

# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20181018-E139109  
**Report Reference** E139109-A6026-UL  
**Issue Date** 2018-OCTOBER-18

**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


See next page for models

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

**Standard(s) for Safety:** See next page for Standards

**Additional Information:** See the UL Online Certifications Directory at  
[www.ul.com/database](http://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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contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



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**Certificate Number** 20181018-E139109  
**Report Reference** E139109-A6026-UL  
**Issue Date** 2018-OCTOBER-18

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

Switching Power Supply, model ECS100USxx-By (where xx can be any number between 12 and 48 designating the output voltage, y can be blank, SF or C). Models with SF designate single fuse option and models with suffix C are provided with a cover for Class I use only.

**Standard(s) for Safety:** UL 62368-1 & 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

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## UL TEST REPORT AND PROCEDURE

<b>Standard:</b>	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)
<b>Certification Type:</b>	Component Recognition
<b>CCN:</b>	QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
<b>Complementary CCN:</b>	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
<b>Product:</b>	Switching Power Supply ECS100USxx-By (where xx can be any number between 12 and 48 designating the output voltage, y can be blank, SF or C). Models with SF designate single fuse option and models with suffix C are provided with a cover for Class I use only.
<b>Model:</b>	Input: 100-240VAC, 1.9A, 50/60 Hz
<b>Rating:</b>	Output: See Enclosure - Miscellaneous: Ratings Table for details.
<b>Applicant Name and Address:</b>	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: Curtis Butler/Handler / 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 power supply intended for use in Audio/video, information and communication technology equipment. It is an open frame power supply intended for building-in Class I or Class II end-products.

**Model Differences**

All models in the Model ECS100USxx-By series are identical with exception to the Mains Transformer (T1) and minor secondary components that allow for different output voltage ratings. See Enclosure-Miscellaneous for additional details.

Suffix y = "SF" indicates single fuse provided in the line side of the primary.

Suffix y = "C" denotes units provided with a cover for Class I use only.

See below for Model Output Ratings Table for 50°C ambient:

- Model ECS100US12: Output Rated: 10.1 to 13.5 Vdc, 8.3 A max. (100 W max.)
- Model ECS100US15: Output Rated: 13.6 to 17 Vdc, 6.7 A max. (100 W max.)
- Model ECS100US18: Output Rated: 17.1 to 21 Vdc, 5.5 A max. (100 W max.)
- Model ECS100US24: Output Rated: 21.1 to 26 Vdc, 4.2 A max. (100 W max.)
- Model ECS100US28: Output Rated: 26.1 to 31 Vdc, 3.6 A max. (100 W max.)
- Model ECS100US33: Output Rated: 31.1 to 33 Vdc, 3.0 A max. (100 W max.)
- Model ECS100US36: Output Rated: 33.1 to 42 Vdc, 2.8 A max. (100 W max.)
- Model ECS100US48: Output Rated: 42.1 to 54 Vdc, 2.1 A max. (100 W max.)

**Test Item Particulars**

Classification of use by:

Ordinary Person

Supply Connection:	AC Mains
Supply % Tolerance:	Other: +6% / -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 for 100% load at forced air cooling condition; 80% load at convection cooling condition; 70°C for 50% load at forced air cooling condition; and 40% load at convection cooling (See Enclosure-Miscellaneous: Derating Curve for additional details)
IP protection class:	IPX0
Power Systems:	TN
Altitude during operation (m):	3048 m
Altitude of test laboratory (m):	180 m
Mass of equipment (kg):	0.341 kg

#### Technical Considerations

- The product is intended for use on the following power systems : TN
- The equipment disconnect device is considered to be:  
: N/A - To be provided as an element of the end product.
- The product was submitted and evaluated for use at the maximum ambient temperature (T<sub>ma</sub>) permitted by the manufacturer's specification of : 50°C for 100% load at forced air cooling condition; 80% load at convection cooling condition; 70°C for 50% load at forced air cooling condition and 40% load at convection cooling condition.
- The power supply series covered by this report employ Double/Reinforced Insulation between Primary and Secondary circuits.
- Power supplies covered by this report were evaluated for Class I. Earthing symbol to be provided.
- The unit has two cooling condition: 1) External Forced Air Cooling: 10CFM air flow, 2.75 inch distance from Fan to input side of the unit with inward air-flow direction; 2) Convection cooling in metal enclosure. The maximum continuous power supply output (Watts) relies on forced air cooling.
- The clearance distances have additionally been assessed for suitability up to 3048 m elevation (1.15 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 following output circuits are at ES1 energy levels : All DC Outputs
- The following end-product enclosures are required:
  - : Mechanical
  - Fire
- The following input terminals/connectors must be connected to the end-product supply neutral:
  - : ACN J1
- 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, L3 (155°C) and T1 (Class F, 155°C)
- The maximum investigated branch circuit rating is:
  - : 20 A
- The investigated Pollution Degree is:
  - : 2
- The following output circuits are at PS3 energy levels : All DC Outputs
- Proper bonding to the end-product main protective earthing termination is:
  - : Required
- An investigation of the protective bonding terminals has:
  - : not been conducted
- The following product-line tests are conducted for this product : Electric Strength
- Capacitance Discharge - Safeguards against capacitor discharge after disconnection of a connector (clause 5.5.2.2) shall be evaluated in the end-product. Bleeding resistors provided are certified to G.10.1 and G.10.2.
- Prospective Touch Current and Voltage testing to be conducted in the end-product evaluation.
- When installed in a Class I end product, the power supply shall be mounted in a manner that provides, at a minimum, 2.3 mm Clearance between the primary side of power supply and protectively earthed accessible conductive parts.

**Additional Information**

Limited tests were conducted under this investigation based on testing previously conducted under CBTR Ref. No. E139109-A89-CB, CB Test Certificate Ref. Nos. US-25001-UL to IEC 60950-1:2005 (Second Edition), Am1:2009 + Am2:2013. Only the following tests were considered necessary due to evaluation to IEC 62368-1, 2nd Ed: Electric Strength Test (15.4.9) and Prospective Touch Voltage and Touch Current Measurement (5.7). All other required tests were carried out under the previous investigation except where specifically noted.

The nameplate markings provided are considered representative of the entire series and only the output ratings may vary.

This report references component licenses documentation or certificates that are older than 3 years or issued to previous IEC/EN Standard editions. It has being 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 + AC:2017

**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)"
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."
<b>Special Instructions to UL Representative</b>	