

# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20190517-E131881  
**Report Reference** E131881-A1570-UL  
**Issue Date** 2019-MAY-17

**Issued to:** DELTA ELECTRONICS INC  
3 TUNGYUAN RD  
CHUNGLI INDUSTRIAL ZONE  
TAOYUAN COUNTY  
32063 TAIWAN

**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

Refer to 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.

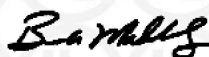
**Standard(s) for Safety:** Refer Addendum page for Standard(s) for Safety

**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

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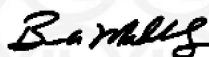
This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

## Models/Product

Switching Power Supply  
MDS-065APS12 B, MDS-065APS15 B, MDS-065APS18 B, MDS-065APS24 B, PJT-12V65WBAXY,  
PJT-15V65WBAXY, PJT-18V65WBAXY, PJT-24V65WBAXY (X,Y=0-9, A-Z or Blank)

## Standard(s) for Safety

UL 60950-1 and CAN/CSA C22.2 No. 60950-1-07, Information Technology Equipment - Safety - Part 1:  
General Requirements



Bruce Mahrenholz, Director North American Certification Program

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## UL TEST REPORT AND PROCEDURE

<b>Standard:</b>	UL 60950-1, 2nd Edition, 2019-05-09 (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
<b>Model:</b>	MDS-065APS12 B, MDS-065APS15 B, MDS-065APS18 B, MDS-065APS24 B, PJT-12V65WBAXY, PJT-15V65WBAXY, PJT-18V65WBAXY, PJT-24V65WBAXY (X,Y=0-9, A-Z or Blank)
<b>Rating:</b>	Input: 100-240V~, 1.5-0.75A, 50-60Hz (for models MDS-065APS12 B, MDS-065APS15 B, MDS-065APS18 B, MDS-065APS24 B)  Input: 100-240V~, 1.5A, 50-60Hz (for models PJT-12V65WBAXY, PJT-15V65WBAXY, PJT-18V65WBAXY, PJT-24V65WBAXY)  Output: 24Vdc, 2.71A (for models MDS-065APS24 B, PJT-24V65WBAXY) 18Vdc, 3.61A (for models MDS-065APS18 B, PJT-18V65WBAXY) 15Vdc, 4.2A (for model MDS-065APS15 B, PJT-15V65WBAXY) 12Vdc, 5.42A (for model MDS-065APS12 B) 12Vdc, 5.0A (for model PJT-12V65WBAXY)
<b>Applicant Name and Address:</b>	DELTA ELECTRONICS INC 3 TUNGYUAN RD CHUNGLI INDUSTRIAL ZONE TAOYUAN CITY 32063 TAIWAN

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: Ann Lin/Stalling Chen

Reviewed by: Neilson Chiu

Issue Date: 2014-04-07  
2019-09-18

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Report Reference #

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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

Electronic components mounted on PWB.

### Model Differences

- All Models similar to each other except the differences in Enclosure ID 7-01.

### Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : pluggable A
- Operating condition : continuous
- Access location : Determined in end product
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10%, -10%
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Determined in end product
- 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) : Up to 5000 meters
- Altitude of test laboratory (m) : less than 2000 meters
- Mass of equipment (kg) : Approx. 0.125
- 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 for full load, 70°C for half load.,
- The product is intended for use on the following power systems: TN
- 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 equipment is operated up to 5000 m (16404 feet) above sea level as declared by manufacturer. Clearances have been evaluated according to IEC 60664-1: table A.2 with a multiplication factor of 1.48 throughout this report.

- Unless otherwise specified, all tests are performed on the equipment with installed F1, F2 fuses, by EVER ISLAND ELECTRIC CO LTD & WALTER ELECTRIC, Type 2010, Rated T3.15AL, AC 250V representing worse case among all fuses submitted under this investigation.

**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: Primary-SELV: 277Vrms, 528Vpk,
- The following secondary output circuits are SELV: All outputs
- The following secondary output circuits are at non-hazardous energy levels: All outputs
- The following output terminals were referenced to earth during performance testing: Secondary GND
- 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
- An investigation of the protective bonding terminals has: Not been conducted
- 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): T1 (Class B)
- The following end-product enclosures are required: Mechanical, Fire, Electrical
- The equipment is suitable for direct connection to: AC mains supply

**Additional Information**

N/A

**Additional Standards**

The product fulfills the requirements of: -UL 62368-1, 2nd Edition, 2014-12-01 (Audio/video, Information and Communication Technology Equipment - Part 1: Safety Requirements); -CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12 (Audio/video, Information and Communication Technology Equipment - Part 1: Safety Requirements)

**Markings and instructions**

Clause Title	Marking or Instruction Details
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number

Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.
UL 62368-1, 2nd ed., F.3.3.3 – AC symbol	The symbol of IEC 60417-5032 shall be used for a.c. input

**Special Instructions to UL Representative**

- Inspect the transformer listed in Production-Line Testing Requirements (Electric Strength Test Special Constructions) per AA1.1 - (C).
- When the tests are conducted at other location, inspect test record and specification sheet provided by the component manufacturer.
- Verify the specification sheet indicates 100% routine test specified in Production-Line Testing Requirements (Electric Strength Test Special Constructions) be conducted at the component manufacturer.

**Production-Line Testing Requirements**

**Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.**

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
All models	Transformers (T1)	N/A	Primary pins to Secondary pins	300 0	4242	1

**Earthing Continuity Test Exemptions - This test is not required for the following models:**

**Electric Strength Test Exemptions - This test is not required for the following models:**

**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:**

**Sample and Test Specifics for Follow-Up Tests at UL**

Model	Component	Material	Test	Sample(s)	Test Specifics
N/A					