

CERTIFICATE OF COMPLIANCE

Certificate Number 2016-12-29-E146893
Report Reference E146893-D1012-1/A0/C0-ULCB
Issue Date 2016-12-29
Issued to: XP POWER LLC
Applicant Company: 15641 RED HILL AVE, SUITE 100
TUSTIN CA 92780 UNITED STATES
Listed Company: Same as Applicant

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

Power Supply
N12-MMMM-PPFNN (Where M can be blank or a letter A-Z,
indicating module designation. Where P can be any number 0-9
or blank. Where F can be A or C. Where N can be any number
0-9 or blank. Dashes provided optionally.

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

Standard(s) for Safety:

ANSI/AAMI ES60601-1: A1:2012, C1:2009/(R)2012 and
A2:2010/(R)2012, CSA CAN/CSA-C22.2 NO. 60601-1:14, IEC
60601-1 Edition 3.1 (2012), IEC 60601-1 Edition 3.1 (2012) /
EN 60601-1:2006 + A1:2013 + A12:2014

Additional Standards:
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.

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.

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

B. Mahlenholz

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Joseph Hosey, General Manager, Director of Sales – Canada, UNDERWRITERS LABORATORIES OF CANADA INC.

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Customer Service Representative www.ul.com/contactus



Description**UL TEST REPORT AND PROCEDURE**

Standard:	ANSI/AAMI ES60601-1: A1:2012, C1:2009/(R)2012 and A2:2010/(R)2012, CSA CAN/CSA-C22.2 NO. 60601-1:14, IEC 60601-1 Edition 3.1 (2012), IEC 60601-1 Edition 3.1 (2012) / EN 60601-1:2006 + A1:2013 + A12:2014
Certification Type:	Component Recognition
CCN:	QQHM2 / QQHM8
Complementary CCNs:	
Product:	Power Supply
Model:	N12-MMMM-PPFNN (Where M can be blank or a letter A-Z, indicating module designation. Where P can be any number 0-9 or blank. Where F can be A or C. Where N can be any number 0-9 or blank. Dashes provided optionally.
Rating:	Input: 100-240 Vac, 50/60 Hz, 10 A Output: See model differences.
Applicant Name and Address:	XP POWER LLC 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 as applicable.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared by: Haydee Gonzalez / Project Handler Reviewed by: Ahmad Daoudi / Project 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 modular component switching power supply intended for building-in.

The power supply consists of an input power platform and various plug-in output modules. Each plug-in output module is one slot width. Each power platform supports four slots per platform.

Outputs can be connected in series or in parallel.

Refer to the Report Modifications page for any modifications made to this report.

Model Differences

All models are provided with a power platform and various combinations of output modules.

Power Platform Chassis:

N12: Max 1200 W (100-240 Vac): up to four output modules provided.

Output Module Ratings:

Modules A-E*: 3.3 to 5.5 Vdc, 40 A max, 200 W max.

Modules F-J : 8 to 15 Vdc, 20.8 A max, 250 W max.

Modules K-O: 18 to 30 Vdc, 12.5 A max, 300 W max.

Modules P-T: 33 to 60 Vdc, 6.25 A max, 300 W max.

*B = Blank, no module provided.

Additional Information

The attached Marking Plate for Model N12-CHMR-00A00 is considered representative of the entire series.

IEC certificates for components older than 3 years may be included in Licenses Enclosure. Manufacturer to provide updated licenses upon NCB's request.

When submitting this Test Report to other Certification Body, the manufacturer is responsible for providing any additional information that the Body may need in order to issue its Mark, including testing for compliance with the applicable collateral standards.

Technical Considerations

- The product was investigated to the following additional standards:
- The following additional investigations were conducted: None
- The product was not investigated to the following standards or clauses: Biocompatibility, PESS, EMC, Annex Z of EN standards for compliance with the MDD
- The following accessories were investigated for use with the product: None
- The degree of protection against harmful ingress of water is: Ordinary
- The mode of operation is: Continuous

- The product is suitable for use in the presence of a flammable anesthetics mixture with air or oxygen or with nitrous oxide: No
- The power supplies were evaluated for use in 50°C ambient at Full Rated Output and 50% of the Rated Output in 70°C ambient. See Enclosure Misc(01)
- Scope of Power Supply evaluation defers the following clauses to the be determined as part of the end product: Clause 7.5 (Safety Signs), Clause 7.9 (Accompanying Documents), Clause 9 (ME Hazard), Clause 10(Radiation), Clause 14 (PEMS), Clause 16 (ME Systems)
- Scope of Power Supply evaluation excludes the following: Patient applied parts clauses: 4.6, 7.2.10, 8.3, 8.5.2, 8.5.5, 8.7.4.7-8.7.4.9, 8.9.1.15; Battery related clauses: 7.3.3, 15.4.3; Hand Control related clauses: 8.10.4; Oxygen related clauses: 11.2.2; Fluids related clauses: 11.6.2 – 11.6.4; Sterilization clause: 11.6.7; Biocompatibility Clause: 11.7 (ISO 10993); Motor related clauses: 13.2.13.3, 13.4; Heating Elements related clause: 13.2; Flammable Anaesthetic Mixtures Protection: Annex G

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 component shall be considered for compliance with the Marking (clause 7) and Separation (clause 8) requirements as part of the end use application evaluation.
 - This power supply was evaluated with Two MOPP between Primary and Secondary; One MOPP primary and Earth.
 - This power supply has been evaluated as a continuous operation, ordinary equipment and has not been evaluated for use in the presence of a flammable anesthetic mixture with air, oxygen, or nitrous oxide. The output circuits have not been evaluated for direct patient connection (Type B, BF or CF).
 - The end product shall ensure that the requirements related to accompanying documents, clause 7.9, are met.
 - The available voltage for the secondary outputs does not exceed 25 Vac or 60 Vdc, under normal and single fault conditions. The following secondary output circuits are not at hazardous energy levels: A-E.
 - The following secondary output circuits are at hazardous energy levels: F-T.
 - Connectors are suitable for factory wiring only.
 - The Dielectric Strength Test conducted on this power supply was based upon a maximum working voltage of: For Platform: Primary-Earthed Dead Metal: 340 Vpk, 232 Vrms; Primary-Secondary: 284 Vpk, 127 Vrms.
 - Chassis shall be suitably earthed as part of the end product.
 - 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): Output Modules: T1 - T6 (Class F, 155°C); L5 (Class F, 155°C).
 - Printed Wiring Board rated 130°C.
 - Cleaning test shall be considered as part of end product evaluation.
 - The need for Marking Durability and Marking Legibility Testing shall be considered as part of the end product installation.
 - Fire/ Mechanical/ Electrical Enclosure to be provided as part of the end product.
 - The products were tested on a 20 A branch circuit. If used on a branch circuit greater than this, additional testing may be necessary.
 - Input terminal blocks, when provided, are suitable for No. 12-22 AWG, CU.
 - Appliance Inlet, when provided, does not form the supply connection to ME Equipment.
 - Repeat of leakage current testing and consideration of non-frequency weighted leakage shall be considered as part of the end product.
 - Temperature, Protective Earthing, Dielectric Voltage Withstand, and Interruption of the Power Supply tests shall be considered as part of the end product evaluation.
 - Consideration shall be given to measuring the temperature on power electronic components and

transformer windings when the power supply is installed in the end-use equipment. The end-use product shall ensure that the power supply is used within its ratings.