

# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20180102-E139109  
**Report Reference** E139109-A176-UL  
**Issue Date** 2018-JANUARY-02

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


**This is to certify that representative samples of** See Addendum

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

**Standard(s) for Safety:** UL 60950-1 & CAN/CSA C22.2 No. 60950-1-07, Information Technology Equipment - Safety - Part 1: General Requirements

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

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

Switching Power Supply Series –

XTL30-MMMMMMMMMM-PPSS++/MMMMMMMMMM-PPSS++ and XTL15-MMMMMMMMMM-PPSS++/MMMMMMMMMM-PPSS++ (Where M can be blank or a combination of a number 1, 2, 3, 4, or 5 or a letter A-Z; where P can be any number 0-9 or blank; where S can be any number 0-9 or blank; where + can be any number 0-9 or blank)



Bruce Mahrenholz, Director North American Certification Program

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## UL TEST REPORT AND PROCEDURE

<b>Standard:</b>	UL 60950-1, 2nd Edition, 2014-10-14 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements)
<b>Certification Type:</b>	Component Recognition
<b>CCN:</b>	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
<b>Complementary CCN:</b>	QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
<b>Product:</b>	Switching Power Supply Series
<b>Model:</b>	XTL30-MMMMMMMMMM-PPSS++/MMMMMMMMMM-PPSS++ and XTL15-MMMMMMMMMM-PPSS++/MMMMMMMMMM-PPSS++ (Where M can be blank or a combination of a number 1, 2, 3, 4, or 5 or a letter A-Z; where P can be any number 0-9 or blank; where S can be any number 0-9 or blank; where + can be any number 0-9 or blank)
<b>Rating:</b>	XTL30-MMMMMMMMMM-PPSS++/MMMMMMMMMM-PPSS++: 180-264 Vac, (3W+PE), 50/60 Hz, 14A MAX Per Phase (208Vac nominal, +/-10% Tolerance)  XTL15-MMMMMMMMMM-PPSS++/MMMMMMMMMM-PPSS++: 180-264 Vac, (3W+PE), 50/60 Hz, 7A MAX Per Phase (208Vac nominal, +/-10% Tolerance)  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.

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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

Product Description - The equipment is a modular ac (single phase or three phase (3W+PE)) to dc power supply for building-in. The power supply consisting of an input power platform and various plug-in Output Modules. Each plug-in Output Module is either 2, 3 or 4 slot width. Each power platform supports 10-14 slots for the XTL30 Series platform and up to 7 slots for the XTL15 Series platform, in any combination of 2, 3 or 4 slot plug-in modules.

Outputs can be connected in series or parallel.

### Model Differences

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

Model XTL15 is similar to XTL30 Series with exception to the platform, main PWB, number of Modules, input rating and 1500W output rating.

Output Rating:

XTL30 Series: Max 3000W: up to 10 output modules provided.

XTL15 Series: Max 1500W: up to 7 output modules provided.

Output Module Ratings:

Modules 1A-1Z: 2 Slot Module, 3.3 to 60 Vdc, Max. 20 A, Max. 126 W

Modules 2A-2Z: 2 Slot Module, 3.3 to 60 Vdc, Max. 40 A, Max. 252 W

Modules 3A-3Z: 3 Slot Module, 3.3 to 60 Vdc, Max. 60 A, Max. 420 W

Modules 4A-4Z: 4 Slot Module, 12.0 to 60 Vdc, Max 62.5A, Max 756W

Modules 5A-5Z: 2 Slot Module, Dual Output: V1=3.3 to 24 Vdc, Max. 10 A, Max, 150 W: V2 = 2.0 to 24 Vdc, Max. 10 A, Max. 150 W (V1+V2 150W Max.)

Modules 6A-6Z: 2 Slot Module, Dual Output: V1=5Vdc to 24 Vdc, Max 10 A, Max, 175 W: V2=5Vdc to 24 Vdc, Max 10 A, Max, 175 W (V1+V2 175W Max.)

### Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : To be determined in the end system
- 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 : Yes
- IT testing, phase-phase voltage (V) : 230
- Class of equipment : Class I (earthed)
- Considered current rating of protective device as part of the building installation (A) : 20
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : 5000
- Altitude of test laboratory (m) : 17
- Mass of equipment (kg) : 4.6 for XTL30 and 3.1 for XTL15
- The product was submitted and evaluated for use at the maximum ambient temperature (T<sub>ma</sub>) permitted by the manufacturer's specification of: 100% rated output load: 50°C. 50% rated output load: 70°C.
- The means of connection to the mains supply is: For Building-In
- The product is intended for use on the following power systems: TN, IT
- The equipment disconnect device is considered to be: Internal Connection
- The product was investigated to the following additional standards: IEC 62368-1 2nd Ed and EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 (which includes all European national differences, including those specified in this test report).
- According to IEC60664-1, Table A2, required Clearances have been adjusted by multiplying the clearance at sea level by a factor of 1.48 for operating at an altitude of 5000 meters for all countries. The correction factor is based on barometric pressure of 70kPa and Overvoltage Category II. If the calculated Clearance exceeded the Creepage, the Creepage was adjusted to the value of clearance. No other additional requirements were considered at this time as they are not explicitly addressed in UL/IEC 60950-1.
- The internal wiring is certified Appliance Wiring Material rated VW-1 and/or FT-1 which were considered equivalent to the tests of IEC60332-1-2 and IEC60332-1-3. The final acceptability of the internal wiring may be determined under the discretion of the receiving NCB.

#### **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: For Model XTL30 Series and XTL15 Series:, Primary-SELV: 258Vac, 420Vpk, Primary-Earth: 120Vac, 170Vpk
- The following secondary output circuits are SELV: (ES1) all outputs, Unless connected in series, see below C of A for Max Voltage.
- The following secondary output circuits are at hazardous energy levels: (PS3) 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

- 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): XTL30 Series:T101and T203 (Class F); All Modules: T1, T2 and T3 (Class F). XTL15 Series: T1 (Class F).
- The following end-product enclosures are required: Fire, Mechanical, Electrical
- The supply terminal block (TB101 or TB1) is suitable for factory wiring. The output terminals and/or connectors have not been investigated for field wiring. Terminal block (TB101 or TB1) is suitable for copper wire only, 22-14 AWG, 10 lbs. torque, 110°C.
- The maximum continuous output power shall not to exceed 3000 W for XTL30 Series and 1500W for XTL15 Series when used with any combination of output modules.
- Safeguards against capacitor discharge after disconnection of a connector shall be evaluated in the end-product.
- An investigation of the protective earthing connection has been conducted. All units must be connected directly to the building mains protective earthing connection.
- These component power supplies employ VDRs connected to ground in series with a GDT. The GDT was not evaluated for basic insulation. They are to be installed within an end-product which will be installed within a rack system. Permanent connection to earth is guaranteed by means of the overall rack configuration and the Pluggable Type B power distribution unit (PDU) which powers the individual sub-components within the rack.

**Additional Information**

Technical Amendment:

Report updated on 2018-02-18.

Revised operating altitude to 5000 meters in Test Item Particulars and Technical Considerations.

Revised Table 2.10.3 and 2.10.4 to indicate required creepages and clearances for operation at 5000 meter elevation.

Component licenses provided may be older than 3 years old. Manufacturer to provide updated license upon request.


Nameplate markings provided were considered representative of the entire series.

The clearance distances have additionally been assessed for suitability up to 5000 m elevation (1.48 correction factor per IEC 60664-1, Table A2).

**Additional Standards**

The product fulfills the requirements of: CSA C22.2 No. 60950-1-07 + A1:2011 + A2:2013, EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013, IEC 60950-1:2005 + A1:2009 + A2:2013

**Markings and instructions**

Clause Title	Marking or Instruction Details
Terminal for main protective earthing	<p>Provided adjacent to the main protective earthing terminal (60417-5019)</p> 
1.7.7.1 Protective Bonding Marking	<p>Protective bonding terminal is marked with either the earth symbol (60417-2-IEC-5017) near the terminal or not provided.</p>