention;
"-8" = C8 style input connector (Class II)

Models may have an additional YY identifier which can be blank or "C2". Units designate "C2" have a Class II configuration.

Technical Considerations

- Equipment mobility : movable
- 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 : Yes
- IT testing, phase-phase voltage (V) : 230
- Class of equipment : Class I (earthed) and Class II (double insulated)
- 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) : 0.62
- 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).
- The following were investigated as part of the protective earthing/bonding: Output Connector Body
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40°C full load. De-rated to 60% load at 60°C
- The product is intended for use on the following power systems: IT TN
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: Load side of CY3 (Pri to Sec bridging capacitor)
- The means of connection to the mains supply is: Detachable power cord Pluggable A
- The equipment disconnect device is considered to be: Appliance inlet
- 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)
- LEDs provided in the product are considered low power devices: Yes
- 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.

Additional Information

This Report is a reissue of CBTR Ref. No.: E139109-A48-CB-3 (CB Test Certificate Ref. No.US-25925-UL and US-25925-M1-UL). All required tests were repeated as part of this reissue.

Technical Amendment (CB-4-Amendment-1): Revised Type of Zhe Jiang AC Inlet to ST-A03-005 and added alternate AC Inlet for Class II, C18 type, Rong Feng, Type SS-120A.

The Protective Earthing connections at the output cable connector body of the Component Power Supply

Model AHM180 Series were evaluated as part of this investigation under the CBTL test option.

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 attached Marking Plate label is considered to be 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 Amendment (CB-4-Amendment-2):

- The manufacturer submitted representative production samples of these models for construction review and testing. Testing was performed to re-evaluate output wire temperatures. Testing was performed for compliance to IEC 62368-1:2014 (Second Edition). The Evaluation and testing were considered representative of the requirements of IEC 60950-1:2005 (Second Edition), Am1:2009 + Am2:2013.
- Clause 2.4.2 was corrected from '70 mA' to '0.7 mA'.
- Touch current measurement table conditions were corrected from 'e=1' to 'e=0'.
- Clause 5.1.6 was corrected from '0.034' to '(See appended Table 5.1)'.

Technical Amendment (CB-4-Amendment-3):

- Models and ratings sections were updated for clarity.
- Added VDE licenses to T1 in Table 1.5.1.
- The manufacturer submitted representative production samples of these models for construction review and testing. Evaluation and testing were performed for compliance to UL 62368-1 Edition 2 and CSA C22.2 NO. 62368-1-14 - Edition 2. Evaluation specifics can be found under CBTR E139109-A6012-CB-1.

Additional Standards

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

Markings and instructions

Clause Title	Marking or Instruction Details
1.7.1 Power rating - Ratings	Ratings (voltage, frequency/dc, current)
1.7.1 Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
1.7.1 Power rating - Model	Model Number
1.7.1 Power rating - Class II symbol	Symbol for Class II construction
1.7.6 Fuses - Non-operator access/soldered-in fuses	Unambiguous reference to service documentation for instructions for replacement of fuses replaceable only by service personnel

1.7.2 Disconnect device - Pluggable equipment	Statement indicating that the socket-outlet shall be installed near the equipment and shall be easily accessible. (Instruction)
2.7.6 Warning to service personnel	"CAUTION: Double pole/neutral fusing"
Special Instructions to UL Representative Only units provided with suffix "C2" provided with Class II marking.	

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
All	Transformer, T1	--	Primary to Secondary	300 0 Vac	4242 Vdc	1 s

Earthing Continuity Test Exemptions - This test is not required for the following models:

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Electric Strength Test Exemptions - This test is not required for the following models:

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Electric Strength Test Component Exemptions - The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:

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Sample and Test Specifics for Follow-Up Tests at UL

Model	Component	Material	Test	Sample(s)	Test Specifics
N/A					