UL TEST REPORT AND PROCEDURE

Standard:	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)
Certification Type:	Component Recognition
CCN:	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Complementary CCN:	N/A
Product:	AC-DC Power Supply
Model:	Model/type reference: DRB120-XX-1/yyy (where XX can be 12 or 48 for the output voltage and yyy is optional and can be alphanumeric characters or blank and is for non-safety related changes - product ratings unchanged)
Rating:	Input: 100-240 VAC, 1.5 A, 50/60 Hz Output DRB120-12-1: Rated: 12-13.2 Vdc, 10-9.09 A Peak: 12-13.2 Vdc, 12-10.9 A, Max 10sec. Output DRB120-48-1: Rated: 48-52.8 Vdc, 2.5-2.27 A Peak: 48-52.8 Vdc, 3-2.72 A, Max 10sec.
Applicant Name and Address:	TDK-LAMBDA SWITZERLAND SA VIA LUSERTE SUD 6 6572 QUARTINO SWITZERLAND

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:	Isaia Bonavoglia / Project Handler	Reviewed By:	Oreste Buzzetti / 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 product covered in this report is a building-in component switch-mode power supply (DIN rail type).

Model Differences

DRB120-12-1 and DRB120-48-1 are almost identical except for the output voltage and current ratings.

Output power is the same for both models, rated 120W.

Test Item Particulars

Equipment mobility	for building-in
Connection to the mains	for building-in, to be provided in end-product
Operating condition	continuous
Access location	N/A (for building-in)
Over voltage category (OVC)	OVC II
Mains supply tolerance (%) or absolute mains supply values	+10%, -15%
Tested for IT power systems	No
IT testing, phase-phase voltage (V)	-
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)	3000m
Altitude of test laboratory (m)	less than 2000 meters
Mass of equipment (kg)	0.45

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 55°C, above 55°C derated linearly to 50% output power at 70°C

- The product is intended for use on the following power systems : TN
- The equipment disconnect device is considered to be : provided in end-product
- 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 were investigated as part of the protective earthing/bonding : Printed wiring board trace (refer to Enclosure - Schematics + PWB for layouts)
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual
- LEDs provided in the product are considered low power devices : Yes

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 : Primary – Earthed Dead Metal: 280Vrms / 510Vpk, , Primary-Secondary: 280Vrms / 510Vpk
- The following secondary output circuits are SELV : PSU output
- The following secondary output circuits are at non-hazardous energy levels : PSU output
- The following output terminals were referenced to earth during performance testing : Input Neutral and “V-“ on the Secondary
- The power supply terminals and/or connectors are : Not investigated 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 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 155(F))
- The following end-product enclosures are required : Electrical, Fire
- The following LEDs operate within the exempt group per IEC 62471 : Indication LED

Additional Information

Output Test Load for DRB120-12-1:

Condition A (rated output)
12 Vdc, 10 A

Condition B (maximum rated output)
13.2 Vdc, 9.09 A

Condition C (50% power derating at maximum ambient)
12 Vdc, 5A @ 70°C

Condition D (peak output current)
12 Vdc, cycle: 12 A for 10 seconds, 3 A for 19 seconds

Output Test Load for DRB120-48-1:

Condition A (rated output)
48 Vdc, 2.5 A

Condition B (maximum rated output)
52.8 Vdc, 2.27 A

Condition C (50% power at maximum ambient)
48 Vdc, 1.25A @ 70°C

Condition D (peak output current)
48 Vdc, cycle: 3 A for 10 seconds, 0.75 A for 19 seconds

Additional Standards

The product fulfills the requirements of: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013

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 companys name, Trade Name, Trademark or File Number
Power rating - Model	Model Number

Special Instructions to UL Representative

N/A