CERTIFICATE OF COMPLIANCE

Certificate Number	20180524-E139109
Report Reference	E139109-A6017-UL
Issue Date	2018-MAY-24

Issued to: XP POWER L L C

15641 RED HILL AVE, SUITE 100
TUSTIN CA 92780

This is to certify that representative samples of

COMPONENT - POWER SUPPLIES FOR USE WITH AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT; COMPONENT - POWER SUPPLIES, INFORMATION TECHNOLOGY EQUIPMENT INCLUDING ELECTRICAL BUSINESS EQUIPMENT

For Models Refer Addendum Page

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: For Standards Refer Addendum Page

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

The UL Recognized Component Mark generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: , may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

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This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Models;

Switching Power Supply - FCS40USXX Series, where XX can be any number 12 to 48 designating the output voltage, may also be followed by suffix "SF", "S", "-" or blank.

Standards;

UL 62368-1 - Audio/video, information and communication technology equipment Part 1: Safety requirements
CAN/CSA C22.2 No. 62368-1-14 - Audio/video, information and communication technology equipment Part 1: Safety requirements

Bruce Mahrenholz, Director North American Certification Program

UL LLC

UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1-14, 2nd Ed (Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Component Recognition
CCN:	QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
Complementary CCN:	QQGQ2, QQGQ8(Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Product:	Switching Power Supply
Model:	FCS40USXX Series, where XX can be any number 12 to 48 designating the output voltage, may also be followed by suffix "SF", "S", "-" or blank.
Rating:	Input: 100-240 Vac, 50/60 Hz, 1.2A Max. Output: See Model Differences for details.
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.

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: Robert Leon / Project Handler Reviewed By: Walid Beytoughan / 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 model covered in this report is a component AC - DC power supply intended for use in Audio/video, information and communication technology equipment. It is intended for building-in to Class I or Class II equipment.

Model Differences

All models in the FCS40USXX series are identical with exception to model designation, Transformer (TX1) and secondary components/circuitry that allow for different output voltage ratings.

Model output ratings as follows.

Model FCS40US12: Output Rated: 10.1 Vdc - 13.5 Vdc, 3.34 A Max., 40 W Max.

Model FCS40US15: Output Rated: 13.6 Vdc - 17 Vdc, 2.67 A Max., 40 W Max.

Model FCS40US18: Output Rated: 17.1 Vdc - 21 Vdc, 2.23 A Max, 40 W Max.

Model FCS40US24: Output Rated: 21.1 Vdc - 26 Vdc, 1.67 A Max., 40 W Max.

Model FCS40US28: Output Rated: 26.1 Vdc - 31 Vdc, 1.43 A Max., 40 W Max.

Model FCS40US36: Output Rated: 33.1 Vdc - 42 Vdc, 1.11 A Max, 40 W Max.

Model FCS40US48: Output Rated: 42.1 Vdc - 54 Vdc, 0.83 A Max., 40 W Max.

Test Item Particulars

Classification of use by:	Skilled Person
Supply Connection:	AC Mains
Supply % Tolerance:	+10%/-10%
Supply Connection – Type:	Other : For building-in
Considered current rating of protective device as part of building or equipment installation:	20 A; Installation location: building
Equipment mobility:	for building-in
Over voltage category (OVC):	OVC II

Class of equipment:	Not classified
Access Location:	N/A
Pollution degree (PD):	PD 2
Manufacturer's specified maximum operating ambient:	50°C at full rated load. 70°C at 50% rated load.
IP protection class:	IPX0
Power Systems:	TN
Altitude during operation (m):	5000 m
Altitude of test laboratory (m):	17 m
Mass of equipment (kg):	0.10 kg

Technical Considerations

- The product is intended for use on the following power systems : TN
- Considered current rating of protective device as part of the building installation (A) : 20
- Mains supply tolerance (%) or absolute mains supply values : +10%/-10%
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS):
  : 12Vdc, 15Vdc, 18Vdc, 24Vdc, 28Vdc, 36Vdc and 48Vdc
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 50°C at full rated load. 70°C at 50% rated load.
- The power supply series covered by this report employ Double/Reinforced Insulation between Primary and Secondary circuits. Additionally evaluated for Basic Insulation between Line and Neutral up to and across the fuse (F1) per internal requirements of XP Power engineering specifications.
- 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).

Engineer 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 end-product Electric Strength Test is to be based upon a maximum working voltage of : Primary-SELV: 250 Vrms / 412 Vpk, Primary-Earthed Dead Metal: 240 Vrms / 340 Vpk
- The following output circuits are at ES1 energy levels : 12Vdc, 15Vdc, 18Vdc, 24Vdc, 28Vdc, 36Vdc and 48Vdc
- The following output circuits are at PS2 energy levels : All Outputs
- 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 except when installed in Class II equipment.
- The following input terminals/connectors must be connected to the end-product supply neutral:
  : CON1
- The following end-product enclosures are required:
  : Electrical, Fire, Mechanical
- 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):
  : Transformer TX1 (Class F, 155)
- The power supply was evaluated to be used at altitudes up to:
  : 5000 m
- The following product-line tests are conducted for this product : Electric Strength
- The power supply is provided with a fuse in both the line and neutral of the primary circuit. The need for a marking warning service person of the hazards associated with neutral fusing shall be considered in the end-product.
- Heating (Thermal Requirements) Test was not conducted on power supply with input/output leads. If power supply is provided with input and/or output leads, then temperature on leads must be measured and cannot exceed 105°C.

Additional Information

The switching power supply series covered by this Test Report used Double/Reinforced Insulation between Primary and Secondary circuits.

This report references component licenses documentation or certificates that are older than 3 years or issued to previous IEC/EN Standard editions. It has been determined that all critical components comply with current safety requirements. Receiving NCB may request additional information. Acceptance of these licenses, certificates or relevant documentation is at the discretion of the Receiving NCB.

Additional Standards

The product fulfills the requirements of: EN 62368-1:2014 + A11:2017, UL 62368-1 2ND Ed, Issued December 1, 2014, CSA CAN/CSA-C22.2 NO. 62368-1 2nd Ed, Issued December 1, 2014

Markings and Instructions

Clause Title	Marking or Instruction Details
F.3.2.1 Equipment identification marking – Manufacturer identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
F.3.2.2 Equipment identification marking – model identification	Model Number

F.3.3 Equipment rating marking – ratings	"Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"
F.3.5.3 Fuses – replaceable by skilled person	FS1 and FS2, Ratings "3,15A, 250V", located on or adjacent to fuse or fuseholder or in service manual.
DVK, F.3.5.3 Warning to service personnel	"CAUTION: Double pole, neutral fusing. Disconnect mains before servicing. "/"ATTENTION. Double pôle/fusible sur le neutre. Débrancher l'alimentation avant l'entretien."
Special Instructions to UL Representative N/A	