

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)
Product:	Switching Power supply for building-in
Model:	DS2900-3-001 DS2900-3 DS2900-3-002
Rating:	DS2900-3-001: Input : 200 - 240Vac; 50/60Hz 20.0A Max. Output : +12.0V, 240A Max; +3.3Vsb, 3A Max DS2900-3: Input : 200-240Vac; 50/60Hz 16A Output : +12.0V, 240A Max; +3.3Vsb, 3A Max DS2900-3-002: Input : 200 - 240Vac; 50/60Hz 16.0A Output : +12.0V, 240A Max; +5.0Vsb, 2.0A Max
Applicant Name and Address:	ASTEC INTERNATIONAL LTD - PHILIPPINE BRANCH 3RD & 4TH FL, TECHNO PLAZA ONE BLDG, 18 ORCHARD RD, EASTWOOD CITY CYBERPARK, BAGUMBAYAN, QUEZON CITY 1110, PHILIPPINES

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.

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Reviewed by: Brian Wong

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

Class I Power supply for building-in.

Model Differences

Model DS2900-3 are identical to model DS2900-3-001 except for model designation, input current rating, fan airflow direction and base chassis/fan grill construction.

Models DS2900-3-002 are identical to model DS2900-3 except for model designation, standby output and Auxiliary Transformer.

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : pluggable A
- Operating condition : continuous
- Access location : to be considered in end system
- 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 : Class I (earthed)
- Considered current rating of protective device as part of the building installation (A) : See Cover Page for details
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : 3048
- Altitude of test laboratory (m) : < 500
- Mass of equipment (kg) : < 18
- The Clearances and Creepage Distances have additionally been assessed for suitability up to 3048 m or 10000 ft elevation.
- Ventilation airflow for Model DS2900-3-001 is from Handle to Input/Output connector; Ventilation airflow for Models DS2900-3 and DS2900-3-002 are from both normal and reverse direction.
- The product was investigated to the following additional standards: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013 (which includes all European national differences, including those specified in this test report).
- The product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of: 70
- The product is intended for use on the following power systems: TT TN
- The equipment disconnect device is considered to be: provided at end system.
- The following were investigated as part of the protective earthing/bonding: Printed wiring board trace (refer to Enclosure - Schematics + PWB for layouts)
- The class of laser product is: Class 1 (I)
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual

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:

- This power supply was not evaluated for end system mounting. When installed in the end system, the proper evaluation should be considered. ,
- This power supply has a secondary output (+12.0 V) exceeding 240 VA. When installing into the end system, care must be taken that this secondary output and the appropriate wires may not be touched.
- This equipment was not evaluated for end system mounting. When installed in the end system, the proper evaluation should be considered.
- The following Production-Line tests are conducted for this product: Earthing Continuity , Electric Strength
- The following secondary output circuits are SELV: +12V, +3.3Vsb (for model DS2900-3-001 and DS2900-3), +5.0Vsb (for model DS2900-3-002)
- The following secondary output circuits are at hazardous energy levels: +12V
- The following secondary output circuits are at non-hazardous energy levels: +3.3Vsb (for model DS2900-3-001 and DS2900-3), +5.0Vsb (for model DS2900-3-002)
- The power supply terminals and/or connectors are: Not investigated for field wiring
- The maximum investigated branch circuit rating is: 30 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: 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): T101, T102, T105 and T103 (Class F)
- The following end-product enclosures are required: Mechanical , Fire , Electrical ,
- The equipment is suitable for direct connection to: AC mains supply ,
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: 388.8 Vrms, 681 Vpk, Primary-Earthed Dead Metal: 384Vrms, 681