

CERTIFICATE OF COMPLIANCE

Certificate Number 20181201-E317867
Report Reference E317867-A4-UL
Issue Date 2018-DECEMBER-01

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;
Component - Power Supplies For Use With Audio/Video,
Information And Communication Technology Equipment
See Addendum Page for Models/Product

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 60950-1 & CSA C22.2 No. 60950-1-07, Information
Technology Equipment - Safety - Part 1: General
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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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, Models:
ECL25US05-XB0232A, ECL25US24-XE0526, ECL25USXX-Y

Where XX is 03, 05, 09, 12, 15, 24 or 48, Y is E, P, S, SD, T, or blank. "-" provided optionally.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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UL TEST REPORT AND PROCEDURE

Standard:	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)
Certification Type:	Component Recognition
CCN:	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Complementary CCN:	QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
Product:	Switching power supply
Model:	ECL25US05-XB0232A ECL25US24-XE0526 ECL25USXX-Y
Rating:	Where XX is 03, 05, 09, 12, 15, 24 or 48, Y is E, P, S, SD, T, or blank. "-" provided optionally. ECL25USXX, ECL25US05-XB0232A: INPUT: 100-240V~ 0.8A 50-60Hz OUTPUT: See Model Differences for details. ECL25US24, ECL25US24-XE0526: INPUT: 100-240V~ 50-60Hz, 0.8A; or 40-85Vdc 0.8A OUTPUT: See Model Differences for details.
Applicant Name and Address:	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.

Issue Date: 2012-09-26
2018-11-19

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Report Reference #

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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: 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

Switching Power Supply consisting of electronic components mounted on PCB and may be housed in plastic enclosure with epoxy.

Model Differences

Model ECL25USXX-T is similar to ECL25USXX-P except for ECL25USXX-T has I/O terminals and ECL25USXX-P has I/O pins.

Model ECL25USXX-T is similar to Model ECL25USXX-E except for ECL25USXX-E is housed in plastic enclosure with epoxy.

Secondary heat sink H1 provided on Models ECL25US03-Y, ECL25US05-Y and ECL25US09-Y.

Model ECL25USXX-S is similar to Model ECL25USXX-E except for Model ECL25USXX-S with I/O terminal blocks, ECL25USXX-E with I/O pins, enclosure shape, PWB layout and model designation.

Model ECL25USXX-SD is similar to Model ECL25USXX-S except for Model ECL25USXX-SD is provided with a DIN rail clip.

Model ECL25US05-XB0232A is similar to Model ECL25US05-T except for Model ECL25US05-XB0232A is rated for 50% of full load at 85°C ambient.

Model ECL25US24-XE0526 is identical to Model ECL25US24 except for model designation.

Models rated full load at 50°C ambient:

ECL25US03-Y: 3.3 Vdc (2.95 - 3.65 Vdc), 6A Max, 19.8 Max
ECL25US05-Y, ECL25US05-XB0232A: 5 Vdc (4.5 - 5.5 Vdc), 5A Max, 25W Max
ECL25US09-Y: 9 Vdc (8.1 - 10 Vdc), 2.8A Max, 25W Max
ECL25US12-Y: 12 Vdc (10.1 - 13.5 Vdc), 2.1A Max, 25W Max
ECL25US15-Y: 15 Vdc (13.5 - 17 Vdc), 1.67A Max, 25W Max
ECL25US24-Y, ECL25US24-XE0526: 24 Vdc (21.1 - 26 Vdc), 1.04A Max, 25W Max
ECL25US48-Y: 48 Vdc (42 - 52 Vdc), 0.52A Max, 25W Max

Models for use at 50% of rated full load at 70°C ambient:

ECL25US03-Y: 3.3 Vdc (2.95 - 3.65 Vdc), 3A Max, 9.9W
ECL25US05-Y: 5 Vdc (4.5 - 5.5 Vdc), 2.5A Max, 12.5W Max

ECL25US09-Y: 9 Vdc (8.1 - 10 Vdc), 1.4A Max, 12.5W Max
ECL25US12-Y: 12 Vdc (10.1 - 13.5 Vdc), 1.05A Max, 12.5W Max
ECL25US15-Y: 15 Vdc (13.5 - 17 Vdc), 0.835A Max, 12.5W Max
ECL25US24-Y, ECL25US24-XE0526: 24 Vdc (21.1 - 26 Vdc), 0.52A Max, 12.5W Max
ECL25US48-Y: 48 Vdc (42 - 52 Vdc), 0.26A Max, 12.5W Max

Model ECL25US05-XB0232A for use at 50% of full load at 85°C ambient: 5 Vdc (4.5 - 5.5 Vdc), 2.5 A Max, 12.5W Max

Models rated full load at 50°C ambient with DC input:

ECL25US24, ECL25US24-XE0526: 24 Vdc (21.1 - 26 Vdc), 0.625A Max, 15W Max

Models for use at 50% of rated full load at 70°C ambient with DC input:

ECL25US24, ECL25US24-XE0526: 24 Vdc (21.1 - 26 Vdc), 0.3125A Max, 7.5W Max

Technical Considerations

- Equipment mobility : movable
- Connection to the mains : not directly connected to the mains
- Operating condition : continuous
- Access location : for building-in
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10%, -10% for AC Models; 40-85 V for DC Models
- Tested for IT power systems : Yes
- IT testing, phase-phase voltage (V) : 230 Vac (for Norway)
- Class of equipment : Class I or Class II (Determined by end product)
- Considered current rating of protective device as part of the building installation (A) : 0.8 A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : up to 3048 m
- Altitude of test laboratory (m) : less than 2000 m
- Mass of equipment (kg) : 0.065
- The product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of: 50°C at full load output; 70°C at half load output; For Model ECL25US05-XB0232A only: 85°C for output with half load (de-rated to 50%).
- The product is intended for use on the following power systems: IT, TT and TN; IT, TT, TN and DC mains supply for Models ECL25US24 and ECL25US24-XE0526
- The product was investigated to the following additional standards: 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).
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): Outputs of models ECL25US24 and ECL25US24-XE0526.
- According to IEC60664-1, Table A2, 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 and Overvoltage Category II. If the calculated Clearance exceeded the Creepage, the Creepage was adjusted to the value of clearance.

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:

- Terminal block type ELK508 suitable for solid/stranded copper wiring only, 30-14 AWG, 4.5 lbs.-in. torque. Terminal block type ETB33 suitable for solid/stranded copper wiring only, 22-14 AWG, 3.48 lbs.-in. torque.
- The clearance and creepage distances have additionally been assessed for suitability up to 3048 m elevation.
- Printed Wiring Board rated 130°C.
- 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: Primary-SELV: 264 Vrms, 520 Vpk
- The following secondary output circuits are SELV: All Output Circuits
- The following secondary output circuits are at non-hazardous energy levels: All Output Circuits
- The power supply terminals and/or connectors are: Suitable for factory wiring only; Model ECL25USXX-S or ECL25USXX-SD series only; Suitable for field wiring.,
- The maximum investigated branch circuit rating is: 20 A (for AC models)
- The investigated Pollution Degree is: 2
- The following magnetic devices (e.g. transformers or inductor) are provided with an OBJ2 insulation system with the indicated rating greater than Class A (105°C): T1 (Class 130 (B) or Class 155 (F)) and L1 (Class 130 (B)). ,
- The following end-product enclosures are required: Fire, Electrical
- 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 62368-1 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

This report is a Standard upgrade/reissue of CBTR Ref. No.: E317867-A4-CB-4, CB Test Certificate Ref. No. US-19820-UL and US-19820-A1-UL to IEC 60950-1:2005 (Second Edition), Am1:2009 + Am2:2013. Based on the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, only the construction review and the review of previous tests was deemed necessary. All required tests were carried out under the original investigation.

In addition, two alternate label systems were added to this report (Brady Worldwide, Type B-423 and 3M, Types 7816 or 7818) based on previous evaluation for this manufacturer under CBTR Ref. No.: E139109-A139, CBTC Ref. No.: US-24981-UL and US-24981-M1-UL.

The clearance and creepage distances have additionally been assessed for suitability up to 3048 m elevation.

Unit has not been evaluated for use in tropical climate conditions.

The sample submitted for evaluation is representative of the products manufactured at each factory listed on the test report. See Enclosure for Manufacturer's Letter of Assurance.

The label is a draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.

Marking Labels are representatives of all models.

Technical Amendment 2:

-Models, ratings, and model differences sections were updated for clarity.

-UL: The manufacturer submitted representative production samples of these models for construction review and testing. Evaluation and testing were performed for compliance to UL 62368-1 Edition 2 and CSA C22.2 NO. 62368-1-14 - Edition 2. Evaluation specifics can be found under CBTR E317867-A6023-CB-1.

Additional Standards

The product fulfills the requirements of: CSA C22.2 No. 60950-1-07 2nd Ed. Revised 2014-10-14, EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013, UL 60950-1 2nd Ed. Revised 2014-10-14, IEC 60950-1:2005 + A1:2009 + A2:2013, UL 62368-1 - Edition 2 - Issue Date 2014-12-01, CSA C22.2 NO. 62368-1-14 - Edition 2 - Issue Date 2014-12-01

Markings and instructions

Clause Title	Marking or Instruction Details
1.7.1 Power rating - Model	Model Number
1.7.1 Power rating - Ratings	Ratings (voltage, frequency/dc, current)
1.7.1 Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
1.7.6 Fuses - Non-operator access/soldered-in fuses	Unambiguous reference to service documentation for instructions for replacement of fuses replaceable only by service personnel

Special Instructions to UL Representative

N/A

Production-Line Testing Requirements						
<u>Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.</u>						
Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
All Models	Transformer T1	-	Primary to Secondary	300 0	4242	1
<u>Earthing Continuity Test Exemptions - This test is not required for the following models:</u>						
-						
<u>Electric Strength Test Exemptions - This test is not required for the following models:</u>						
-						
<u>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:</u>						
-						
<u>Sample and Test Specifics for Follow-Up Tests at UL</u>						
Model	Component	Material	Test	Sample(s)	Test Specifics	
N/A	-	-	-	-	-	