

Test Report issued under the responsibility of:



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

Report Number: 1509790STO-001
 Date of issue: 14 September 2015
 Total number of pages: 88 pages

Applicant's name: TDK-Lambda Corporation
 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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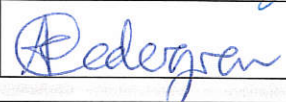
This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

TEST REPORT issued by an Accredited Testing Laboratory. Accredited by Swedac, no 1003, ISO/IEC 17025.

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.

Test item description	AC-DC Converters
Trade Mark	TDK-Lambda
Manufacturer	TDK-Lambda Corporation
Model/Type reference	PFE300*~**, PFE500*~**, PFE700*~**, PFE500S-48/ECO (see also "Models" page 4)
Ratings	AC input: 100-240V~, 5-11A, 50/60Hz DC output: 12-51V [□] , 6.3-42A (see also "Models" page 4)

Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	Intertek Semko AB
Testing location/ address		Torshamnsgatan 43, P.O. Box 1103, SE-164 22 Kista, SWEDEN
<input type="checkbox"/>	Associated CB Testing Laboratory:	
Testing location/ address		
Tested by (name + signature).....		Bedran Nergiz 
Approved by (name + signature)		Anna Karin Cedergren 
<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).....		

Summary of testing:	
Tests performed (name of test and test clause): See test report	Testing location: See page 2
Summary of compliance with National Differences: <input checked="" type="checkbox"/> The product fulfils the requirements of EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013. Group- and national differences for the CENELEC countries have been considered during the testing.	
Copy of marking plate: (example) 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.	

Models included within the scope of this report				
Model	Input, AC		Output, DC	
	V	A _{max}	V	A _{max}
-				
PFE300-12	100-240	5	12	25
PFE300-28	100-240	5	28	10.8
PFE300-48	100-240	5	48	6.3
PFE300S-12	100-240	5	12	25
PFE300S-28	100-240	5	28	10.8
PFE300S-48	100-240	5	48	6.3
PFE500-12	100-240	7	12	33
PFE500-28	100-240	8	28	18
PFE500-48	100-240	8	48	10.5
PFE500S-12	100-240	7	12	33
PFE500S-28	100-240	8	28	18
PFE500S-48	100-240	8	48	10.5
PFE500F-12	100-240	8	12	42
PFE500F-28	100-240	8	28	18
PFE500F-48	100-240	8	48	10.5
PFE700-48	100-240	11	51	14
PFE700S-48	100-240	11	51	14
PFE500S-48/ECO	100-240	8	48	7.2

All models may include suffix /T which indicates no threads in the corner studs.
 All models may include suffix /FG which indicates the removal of secondary to earth capacitors to allow an electric strength test of 1500Vdc between the secondary output and earth.
 Any combination of suffix maybe used.

Test item particulars.....:	
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 type="checkbox"/> restricted access location <input checked="" type="checkbox"/> for building into a host equipment
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" 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	± 10% (By request of the manufacturer)
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 checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A)	16
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)	<2000
Altitude of test laboratory (m)	<2000
Mass of equipment (kg)	<1kg
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.....	See "General remarks" below
Date of receipt of test item.....	-
Date (s) of performance of tests.....	-
General remarks:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. The test results and all data in this report are derived from previously issued Test Report No. 1017657 dated 8 August 2010, Test Report No. 1116717 dated 20 June 2011 and Test Report No. 1218116 dated 22 August 2012, issued by Intertek Semko AB. A new report has been issued due to update of the standard IEC 60950-1, to include Am 2: 2013. No additional test has been conducted. Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	

Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60950-1:	
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"/> Yes <input type="checkbox"/> Not applicable
When differences exist; they shall be identified in the "General product information" section.	
Name and address of factories..... : TDK-Lambda (Malaysia) Sdn. Bhd. PLO33 Locked Bag No. 110 Kawasan Perindustrian Senai 81400 Senai Johor, Darul Takzim, MALAYSIA TDK-Lambda Corporation Nagaoka Technical Center 2704-1 Settaya-machi, Nagaoka, Niigata 940-1195, JAPAN Wuxi TDK-Lambda Electronics Co., Ltd. No.6 Xing Chuang Er lu Wuxi Jiangsu, 214028, CHINA	
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)	

This Test Report replaces previously issued, see table below.

REVISION TABLE

Date	Report ref.	Clause	Modification of the appliance
14 Sept. 2015	1509790STO-001	-	Basic Test Report

General Product Information:

- a. This product is an AC to DC power module converter.
- b. As a component part, compliance with the standard will be based upon installation in the final application. This product must be installed within a host equipment. These AC to DC converters have reinforced insulation between the input and the output. The outputs of these products are energy hazards. All models with an output greater than 28V are considered to be non-SELV. As such, the instructions for use must refer to these energy hazardous outputs and non-SELV outputs in that the outputs must not be accessible to the operator. The installer must also provide protection against inadvertent contact by a service engineer.
- c. All dynamic testing was conducted with the units loaded to their specified output current. All external components were fitted in accordance with the manufacturers instructions.
- d. These products, with the exception of the PFE500F-12, can be used in any orientation providing the baseplate temperature does not exceed 100°C and is subject to a derating curve. The PFE500F-12 has a maximum baseplate temperature of 85°C. This temperature limit governs the maximum working ambient temperature.
- e. The input and output connectors are not acceptable for use as field wiring terminals.
- f. The baseplate must be properly bonded to the main protective earthing contact in the end use product.
- g. The recommended input fuse rating is as follows: - F15AH, 250V. The breaking capacity and voltage rating of this fuse may be subject to the end use application.
- h. To maintain the SELV output under fault conditions for outputs less than 28V, the output must be connected to earth in the final application.