

## UL TEST REPORT AND PROCEDURE

<b>Standard:</b>	UL 60950-1, 2nd Edition, 2011-12-19 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12 (Information Technology Equipment - Safety - Part 1: General Requirements)
<b>Certification Type:</b>	Component Recognition
<b>CCN:</b>	QQGQ2, QGGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
<b>Product:</b>	Switch Mode Power Supply (DIN Rail)
<b>Model:</b>	DRB100-24-1-xzy
<b>Rating:</b>	where x, y and z may be any alphanumeric character or blank, considered non safety relevant information. Input: 100-240 Vac, 50/60 Hz, 1.8 A Maximum  Output: 24-28 Vdc, 4.2-3.6 A Maximum power: 100.8 W  Operating ambient temperature: 55 °C for 100% load. >55 °C up to 70 °C for 50% load.
<b>Applicant Name and Address:</b>	TDK-LAMBDA UK LTD KINGSLEY AVE ILFRACOMBE DEVON EX34 8ES UNITED KINGDOM

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: Ronni Kulzinger

**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 product is a Switch Mode Power Supply for DIN-Rail mounting.

**Model Differences**

N/A

**Technical Considerations**

- Equipment mobility : for building-in
- Connection to the mains : not directly connected to the mains
- Operating condition : continuous
- Access location : --
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : Range 90-264 VAC
- 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) : 20
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : up to 2000 above sea level.
- Altitude of test laboratory (m) : approx. 130
- Mass of equipment (kg) : approx. 0.31
- The product was submitted and evaluated for use at the maximum ambient temperature (T<sub>ma</sub>) permitted by the manufacturer's specification of: 55 °C (100% load) and 70 °C (50% load)
- The means of connection to the mains supply is: for building-in
- The product is intended for use on the following power systems: TT, TN
- The equipment disconnect device is considered to be: for building-in
- The following were investigated as part of the protective earthing/bonding: Printed wiring board trace

(refer to Enclosure - Schematics + PWB for layouts)

- LEDs provided in the product are considered low power devices: Yes. LED indicators operate at wavelength in the 400-710 nm range.
- The normal mounting orientation is DIN-Rail vertical (standard mounting orientation: Input (pri) aligned on bottom; Output (sec) on top side.
- No EMC tests were conducted for this product intended for building-in.
- The Clearances and Creepage Distances have additionally been assessed for suitability up to 3000 m elevation/sea level by correction factor 1.14 referenced in Table A.2 IEC 60664-1.

### **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: Earthing Continuity, Electric Strength
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: T1-Primary-Protective Earth: 372Vrms, 536Vpk, T1-Primary-SELV: 368Vrms, 584Vpk
- The following secondary output circuits are SELV: outputs
- The following secondary output circuits are at non-hazardous energy levels: outputs
- The following output terminals were referenced to earth during performance testing: Output -V
- The power supply terminals and/or connectors are: Suitable for field wiring
- 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: Been conducted
- The following input terminals/connectors must be connected to the end-product supply neutral: marked with "N"
- 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 Class155(F)
- The following end-product enclosures are required: Fire, Electrical
- The following components require special consideration during end-product Thermal (Heating) tests due to the indicated maximum temperature measurements during component-level testing: T1, PC101, PC102, C55
- The following LEDs operate within the exempt group per IEC 62471: LED1

### **Additional Information**

Output: 24-28 Vdc, 4.2-3.6 A  
Maximum power: 100.8 W

Operating ambient temperature: 55 °C at 100% load and derating above 55 °C up to 70 °C at 50% load.  
Sample Operation Position: DIN-Rail vertical (input connectors aligned on bottom, output connectors on top side).


HISTORY:

Original Evaluation E135494-A91-UL-1 (13CA18980):  
DRB100-24-1.

#### Additional Standards

The product fulfills the requirements of: CSA C22.2 No. 60950-1-07 + A1:2011

#### 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.
Fuses - Operator caution statement	"CAUTION: For continued protection against risk of fire, replace only with same type and rating of fuse".
Terminal for main protective earthing	Provided adjacent to the main protective earthing terminal (60417-5019) 

#### Special Instructions to UL Representative

N/A