

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2011-12-19 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Component Recognition
CCN:	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Product:	Power supply for building-in, switch mode type
Model:	POE100US56
Rating:	Input: 100-240 Vac, 50/60 Hz, 2.2 A. Output: 56 Vdc, 1.78 A, 100 W Max with forced air cooling
Applicant Name and Address:	XP POWER LLC SUITE 150 1241 E DYER RD SANTA ANA CA 92705 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.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

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

Prepared by: Jason Ferguson

Reviewed by: Randy Johnson

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

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

When installed in a Class I end product, the power supply shall be mounted in a manner that provides, at a minimum, 2 mm Clearance between the primary side of 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, on insulating posts, in a manner that provides, at a minimum, 4 mm Clearance between the power supply and any accessible conductive parts.

Model Differences

N/A

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : for building-in
- 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) : 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) : 20 A

- Pollution degree (PD) : PD 2
- IP protection class : IPX0
- Altitude of operation (m) : Up to 3048 m
- Altitude of test laboratory (m) : less than 2000 meters
- Mass of equipment (kg) : 0.17 kg
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50 °C at 80W convection cooled; maximum ambient temperature of 50 °C at Maximum load (100W) with 10CFM forced air cooled; and for a maximum ambient temperature of 70°C at Half load (50W) with 10CFM forced air cooled.,
- The means of connection to the mains supply is: for building-in
- The product is intended for use on the following power systems: TN
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: Load side of C17 (Pri to Sec bridging capacitor)
- 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

For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. 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-SELV: 201 Vrms, 462 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 when protection against electric shock does not rely on Basic Insulation only, unit provides additional safety precautions such as Double/Reinforced Insulation and provide minimum of 5 mm creepage and 4 mm clearance distance (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: ACN J1-3
- 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): L1, L2 and T1 (Class F)
- The following end-product enclosures are required: Electrical, Fire
- The maximum continuous power supply output (Watts) relied on forced air cooling from: 50 W and 100 W with external 10 cfm fan applied to the front of the power supply, 5cm from the AC input connector. Maximum 80 W convection cooling.
- The equipment is suitable for direct connection to: AC mains supply

- Printed Wiring Board rated 130°C.
- The equipment is provided with a fuse in the hot line of the primary circuit.
- Heatsinks are floating and considered live. They should not be accessible in the end-product.
- Consideration to repeating the Touch Current test should be given in the end-product evaluation.

Additional Information

Only limited tests were performed on model POE100US56 because of similarity in construction to previous model ECM80US56.

This report is a reissue of CBTR Ref. No.E139109-A22-CB-1, CB Test Certificate Ref. Nos.US/13315/UL. Based on previously conducted testing and the review of product construction it was determined that the product continues to comply with the standard.

Some of the attached Critical Component Licenses/Certs may be more than 3 years old. Manufacturer to provide updated licenses upon request from an accepting NCB.

The Critical Components Table includes components in the product as submitted and also includes, in certain cases, alternate generic descriptions (designated as "interchangeable") for equivalent component substitutions. Recognizing NCBs may require additional information and/or evaluation to qualify alternate components.

User's Manuals, instructions and markings will be provided in the national language of the country of sale. The manufacturer is aware of the requirements for language requirements for markings/instructions, cords/cables, plugs and EMC. Detailed information may be obtained directly from the client. See Enclosure-Miscellaneous for a Letter of Assurance.

Markings and instructions

Clause Title	Marking or Instruction Details
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Fuses - Non-operator access/soldered-in fuses	Unambiguous reference to service documentation for instructions for replacement of fuses replaceable only by service personnel
1.7.7.2 Terminals for external primary power supply conductors	Capital letter "N" located adjacent to a terminal intended exclusively for connection of the primary power neutral conductor

Special Instructions to UL Representative

N/A