Test Report issued under the responsibility of:

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

Report Reference No ..... :	E122103-A188-CB-1
Date of issue ..... :	2015-07-06
Total number of pages ..... :	59
CB Testing Laboratory ..... :	UL International Singapore Pte Ltd
Address ..... :	20 Kian Teck Lane, #01-00PT, 627854 Singapore
Applicant's name ..... :	TDK-LAMBDA CORP
Address ..... :	NAGAOKA TECHNICAL CENTER R&D DIV 2704-1 SETTAYA-MACHI NAGAOKA-SHI NIIGATA 940-1195 JAPAN
Test specification:	
Standard ..... :	IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1F
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2014-02

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.

Test item description ..... :	Switching Power Supply
Trade Mark ..... :	TDK·Lambda
Manufacturer ..... :	TDK-LAMBDA CORP NAGAOKA TECHNICAL CENTER R&D DIV 2704-1 SETTAYA-MACHI NAGAOKA-SHI NIIGATA 940-1195 JAPAN
Model/Type reference ..... :	ZWD150PAF-0524x, where x = blank, /J, /L, /T, /A, /FG, /CO, /FGCO, /LCO,/LFG, /LFGCO, /ACO, /AFG, /AFGCO, /JCO, /JFG, /JFGCO, /JL, /JLCO, /JLFG, /JLFGCO, /JA, /JACO, /JAFG, /JAFGCO, /TCO,/TFG,/TFGCO, /TL, /TLCO, /TLFG, /TLFGCO, /TA,/TACO,/TAFG,/TAFGCO.
Ratings ..... :	I/P: 100-240 Vac, 50/60 Hz, 2.0 A O/P: 5 Vdc, 5.0 A; 24 Vdc, 6.0 A.

Testing procedure and testing location:		
[x]	**CB Testing Laboratory**	
	Testing location / address .....:	UL International Singapore Pte Ltd 20 Kian Teck Lane, #01-00PT, 627854 Singapore
[ ]	**Associated CB Test Laboratory**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	Tetsuo Iwasaki
	Approved by (name + signature)....:	Masatomo Takiyama
[ ]	**Testing Procedure: TMP/CTF Stage 1**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Approved by (name + signature)....:	
[ ]	**Testing Procedure: WMT/CTF Stage 2**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Witnessed by (name + signature) ..:	
	Approved by (name + signature)....:	
[ ]	**Testing Procedure: SMT/CTF Stage 3 or 4**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Approved by (name + signature)....:	
	Supervised by (name + signature) .:	
[ ]	**Testing Procedure: RMT**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Approved by (name + signature)....:	
	Supervised by (name + signature) .:	

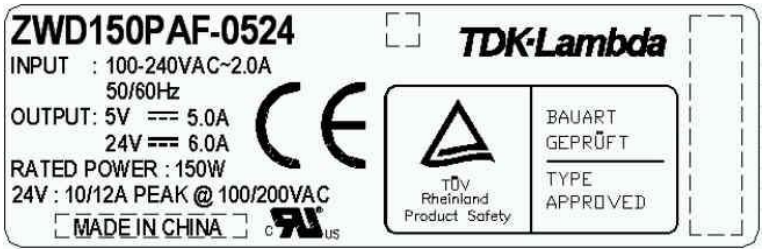
List of Attachments
National Differences (48 pages)
Enclosures (16 pages)
Summary of Testing:
No tests were conducted
Summary of Compliance with National Differences:
Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AT, BE, BG, BY, CA, CH, CN, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IL, IT, JP, KR, NL, NO, PL, PT, RO, SE, SG, SI, SK, UA, US

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

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.



Test item particulars :	
Equipment mobility ..... :	for building-in
Connection to the mains ..... :	for building-in
Operating condition ..... :	continuous
Access location ..... :	To be evaluated in end product
Over voltage category (OVC) ..... :	OVC II
Mains supply tolerance (%) or absolute mains supply values ..... :	+10%, -10% (manufacturer declared)
Tested for IT power systems ..... :	No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	Class I (earthed)
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 2000
Altitude of test laboratory (m) ..... :	less than 2000 meters
Mass of equipment (kg) ..... :	0.55 kg
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(s) of receipt of test item ..... :	2013-08-15
Date(s) of Performance of tests ..... :	2013-08-15, 2013-09-13
General remarks:	
"(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 point is used as the decimal separator.	
Manufacturer's Declaration per Sub Clause 4.2.5 of IECEE 02:	Yes
The application for obtaining a CB Test Certificate includes more than one factory 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 ..... When differences exist, they shall be identified in the General Product Information section.	
Name and address of Factory(ies):	TDK-LAMBDA MALAYSIA SDN BHD LOT 2 & 3, BATU 9 3/4 KAWASAN PERINDUSTRIAN BANDAR BARU JAYA GADING 26070 KUANTAN MALAYSIA

WUXI TDK-LAMBDA ELECTRONICS CO LTD
NO 6
XING CHUANG ER LU
WUXI
JIANGSU 214028 CHINA

SENDAN ELECTRONICS MFG CO LTD
1010 HABUSHIN
NANTO-SHI TOYAMA-KEN
939-1756 JAPAN

GENERAL PRODUCT INFORMATION:

Report Summary

All applicable tests according to the referenced standard(s) have been carried out.

Product Description

The product is a power supply for building-in.

Model Differences

- All Models are identical except for the Model designation.

Options Description:
a) Connector Type,
- "Blank" with Molex Connector
- "J" with JST Connector
- "T" with Terminal Block

b) Different metal chassis,
- "L" with L-shape metal plate type
- "A" with L-shape metal plate and cover

c) "FG" with low leakage current (not affecting safety)
d) "CO" with coating (not affecting safety)

Additional Information

This report is a re-issued report of CB Test Report Ref. No. E122103-A166-CB-1 (Original) due to following modification.

- Upgrade Standard.
- Addition of alternate Primary Connector (CN1) (Optional), Type 5273.

No tests were considered necessary on the above minor modifications because of engineering judgment that the modifications do not have negatively impact to previous test results.

Based on the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, has been determined that the product continues to comply with the standard.

No tests were conducted under this investigation because the original CB Test Report Ref. No. E122103-A166-CB-1 was due to transfer of CB Test Report Ref. No. E252373-A24-CB-3. All required tests were

carried out under the original investigation.

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: The ambient temperature is specified for air forced cooling at 60°C; , The ambient temperature is specified for convection cooling at 50°C.
- The product is intended for use on the following power systems: TN
- 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).

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- The equipment had been tested with an external DC cooling fan providing an airflow of 0.7 m/s. --
- The following Production-Line tests are conducted for this product: Electric Strength, Earthing Continuity --
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Transformer, T1: Primary-SELV: 232 Vrms, 380 Vpk; , Transformer, T2: Primary-SELV: 172 Vrms, 572 Vpk, --
- The following secondary output circuits are SELV: +5 Vdc and +24 Vdc, --
- The following secondary output circuits are at hazardous energy levels: +24 Vdc --
- The following secondary output circuits are at non-hazardous energy levels: +5 Vdc --
- The power supply terminals and/or connectors are: Suitable for factory wiring only --
- 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 B), T2 (Class F), --
- The following end-product enclosures are required: Mechanical, Electrical, Fire --

Abbreviations used in the report:

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

Indicate used abbreviations (if any)