

# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20181207-E139109  
**Report Reference** E139109-A6058-UL  
**Issue Date** 2018-DECEMBER-07

**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, INFORMATION  
TECHNOLOGY EQUIPMENT INCLUDING ELECTRICAL  
BUSINESS EQUIPMENT

“See Addendum Page for Models

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 & CAN/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 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

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contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



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**Report Reference** E139109-A6058-UL  
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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.

Product: Switching Power Supply

Model: P3-MMMM-FFF-OO , P4-MMMM-FFF-OO , P5-MMMM-FFF-OO

Where M can be a combination of a letter R to U and a number 1-10, F, G, or Z;  
where F can be a combination of the letter E, F or T and any number 0-9 or blank;  
where O can be any number 0-9 or blank designating parallel option. Dashes are optional in model designation.



Bruce Mahrenholz, Director North American Certification Program  
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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>	N/A
<b>Product:</b>	Switching Power Supply
<b>Model:</b>	P3-MMMM-FFF-OO P4-MMMM-FFF-OO P5-MMMM-FFF-OO  Where M can be a combination of a letter R to U and a number 1-10, F, G, or Z; where F can be a combination of the letter E, F or T and any number 0-9 or blank; where O can be any number 0-9 or blank designating parallel option. Dashes are optional in model designation.
<b>Rating:</b>	P3-MMMM-FFF-OO INPUT ~ 100-240VAC 50/60Hz 3.4A  P4-MMMM-FFF-OO INPUT ~ 100-240VAC 50/60Hz 5.5A  P5-MMMM-FFF-OO INPUT ~ 100-240VAC 50/60Hz 7.3A  Output rated: See model differences 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: Adam Tangocci / 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 equipment is a modular ac to dc power supply for building-in. The power supply consists of an input power platform and various plug-in Output Modules. Each plug-in Output Module is 1 or 2 slot width.

**Model Differences**

All models provided with a power platform and maybe provided with various combinations of Output Modules.

Model P3 and P4 Series are similar to the P5 Series with exception to the output wattage rating. See output rating table provided below.

**Output Rating:**

P3 Series: Max 250 W: up to 2 output modules provided.

P4 Series: Max 350 W: up to 2 output modules provided.

P5 Series: Max 450 W: up to 2 output modules provided.

**Output Module Ratings (DC Voltage only):**

Module SX Series, where X = 1-5, F, G, or Z:

SZ: 1.8 V @ 50 A

S1: 2.5 V @ 50 A

S2: 3.3 V @ 50 A

S3: 5.0 V @ 50 A

SF: 8.0 V @ 31 A

SG: 10.0 V @ 25 A

S4: 12.0 V @ 20 A

S5: 15.0 V @ 17 A

Module S@ Series, where @ = 6-9

S6: 24.0 V @ 10 A

S7: 28.0 V @ 9 A

S8: 36.0 V @ 7 A

S9: 48.0 V @ 5 A

Module UX Series, where X = 1-8:

U5: 3.3 V @ 40 A; 5.0 V @ 4.0 A

U6: 3.3 V @ 40 A; 12.0 V @ 4.0 A

U7: 3.3 V @ 40 A; 15.0 V @ 4.0 A

U8: 3.3 V @ 40 A; 24.0 V @ 2.5 A

U1: 5.0 V @ 40 A; 5.0 V @ 4.0 A

U2: 5.0 V @ 40 A; 12.0 V @ 4.0 A

U3: 5.0 V @ 40 A; 15.0 V @ 4.0 A

U4: 5.0 V @ 40 A; 24.0 V @ 2.5 A

Module RX Series, where X = 1-6:

R6: 5.0 V @ 8 A; 12.0 V @ 6.0 A

R4: 5.0 V @ 8 A; 24.0 V @ 3.0 A

R1: 12.0 V @ 6 A; 12.0 V @ 6.0 A

R5: 12.0 V @ 6 A; 24.0 V @ 3.0 A

R2: 15.0 V @ 5 A; 15.0 V @ 5.0 A

Module TX Series, where X = 1-11:

T3: 3.3 V @ 20 A; 12.0 V @ 4.0 A; 12.0 V @ 4 A

T4: 3.3 V @ 20 A; 15.0 V @ 2.0 A; 15.0 V @ 2 A

<b>Test Item Particulars</b>	
Classification of use by	Ordinary person
Supply Connection	AC Mains
Supply % Tolerance	+10%/-10%
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)	OVC II
Class of equipment	Not Classified
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient	See Model Differences section. °C
IP protection class	IPX0
Power Systems	TN
Altitude during operation (m)	3048 m
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	1.2
<b>Technical Considerations</b>	
<ul style="list-style-type: none"> <li>• 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 at 100% of rated output. 60°C at 75% of rated output. 70°C at 50% of rated output.</li> <li>• The product is intended for use on the following power systems : TN</li> <li>•</li> <li>• The equipment disconnect device is considered to be : To be determined in the end-product.</li> <li>• Required Clearances have been adjusted by multiplying the clearance at sea level by a factor of 1.15 for operating at an altitude of 3048 meters. The correction factor is based on barometric pressure of 70kPa. If the calculated Clearance exceeded the Creepage, the Creepage was adjusted to the value of clearance.</li> </ul>	
<b>Engineering Conditions of Acceptability</b>	
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 product-line tests are conducted for this product : Electric Strength
- 
- The following output circuits are at ES1 energy levels : All Outputs
- The following output circuits are at PS3 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
- 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 : AC N
- The following end-product enclosures are required : Mechanical, Fire, Electrical
- 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) : Platform: T1, Modules:T1, T2, and T3 (Class F)
- The power supply was evaluated to be used at altitudes up to : "3048 m"
- 
- When installed in a Class I end product, the power supply shall be mounted in a manner that provides the minimum required Clearance between the primary side of power supply and protectively earthed accessible conductive parts.
- Heatsinks are floating and considered live. They should not be accessible in the end-product.
- A suitable main disconnect device shall be provided in the end product.
- Consideration to repeating the Touch Current test should be given in the end-product evaluation.
- The power supplies in this report have been subject to Capacitance Discharge testing. Additionally, all associated component safeguards have been assessed to the applicable requirement in Annex G.10. Additional testing should not be needed if directly connected to mains e.g. using an appliance inlet, wiring terminals, etc.



**Additional Information**

Marking Plate is representative of all models.

This report is based on a previous evaluation to IEC 60950-1:2005 (2nd Ed.), Am1:2009 + Am2:2013 under CBTR Ref. No. E139109-A63-CB-3 including Amendments, CBTC Ref. No. US-25793-UL. Based on the previously conducted performance testing, only the tests conducted as part of this investigation were considered necessary.

The following tests were conducted under CTDP SMT/CTF Stage 3 to IEC 60950-1 E2+A1+A2 at XP POWER LLC, 15641 RED HILL AVE, SUITE 100, TUSTIN, CA 92780, USA:

Input: Single-Phase (1.6.2)

Capacitance Discharge (2.1.1.7)

SELV Reliability Test Including Hazardous Voltage Measurements (2.2.2, 2.2.3, 2.2.4, Part 22 6.1)

Determination of Working Voltage; Working Voltage Measurement (2.10.2)

Distance Through Insulation Measurements (2.10.5)

Heating (4.5.1, 1.4.12, 1.4.13)

Ball Pressure (4.5.5, 4.5)

Electric Strength (5.2.2)

Component Failure (5.3.1, 5.3.4, 5.3.7)

Abnormal Operation (5.3.1 - 5.3.9)

Transformer Abnormal Operation (5.3.3, 5.3.7b, Annex C.1)

Power Supply Output Short-Circuit/Overload (5.3.7)

The following additional tests were conducted on a sample of model P5-S3 in accordance with IEC 62368-1:2014 (Second Edition) at XP POWER LLC, 15641 RED HILL AVE, SUITE 100, TUSTIN, CA 92780 USA:

Electric Strength Test (5.4.9)

Prospective Touch Voltage and Touch Current Measurement (5.7)

**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
Equipment rating marking – ratings	"Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"
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**

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