CERTIFICATE OF COMPLIANCE

Certificate Number	20190727-E139109
Report Reference	E139109-A6035-UL
Issue Date	2019-JULY-27

Issued to: XP POWER L L C
15641 RED HILL AVE, SUITE 100
TUSTIN CA 92780

This certificate confirms 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 Addendum Page

Have been investigated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.

Standard(s) for Safety: UL 62368-1 & CSA C22.2 No. 62368-1-14, Audio/video, information and communication technology equipment Part 1: Safety requirements.

Additional Information: See the UL Online Certifications Directory at https://iq.ulprospector.com for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Recognized Component Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at http://ul.com/aboutul/locations/

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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.

DC/DC Converters:

C Series: Models C01, C02, C02N, C03, C05, C05N, C06, C06N, C10, C10N, C12, C12N, E10611, C15, C15N, C20, C20N, C25, C25N, C30, C30N, C40, C40N, C50, C50N, C60, C60N, C80, C80N.

CA Series: Models CA02P, CA02N, CA02P-5, CA02N-5, CA05P, CA05N, CA05P-5, CA05N-5, CA10P, CA10N, CA10P-5, CA10N-5, CA12P, CA12N, CA12P-5, CA12N-5, CA20P, CA20N, CA20P-5, CA20N-5.

All models may be followed by suffix "R" and/or “-XXXXXXXX” where X is blank or any alphanumeric character

Bruce Mahrenholz, Director North American Certification Program

UL LLC

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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:	DC/DC Converters
Model:	C Series: Models C01, C02, C02N, C03, C05, C05N, C06, C06N, C10, C10N, C12, C12N, E10611, C15, C15N, C20, C20N, C25, C25N, C30, C30N, C40, C40N, C50, C50N, C60, C60N, C80, C80N. CA Series: Models CA02P, CA02N, CA02P-5, CA02N-5, CA05P, CA05N, CA05P-5, CA05N-5, CA10P, CA10N, CA10P-5, CA10N-5, CA12P, CA12N, CA12P-5, CA12N-5, CA20P, CA20N, CA20P-5, CA20N-5. All models may be followed by suffix "R" and/or “-XXXXXXXX” where X is blank or any alphanumeric character.
Rating:	C Series and E10611: Input 11.6 - 16Vdc, 0.25 A. CA Series: 1. Models with prefix CA02-CA12; Input 11.6 - 16Vdc, 0.220 A or 5 Vdc, 0.420 A 2. Models with prefix CA20; Input 11.6 - 16Vdc, 0.220 A or 5 Vdc, 0.550 A See Enclosure - Miscellaneous 7-01 and 7-02 for current ratings of each model. Ratings Optional.
Applicant Name and Address:	XP POWER L L C 15641 RED HILL AVE, SUITE 100

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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: Adam Tangocci / Project Handler Reviewed By: Gregory Ray / Reviewer

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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 units are DC to HV DC converters having only functional insulation between input and output circuits.

Model Differences

Models differ in output ratings based on different transformer turns ratios and case size. See Enclosure - Miscellaneous, Model Ratings, for output rating differences.

Model E10611 is identical to model C12N except for model no.

The optional suffix "R" indicates model compliance with EU RoHS requirements.

The optional suffix “-XXXXXXXX” is used for marketing purposes only.

Test Item Particulars

Classification of use by	Skilled person
Supply Connection	External Circuit - not Mains connected ES1
Supply % Tolerance	None
Supply Connection – Type	For building-in
Considered current rating of protective device as part of building or equipment installation	20 A; building;
Equipment mobility	for building-in
Over voltage category (OVC)	other: N/A for Building-In
Class of equipment	Not classified
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer’s specified maximum operating ambient	60°C for C series, E10611 and 50°C for CA series
IP protection class	IPX0
Power Systems	
Altitude during operation (m)	2000 m or less

Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	0.0368 - 0.0566

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 60°C for C series, E10611 and 50°C for CA series
- The product is intended for use on the following power systems : No direct connection
- The equipment disconnect device is considered to be : N/A - To be provided as an element of the end product.
- • The power supply output circuits were declared to be not accessible when installed in the end use product.

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 output circuits are at ES3 energy levels : All Outputs.
- The following output circuits are at PS3 energy levels : Manufacturer declares all outputs as PS3 circuits.
- 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 : Not required
- The following end-product enclosures are required : Electrical, Fire
- Heating test should be repeated in the end-use product.
- When installed in the end product the center position on top of the metal case should be measured and temperatures should not exceed 70°C.
- When installed in the end product the case should be connected to protective bonding or provided with a warning symbol for high voltage as only Functional insulation is provided between the metal case and the hazardous voltage secondary circuit.
- Power supply shall not be directly connected to primary power and shall derive its power from a safety isolating transformer whose secondary circuit is double/reinforced insulated from the mains or derive its power from batteries.
- Power Systems shall be evaluated in end system.
- The power supply outputs are not intended to be accessible to the user when installed in the end use product. Further evaluation may be necessary if its determined that the output circuits are accessible in the final installation.

Additional Information

No tests were conducted under this investigation based on testing previously conducted under CBTR Ref. No. E139109-A161-CB, CB Test Certificate Ref. No. US-27573-UL to IEC 60950-1:2005 (Second Edition), Am1:2009 + Am2:2013. All 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.

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

Technical Amendment:
Added new model E10611 which is identical to model C12N.

This is a technical amendment. Based on a review of product technical documentation such as photos, schematics, and wiring diagrams, changes associated with this report are considered not to affect compliance with the requirements of the standard. Because of this and previously performed testing, no sample or additional testing was considered necessary. Changes and notes:
-Models: Formatting changes made for clarity.
-Models: Added statement regarding optional suffix "-XXXXXXXX" for all models.
-Model Differences: Added statement regarding optional suffix "-XXXXXXXX" for all models.

Additional Standards

The product fulfills the requirements of: EN 62368-1:2014 + A11:2017

Markings and Instructions

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listees or Recognized companys name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number
F.3.3. Equipment rating marking	Optional. "Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"

Special Instructions to UL Representative

N/A

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	**Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.**					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
-	-	--	-	-	-	-
BD1.2	**Earthing Continuity Test Exemptions – This test is not required for the following models:**					
	All Models					
BD1.3	**Electric Strength Test Exemptions – This test is not required for the following models:**					
	All Models					
BD1.4	**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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BE1.0	Sample and Test Specifics for Follow-Up Tests at UL				
Model	Component	Material	Test	Sample (s)	Test Specifics