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:	AC-DC Power Supply
Model:	DRL30-12-1-xyz DRL30-15-1-xyz DRL30-24-1-xyz LOX-30-24-1-xyz (Where x, y and z can be any alphanumeric character or blank and is not safety relevant information.)
Rating:	Input: 100-240Vac 0.64A, 50/60Hz Output: DRL30-12-1-xyz: 12-15Vdc, 2.1-1.68A (25.2W) DRL30-15-1-xyz: 15Vdc, 1.68A (25.2W) DRL30-24-1-xyz: 24-28Vdc, 1.25-1.07A (30W) LOX-30-24-1-xyz: 24-28Vdc, 1.25-1.07A (30W)
Applicant Name and Address:	TDK-LAMBDA SWITZERLAND SA VIA LUSERTE SUD 6 6572 QUARTINO TICINO 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 Reviewed by: Oreste Buzzetti

Copyright © 2019

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

Device is double-insulated, switch mode power supply for DIN rail mounting.

Model Differences

All models are mechanically and electrically identical, except for output voltage, transformer version (different number of turns in winding) and changed some passive elements on SELV side (not safety relevant)
Optional suffix "-xyz", denotes customer-specific order (like fixed output voltage)
DRL30-24-1-xyz and LOX-30-24-1-xyz are mechanically and electrically identical, except for color (LOX-30-24-1-xyz is black) and front panel markings. Rating label designs are identical except for model name.

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : to be determined in End Product
- Operating condition : continuous
- Access location : To be determined in End Product
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : Absolute: 85V-264Vac
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : n/a
- Class of equipment : Class II (double insulated)
- Considered current rating of protective device as part of the building installation (A) : 20A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : Up to 2000m; the clearances and creepage distances have additionally been assessed for suitability up to 3000 m elevation.
- Altitude of test laboratory (m) : 300
- Mass of equipment (kg) : 0.11
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer’s specification of: 55°C, 71°C with linear derating above 55°C to 60% of nominal load power at 71°C.

- The means of connection to the mains supply is: to be determined in End Product.
- The product is intended for use on the following power systems: TT, TN
- The equipment disconnect device is considered to be: determined in End Product
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: output
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): output
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- LEDs provided in the product are considered low power devices: Yes
- Outputs of the power supplies covered by this Report are classified to be NEC Class 2 Outputs.

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: 235 Vrms/403 Vpeak for model DRL30-12/DRL-30-15 and 52 Vrms/431 Vpeak for model DRL30-24.
- The following secondary output circuits are SELV: output
- The following secondary output circuits are at non-hazardous energy levels: output
- The following secondary output circuits are Limited Current Circuits: output
- The following secondary output circuits are supplied by a Limited Power Source: output
- 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
- 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°C)
- The following end-product enclosures are required: Fire, Electrical

Additional Information

Double/reinforced insulation between input and output was considered during investigation.

Additional investigation for the outputs to be classified as NEC Class 2 Outputs acc. to UL 1310 / CSA C22.2 No.223 was conducted under the project # 4787449872.

Additional Standards

The product fulfills the requirements of: -

Markings and instructions

Clause Title	Marking or Instruction Details
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number

Power rating - Model	Model Number
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Fuses - Non-operator access/soldered-in fuses	Unambiguous reference to service documentation for instructions for replacement of fuses replaceable only by service personnel
NEC Class 2 Output marking	NEC Class 2 Output marking may be provided on the unit.

Special Instructions to UL Representative

N/A

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
N/A						

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

All 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					