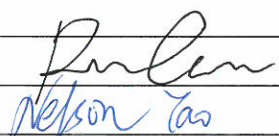
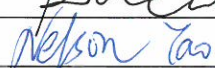




Test Report issued under the responsibility of:



<p>TEST REPORT</p> <p>IEC 60950-1</p> <p>Information technology equipment – Safety –</p> <p>Part 1: General requirements</p>	
Report Number	15081711 001
Date of issue	2015-10-26
Total number of pages	41
Applicant's name	TDK-Lambda Corp. Nagaoka Technical Center
Address	2704-1 Settaya-machi, Nagaoka-shi, Niigata, 940-1195, JAPAN
Test specification:	
Standard	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No.	IEC60950_1F
Test Report Form(s) Originator	SGS Fimko Ltd
Master TRF	Dated 2014-02
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General disclaimer:	
<p>The test results presented in this report relate only to the object tested.</p> <p>This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.</p>	

Test item description		DC-DC Converter	
Trade Mark		TDK-Lambda	
Manufacturer.....		Same as applicant	
Model/Type reference		DLP-PU/E; DLP-PU/EJ	
Ratings		Input A: DC 21-28V, 0-20A Input B: DC 21-28V, 0-20A Output: DC Input-0.5V, 0-20A	
Testing procedure and testing location:			
<input checked="" type="checkbox"/>	CB Testing Laboratory:	TÜV Rheinland (Shanghai) Co., Ltd.	
Testing location/ address		B1-13/F, No.177, Lane 777, West Guangzhong Road, Zhabei District, Shanghai 200072, P. R. China	
<input type="checkbox"/>	Associated CB Testing Laboratory:		
Testing location/ address			
Tested by (name + signature)		Roy Chen	
Approved by (name + signature)		Nelson Yao	
<input type="checkbox"/>	Testing procedure: TMP/CTF Stage 1:		
Testing location/ address			
Tested by (name + signature)			
Approved by (name + signature)			
<input type="checkbox"/>	Testing procedure: WMT/CTF Stage 2:		
Testing location/ address			
Tested by (name + signature)			
Witnessed by (name + signature)			
Approved by (name + signature)			
<input type="checkbox"/>	Testing procedure: SMT/CTF Stage 3 or 4:		
Testing location/ address			
Tested by (name + signature)			
Witnessed by (name + signature)			
Approved by (name + signature)			
Supervised by (name + signature).....			

List of Attachments (including a total number of pages in each attachment):

- ATTACHMENT 1 - Photo documentation (9 pages)
- ATTACHMENT 2- National Differences (28 pages)

Note: Total number of pages in each attachment is indicated in individual attachment.

History of CB Test Report:

- Test report No. 15030997 001 The test report was issued for TDK-Lambda Corp. and addressed model mentioned page 1 tested to IEC 60950-1:2005 (2nd Edition).
- Test report No. 15053457 001. The upgrade test report was issued for TDK-Lambda Corp. Nagaoka Technical Center, and addressed model mentioned page 2 tested according to IEC 60950-1:2005+A1.
- Test report No. 15081711 001. This test report issued for TDK-Lambda Corp. Nagaoka Technical Center serves to combine and upgrade the above mentioned test reports. In this test report updates Group and National Differences. However it is separate CB test report and it does not have to be used in conjunction with any of the previously issued, above mentioned CB test reports.

Summary of testing:

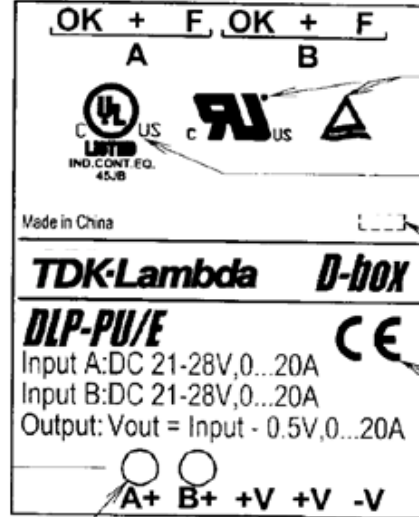
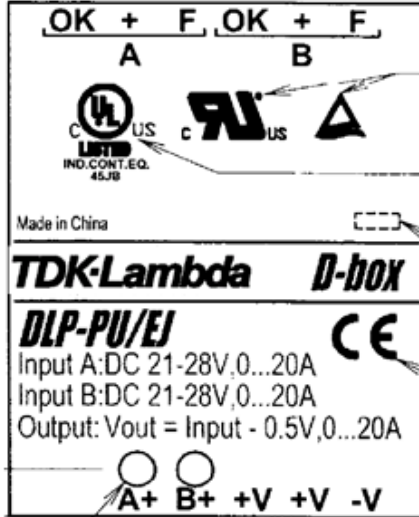
- All applicable tests as described in Test Case and Measurement Sections were performed.
- DLP-PU/EJ is identical to model DLP-PU/E, except for type designation and terminal block.
- Tests are conducted on base model DLP-PU/E.
- Operating temperature of -10°C to 70°C depending on load condition defined in output derating curve and vertical mounting direction specified in instruction manual.
- The equipment is evaluated as Class III equipment and also complies with the following requirement:
 - Withstand voltage: 500VAC (input, output – Metal chassis; relay output – Metal chassis).
 - Insulation resistance: 10MΩ (input, output – Metal chassis; relay output – Metal chassis).
- The equipment is connected to a power supply with over current protection (24A) function during 5.3 fault condition tests.

Tests performed (name of test and test clause): Tested in original report No. 15030997 001		Testing location: TÜV Rheinland (Shanghai) Co., Ltd. B1-13/F, No.177, Lane 777, West Guangzhong Road, Zhabei District, Shanghai 200072, P. R. China
Clause	Test description	
1.6.2	Input Current	
1.7.11	Durability	
4.5.2	Temperature tests	
5.2	Electric strength	
5.3	Abnormal operating and fault conditions	
Upgrade report No. 15053457 001 Testing during original evaluation according to report number 15030997 001, no further testing was deemed necessary for this upgrade of standard.		Same as above
this report No. 15081711 001 No further testing performed for the Amendment 2.		Same as above
Summary of compliance with National Differences		
List of countries addressed:		
EU Group Differences, EU Special National Conditions, AT, CA, DK, US, IT, SE, GB		
Explanation of used codes:		
AT=Austria; CA=Canada; DK=Denmark; IT=Italy; SE=Sweden; GB=United Kingdom; US = United States of America.		
The product fulfils the requirements of EN 60950-1:2006+A11+A1+A12+A2, UL 60950-1:2007 R10.14 and CAN/CSA C22.2 No. 60950-1-07+A1:2011+A2:2014.		

Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBS that own these marks.

<Representative>



Test item particulars	: See below
Equipment mobility	: <input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input checked="" type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains	: <input type="checkbox"/> pluggable equipment <input type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input checked="" type="checkbox"/> not directly connected to the mains
Operating condition	: <input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	: <input type="checkbox"/> operator accessible <input checked="" type="checkbox"/> restricted access location
Over voltage category (OVC)	: <input checked="" type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values	: +20% and -15%
Tested for IT power systems	: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	: N/A
Class of equipment	: <input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III <input checked="" type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A)	: N/A
Pollution degree (PD)	: <input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	: IPX0
Altitude during operation (m)	: Up to 2000
Altitude of test laboratory (m)	: < 2000
Mass of equipment (kg)	: 0.47kg max.
Possible test case verdicts:	
- test case does not apply to the test object	: N/A
- test object does meet the requirement	: P (Pass)
- test object does not meet the requirement	: F (Fail)
Testing	
Date of receipt of test item	: Oct., 2008 (for original report 15030997 001) Sep., 2012 (for report 15053457 001) N/A (for this report)
Date(s) of performance of tests	: Feb., 2009 (for original report 15030997 001) Sep., 2012 (for report 15053557 001) N/A (for this report)
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See ATTACHMENT #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :

- Yes**
- Not applicable**

When differences exist; they shall be identified in the General product information section.

- Name and address of factory (ies)** :
1. Wuxi TDK-Lambda Electronics Co., Ltd.
No.6 Xing Chuang Er Lu, Wuxi, Jiangsu 214028, P.R. China
 2. TDK-Lambda Malaysia Sdn. Bhd.
Lot 2 & 3, Batu 9 3/4 Kawasan Perindustrian, Bandar Baru Jaya Gading, 26070 Kuantan Pahang Malaysia
 3. TDK-Lambda Corp.
Nagaoka Technical Center, 2704-1 Settayamachi, Nagaoka-shi, Niigata 940-1195, JAPAN
 4. Zhangjiagang Hua Yang Electronics Co., Ltd.
Zhao Feng Industrial Zone, Leyu Town, Zhangjiagang, Jiangsu 215622, P.R. China
 5. ALPS Logistics Facilities Co., Ltd.
593-1 Nishi-Hashi, Tsukuba-shi, Ibaraki 305-0831 JAPAN

General product information:

The equipment is DC-DC converter for building-in (class III equipment). External over voltage protection device and over current protection device shall be provided for final connection.

The test samples are production samples without serial number.

Definition of variable(s):

Variable:	Range of variable:	Content:
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--	--	--

Abbreviations used in the report:

- | | | | |
|--------------------------------------|------|----------------------------|-------|
| - normal conditions | N.C. | - single fault conditions | S.F.C |
| - functional insulation | OP | - basic insulation | BI |
| - double insulation | DI | - supplementary insulation | SI |
| - between parts of opposite polarity | BOP | - reinforced insulation | RI |

Indicate used abbreviations (if any)