



Test Report issued under
the responsibility of:



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

Report Reference No	3212196
Date of issue	2016-07-28
Total number of pages	17
CB Testing Laboratory	UL Japan, Inc.
Address	4383-326 Asama-cho, Ise-shi, Mie, 516-0021, Japan
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

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Test item description	: Built-in Power Supply
Trade Mark	: 
Manufacturer	: TDK-LAMBDA CORP NAGAOKA TECHNICAL CENTER R&D DIV 2704-1 SETTAYA-MACHI NAGAOKA-SHI NIIGATA 940-1195 JAPAN
Model/Type reference	: ZWS240BP-abcdef (a = 24, 36, 48, b = "/" or blank, c = T or blank, d = R or blank, e = A, L or blank, f = CO2, FG or blank), ZWS240BP-48/SE52P
Ratings	: Model: ZWS240BP-abcdef Input: 100-240VAC, 50-60Hz, 3.1A or 3.9A (depending on the output current) Output: (See Enclosure Id 7-08.) Model: ZWS240BP-48/SE52P Input: 200-240 VAC, 50-60 Hz, 1.6 A Output: See Enclosure Id. 7-12 for details.

Testing procedure and testing location:	
<input checked="" type="checkbox"/> CB Testing Laboratory	Testing location / address: UL Japan, Inc. 4383-326 Asama-cho, Ise-shi, Mie, 516-0021, Japan
<input type="checkbox"/> Associated CB Test Laboratory	Testing location / address:
	Tested by (name + signature): Toshiyuki Suzuki, Project Handler
	Approved by (name + signature).....: Tetsuo Iwasaki, Reviewer
	<i>Toshiyuki Suzuki</i>
	Tetsuo Iwasaki
<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):
	Approved by (name + signature).....:
	Supervised by (name + signature) .:
<input type="checkbox"/> Testing Procedure: RMT	Testing location / address:
	Tested by (name + signature):
	Approved by (name + signature).....:
	Supervised by (name + signature) ..:

List of Attachments
National Differences (0 pages)
Enclosures (2 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: AR, AT, AU, BE, BY, CA, CH, CN, CZ, DE, DK, ES, EU, FI, FR, GB, HU, IL, IT, JP, KR, MY, NL, NO, NZ, PL, SA, 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 - Refer to Enclosure titled Marking Plate for copy.

Test item particulars :	
Equipment mobility	for building-in
Connection to the mains	not directly connected to the mains
Operating condition	continuous
Access location	N/A
Over voltage category (OVC)	OVC II
Mains supply tolerance (%) or absolute mains supply values	+10%, -10%
Tested for IT power systems	Yes
IT testing, phase-phase voltage (V)	230 V (for Norway)
Class of equipment	Class I (earthed)
Considered current rating of protective device as part of the building installation (A)	20 A
Pollution degree (PD)	PD 2
IP protection class	IP X0
Altitude of operation (m)	up to 3000 m
Altitude of test laboratory (m)	less than 2000 meters
Mass of equipment (kg)	approximately 0.52
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	N/A
Date(s) of Performance of tests	N/A
General remarks:	
<p>"(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a 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 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

When differences exist, they shall be identified in the General Product Information section.

Name and address of Factory(ies):	<p>TDK-LAMBDA CORP NAGAOKA TECHNICAL CENTER 2704-1 SETTAYA-MACHI NAGAOKA-SHI NIIGATA 940-1195 JAPAN</p> <p>TDK-LAMBDA MALAYSIA SDN BHD PLO33 KAWASAN PERINDUSTRIAN SENAI 81400 SENAI MALAYSIA</p> <p>TDK-LAMBDA MALAYSIA SDN BHD LOT 2 & 3, BATU 9 3/4 KAWASAN PERINDUSTRIAN BANDAR BARU JAYA GADING 26070 KUANTAN MALAYSIA</p> <p>WUXI TDK-LAMBDA ELECTRONICS CO LTD NO 6 XING CHUANG ER LU WUXI JIANGSU 214028 CHINA</p> <p>ZHANGJIAGANG HUA YANG ELECTRONICS CO LTD TONGXIN RD ZHAOFENG ECONOMIC DEVELOPMENT ZONE LEYU TOWN ZHANGJIAGANG JIANGSU 215622 CHINA</p> <p>ALPS LOGISTICS FACILITIES CO LTD 593-1 NISHIOHASHI TSUKUBA-SHI IBARAKI-KEN 305-0831 JAPAN</p>
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GENERAL PRODUCT INFORMATION:**Report Summary**

The original report was modified on 2016-07-28 to include the following changes/additions:
This report is only valid in conjunction with CB Test Report Ref. No. 4786910621-2 and 4787503659

Amendment 2 is to cover the following:

- Update of Model Differences in Enclosure (Id#: 7-08)
- Correction of Table 4.5 due to typo.

No test was considered necessary because there was no change in construction.

Product Description

The product is a switching power supply intended for building in to an end product.

Model Differences

Nomenclature; ZWS240BP-abcdef

(a = 24, 36, 48. b = "/" or blank. c = T or blank, d = R or blank. e = A, L or blank. f = CO2, FG or blank)

a; output voltage as above

b; (separator)

c; type of input connector

d; remote control

e; A = with covers on both component side and solder side,

L = with cover on solder side

f; CO2 = coating of both sides of PWB for functional purpose,

FG = low leakage current

Suffixes b, d and f are not safety relevant.

Model ZWS240BP-48/SE52P is identical to Model ZWS240BP-48 except for Input rating and Output rating.

Refer to Enclosure id 7-08 and 7-12 for detail.

Additional Information

In addition, following National Differences were considered:

- Russian Federation (RU)**,
- Turkey (TR)**,
- Serbia (RS)**.

Note) **: Only Group Differences.

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of: See Enclosure Ids. 7-01 and 7-12 (Output Derating Curve) and 7-07 (Output Derating Curve for Additional Forced Air Condition) for details.
- The product is intended for use on the following power systems: TN, IT (for Norway)

- 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 end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-Earthed Dead Metal: 250 Vrms, 420 Vpk, Primary-SELV: 274 Vrms, 621 Vpk [For models other than model ZWS240BP-48/SE52P].
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-Earthed Dead Metal: 250 Vrms, 420 Vpk, Primary-SELV: 254 Vrms, 712 Vpk [For model ZWS240BP-48/SE52P]
- The following secondary output circuits are SELV: All output
- The following secondary output circuits are at hazardous energy levels: All output
- 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
- 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): T2 (Class F)
- The following end-product enclosures are required: Fire, Electrical

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)