



Test Report issued under the responsibility of:



**TEST REPORT**  
**IEC 60950-1**  
**Information technology equipment – Safety –**  
**Part 1: General requirements**

Report Number .....: 242708-TL4-1 CB: DE1- 57533/A2  
Date of issue .....: 2017-12-19  
Total number of pages .....: 221

Applicant's name .....: TDK-Lambda Americas Inc.  
Address .....: 3320 Matrix Drive; Suite 100; RICHARDSON TX 75082; USA

**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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**This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.**

**General disclaimer:**

The test results presented in this report relate only to the object tested.  
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><b>Test item description</b>..... :</p> <p><b>Trade Mark</b>..... :</p> <p><b>Manufacturer</b> .....</p> <p><b>Model/Type reference</b> .....</p> <p>10004560 Type differences..... :</p>	<p>Power supply for IT-Equipment / DC/DC-Converter</p> <p><b>TDK-Lambda</b></p> <p>TDK-Lambda Americas Inc.; 3320 Matrix Drive; Suite 100; RICHARDSON TX 75082; USA</p> <p>GQA24002A480V-xxx(-R), (PR) GQA2W004A280V-xxx(-R), (PR) GQA2W005A240V-xxx(-R), (PR) GQA2W008A150V-xxx(-R), (PR) GQA2W010A150V-xxx(-R), (PR) GQA2W010A120V-xxx(-R), (PR) GQA2W028A050V-xxx(-R), (PR)</p> <p><b>Refer to model matrix in appendix 2</b></p>
<p><b>Ratings</b> .....</p> <p>10003893 Rated voltage..... :</p> <p>10004017 Rated current..... :</p> <p>10004112 Rated power..... :</p> <p>10003951 Output voltages and currents..... :</p>	<p>Max. DC 36 V</p> <p>Max. 23 A</p> <p>Max. 150 W</p> <p>Max. 28 A</p>
<p>Supplementary information: The above listing was introduced only for internal VDE administration process.</p>	

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	<b>CB Testing Laboratory:</b>	VDE Prüf- und Zertifizierungsinstitut GmbH VDE <i>Testing and Certification Institute</i>
<b>Testing location/ address.....:</b>		Merianstrasse 28, D-63069 Offenbach, Germany
<input type="checkbox"/>	<b>Associated CB Testing Laboratory:</b>	
<b>Testing location/ address.....:</b>		
<b>Tested by (name, signature) .....</b>		(authorization of test report)
<b>Approved by (name, signature) .....</b>		
<hr/>		
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 1:</b>	
<b>Testing location/ address.....:</b>		
<b>Tested by (name, signature) .....</b>		(authorization of test report)
<b>Approved by (name, signature) .....</b>		
<hr/>		
<input checked="" type="checkbox"/>	<b>Testing procedure: CTF Stage 2:</b>	
<b>Testing location/ address.....:</b>		TDK-Lambda American Inc. 3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA CTF Stage 2 (TDAP File no. 2520400-9501-0001)
<b>Tested by (name + signature) .....</b>		Steve Mckitrick (authorization of test report) 
<b>Witnessed by (name, signature) .....</b>		P. Möbs (authorization of test report) 
<b>Approved by (name, signature) .....</b>		H. Kreuzer 
<hr/>		
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 3:</b>	
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 4:</b>	
<b>Testing location/ address.....:</b>		
<b>Tested by (name, function, signature) .....</b>		(authorization of test report)
<b>Witnessed by (name, signature) .....</b>		
<b>Approved by (name, signature) .....</b>		
<b>Supervised by (name, signature) .....</b>		

<b>List of Attachments (including a total number of pages in each attachment):</b>		
<b>Appendix No.</b>	<b>Description</b>	<b>Page(s)</b>
1	Photos	163 - 164
2	Model matrix	165 – 167
3	PWB Layout / Schematics	168 – 219
4	Datasheet	220 – 221
<b>Summary of testing:</b>		
<b>Tests performed (name of test and test clause):</b>		<b>Testing location:</b>
<p>No tests performed, adding of type key in CB certificate.</p> <p>Test data were adopted from previous test report: Report No. <b>228393-CI3-1</b>.</p>		<p>TDK-Lambda American Inc. 3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA CTF Stage 2 (TDAP File no. 2520400-9501-0001)</p>

<b>Summary of compliance with National Differences:</b>				
<b>List of countries addressed</b>				
The product has been tested according to standard IEC 60950-1:2005 (2 <sup>nd</sup> Edition); am1:2009; am2:2013 / EN 60950-1:2006; A11:2009; A1:2010; A12:2011; A2:2013 and those deviations taken into account of				
<input checked="" type="checkbox"/> CENELEC common modifications	<input checked="" type="checkbox"/> United Kingdom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Finland	<input checked="" type="checkbox"/> Denmark	<input checked="" type="checkbox"/> Ireland	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Sweden	<input checked="" type="checkbox"/> Germany	<input checked="" type="checkbox"/> Spain	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Norway	<input checked="" type="checkbox"/> Switzerland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b><input checked="" type="checkbox"/> CB Bull. NATIONAL DIFFERENCES IEC 60950-1:2005 (2nd Edition)</b>				
<input checked="" type="checkbox"/> Switzerland	<input checked="" type="checkbox"/> Finland	<input checked="" type="checkbox"/> Norway	<input checked="" type="checkbox"/> USA	<input checked="" type="checkbox"/> Japan
<input checked="" type="checkbox"/> Germany	<input checked="" type="checkbox"/> United Kingdom	<input checked="" type="checkbox"/> Sweden	<input checked="" type="checkbox"/> Israel	<input type="checkbox"/>
<input checked="" type="checkbox"/> Denmark	<input checked="" type="checkbox"/> Ireland	<input checked="" type="checkbox"/> Group Differences	<input checked="" type="checkbox"/> Australia	<input type="checkbox"/>
<input checked="" type="checkbox"/> Spain	<input checked="" type="checkbox"/> Korea	<input checked="" type="checkbox"/> Canada	<input checked="" type="checkbox"/> New Zealand	<input type="checkbox"/>
<input checked="" type="checkbox"/> <b>The product fulfils the requirements of</b> DIN EN 60950-1 (VDE 0805-1):2014-08 EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013 IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013				

**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.



<b>Test item particulars</b> .....:	
<b>Equipment mobility</b> .....:	<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
<b>Connection to the mains</b> .....:	<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
<b>Operating condition</b> .....:	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
<b>Access location</b> .....	<input type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
<b>Over voltage category (OVC)</b> .....	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input checked="" type="checkbox"/> OVC IV <input type="checkbox"/> other: DC supplied
<b>Mains supply tolerance (%) or absolute mains supply values</b> .....	N/A; not directly connected to the mains.
<b>Tested for IT power systems</b> .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>IT testing, phase-phase voltage (V)</b> .....	N/A
<b>Class of equipment</b> .....	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input checked="" type="checkbox"/> Not classified
<b>Considered current rating of protective device as part of the building installation (A)</b> .....	N/A
<b>Pollution degree (PD)</b> .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
<b>IP protection class</b> .....	N/A
<b>Altitude during operation (m)</b> .....	≤ 2000 m
<b>Altitude of test laboratory (m)</b> .....	app. 105 m
<b>Mass of equipment (kg)</b> .....	Max. 0.088 kg

<b>Possible test case verdicts:</b>	
- 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)
<b>Testing</b> .....:	
<b>Date of receipt of test item</b> .....	No tests performed, only typing error corrections.
<b>Date (s) of performance of tests</b> .....	No tests performed, only typing error corrections.
<b>General remarks:</b>	
"(See Enclosure #)" 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.	

<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60950-1:</b>			
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 .....	<input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>Not applicable</b>		
<b>When differences exist; they shall be identified in the General product information section.</b>			
<b>Name and address of factory (ies) .....</b> : TDK-Lambda American Inc. 3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA  TDK-Lambda Malaysia, PL033 Kawasan Perindustrian Senai, Locked Bag No.110, 81400 SENAI, JOHOR, Malaysia			
<b>General product information:</b>			
The products are component type DC/DC power modules, intended to be used as a component in an end-user's power system. These device are DC-DC power supply with open frame for building-in			
<b>Abbreviations used in the report:</b>			
- normal conditions	<b>N.C.</b>	- single fault conditions	<b>S.F.C</b>
- functional insulation	<b>OP</b>	- basic insulation	<b>BI</b>
- double insulation	<b>DI</b>	- supplementary insulation	<b>SI</b>
- between parts of opposite polarity	<b>BOP</b>	- reinforced insulation	<b>RI</b>
<b>Indicate used abbreviations (if any)</b>			



Information to test report reference No. :	<b>242708-TL4-1</b>		
VDE Test- and Certification Institute GmbH Merianstrasse 28  D - 63069 Offenbach	DIN EN 60950-1 (VDE 0805-1):2014-08 EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013 IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013		
Test item description:	Power supply for IT-Equipment / DC/DC-Converter		
Made by :	TDK-Lambda Americas Inc.		
Trade mark :	Refer to page 2		
Model/type ref. :	Refer to page 2		
Rated :	Refer to page 2		
Commission received from	Steve Mckitrick	Date:	2017-12-06
<b>Modification on the appliance:</b>			
1.	Adding of type key in CB certificate.		

<b>Test Report History:</b>			
This report may consist of more than one report and is valid only with additional or previous issued reports:			
Date: (jjjj-mm-dd)	VDE-Certificate: CB-Ref. No.:	VDE File No.: Test Report Number	Modifications:
2017-12-19	40045074 CB DE1-57533/A2	242708-TL4-1	Additional test report (this report) Adding of type key in CB certificate.
2017-10-10	40045074 CB DE1-57533/A1	242708-CI3-1	Additional test report Corrections of typing errors.
2016-09-06	40045074 CB DE1-57533	228393-CI3-1	Original Test Report First testing