



Test Report issued under the responsibility of:



TEST REPORT
IEC 61010-1
Safety requirements for electrical equipment for measurement,
control, and laboratory use
Part 1: General requirements

Report Number. : 31581223.001

Date of issue : May 13, 2015

Total number of pages : 192

Applicant's name : TDK-Lambda Ltd.

Address : 56 Haharoshet St., P.O.B. 500 Karmiel Industrial Zone Karmiel
2161401, Israel

Test specification:

Standard : IEC 61010-1:2010 (Third Edition)

Test procedure : CB Scheme

Non-standard test method : N/A

Test Report Form No. : IEC61010_1J

Test Report Form(s) Originator : VDE Testing and Certification Institute

Master TRF : 2013-11

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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 item description : Programmable power supply

Trade Mark : TDK-Lambda, **TDK-Lambda**


Manufacturer : TDK-Lambda Ltd., 56 Haharoshet St., P.O.B. 500 Karmiel Industrial Zone Karmiel 2161401, Israel

Model/Type reference : 1. ZUP200 series; 2. ZUP400 series; 3. ZUP800 series
configuration code: ZUPxxx-yyy, with
xxx=any number between 006 to 120 (ZUP200, ZUP400), 06-60 (for ZUP800)
yyy=any number between 1.8 to 66 (ZUP200, ZUP400), 14 to 132 (for ZUP800)

Ratings : Input:
1: ~100-240V, 4A, 50/60Hz;
2: ~100-240V, 7A, 50/60Hz;
3: ~100-240V, 12A, 50/60Hz;

Output:

1. ZUP200: from 0-6VDC/0-33A to 0-120VDC/0-1.8A, 220W max.
2. ZUP400: from 0-6VDC/0-66A to 0-120VDC/0-3.6A, 432W max.
3. ZUP800: from 0-6VDC/0-132A to 0-60VDC/0-14A, 864W max.

Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	TUV Rheinland of North America
Testing location/ address		12 Commerce Road, Newtown, CT 06470, USA
<input type="checkbox"/>	Associated CB Laboratory:	
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: TMP	
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: WMT	
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name + signature)		
Approved by (name + signature)		
<input checked="" type="checkbox"/>	Testing procedure: SMT	
Testing location/ address		56 Haharoshet St., P.O.B. 500 Karmiel Industrial Zone Karmiel 2161401, Israel
Tested by (name + signature) :		Valery Rodionov 
Approved by (name + signature)		Jameel Armstrong
Supervised by (name + signature)		Rahul Mehta
<input type="checkbox"/>	Testing procedure: RMT	
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
Supervised by (name + signature)		

List of Attachments (including a total number of pages in each attachment)		
Document No.	Documents included / attached to this report (description)	Page No.
TABLE 1	List of safety relevant components	103
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Documents referenced by this report (available on request):		
Document Name or No.	Documents description	Page No.

Summary of testing:

Summary of testing:

The measurements recorded in this Report only relate to the tested items detailed on the first page of this Report and demonstrate conformity with the stated specifications. The items tested were selected by the manufacturer as the worst case representative samples of the product group detailed in the first page of this Report, with which it has design and constructional similarity and a commonality of materials and components.

The following power supplies were supplied as a representative sample of the ZUP200(1), ZUP400 (2) and Z800 (2) series:

1. ZUP6-33, ZUP120-1.8
2. ZUP6-66, ZUP120-3.6(*)
3. ZUP6-132(*), ZUP60-14

Models ZUP6-33, ZUP120-1.8, ZUP6-66 and ZUP60-14 subjected to partial testing to define worst case models (*) for full testing.

Although the Standard requires testing for a 40° C ambient temperature the representative samples are rated for a maximum ambient operating temperature of 50° C and therefore were tested at this higher temperature.

Test Report History:	
This report may consist of more than one report and is valid only with additional or previous issued reports:	
Ref. No.	Item
31581223.001	Original CB Report
Tests performed (name of test and test clause): 4.4.2.2 Single fault – protective conductor 4.4.2.7 Single fault – transformers (short / overload) 4.4.2.8 Single fault – outputs short 4.4.2.10 Single fault – cooling -ventilation openings blocked -fan(s) stopped 4.4.2.12 Single fault – bridging of basic insulation 5.1.3 Mains supply 5.3 Durability of markings 6 Values in normal condition (6.1.1 / 6.3.1) 6.3 Discharge tests (6.6.2 / 6.10.3c) 6.3.2 b) Accessible Current 6.5.2./4 Bonding impedance of equipment 6.8 Dielectric strength tests + humidity 7.4 Stability tests 8.2.1 Static test 8.2.2 Dynamic test 8.3 Drop test 10.1, 10.2, 10.3 Temperature measurements 10.5.2 Resistance to heat of non-metallic enclosures Annex D Working voltages & Creepage and Clearances	Testing location: 56 Haharoshet St., P.O.B. 500 Karmiel Industrial Zone Karmiel 2161401, Israel
Summary of compliance with National Differences List of countries addressed: CH (Switzerland), CA (Canada), US (United States)	
<input checked="" type="checkbox"/> The product fulfils the requirements of: IEC 61010-1: 2010 (3rd Edition)	

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.

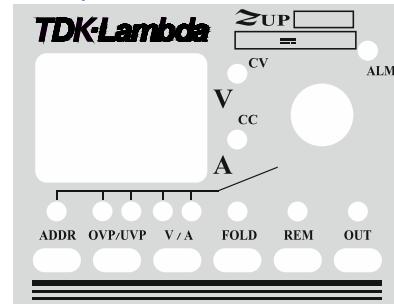
Copy of marking plate:

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.

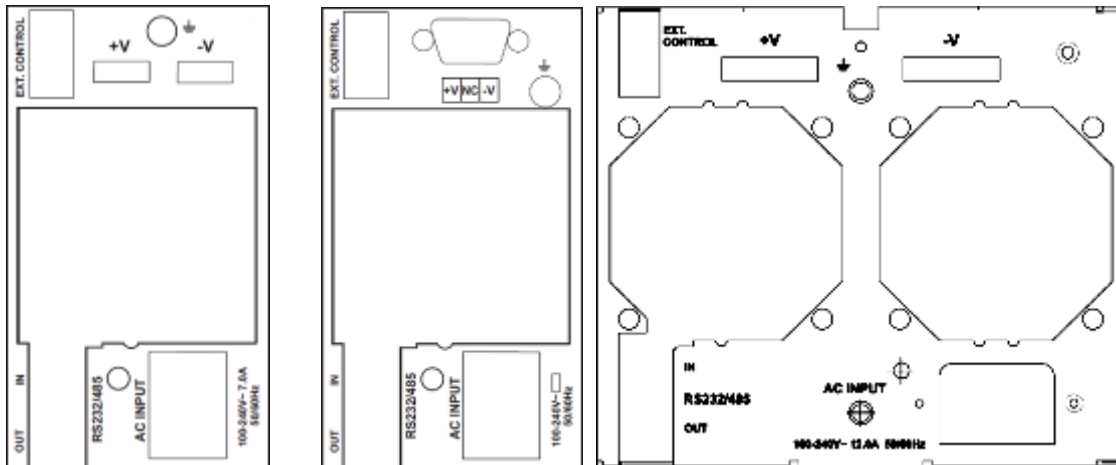
Main label



Front panel

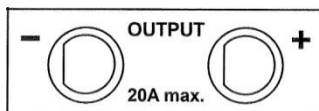


Rear panel (AC rating, markings)



ZUP200/400 LV ZUP200/400 HV ZUP800

Lab. option front panel



Test item particulars:	
Type of item	Laboratory
Description of equipment function	
Connection to MAINS supply	Detachable cord set
Overvoltage category	II
POLLUTION DEGREE	2
Means of protection	Class I (PE connected)
Environmental conditions	Extended: max. ambient-50°C, altitude-3000m
For use in wet locations	No
Equipment mobility	Portable
Operating conditions	Continuous
Overall size of equipment (W x H x D)	ZUP200/ZUP400: 70x124x350 (mm) ZUP800: 140x124x350 (mm)
Mass of equipment (kg)	ZUP200: ~2.9kg ZUP400: ~3.2kg ZUP800: ~5.8kg
Marked degree of protection to IEC 60529	Not marked, IPX0
Possible test case verdicts:	
- Test case does not apply to the test object	N/A (Not Applicable)
- Test object does meet the requirement	P (Pass)
- Test object does not meet the requirement	F (Fail)
Testing:	
Date of receipt of test item	March 06, 2015
Date (s) of performance of tests	March 06, 2015 - April 28, 2015
General remarks:	
<p>SMT was checked as the report template does not include a selection for CTF Stage 3, but the testing location is registered as CTF Stage 3</p> <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 testing laboratory.</p> <p>"(see ENCLOSURE #)" refers to additional information appended to the report.</p> <p>"(see Form A.xx)" refers to a table appended to the report.</p> <p>Bottom lines for measurement tables Form A.xx are optional if used as record.</p> <p>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 60529:	
<p>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.....</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable</p>	
When differences exist; they shall be identified in the general product information section.	
Name and address of factory (ies): TDK-Lambda Ltd., 56 Haharoshet St., P.O.B. 500 Karmiel Industrial Zone Karmiel 2161401, Israel	

General product information:

Description of unit:

ZUP200 series, ZUP400 series and ZUP800 series are family of switching mode programmable power supplies.

All series are Class I product and intended for:

- Indoor use;
- Overvoltage Category II;
- Pollution Degree 2;
- Max. altitude 3000m;
- Max. ambient 50°C.

ZUP200 and ZUP400 series have identical mechanical and electrical construction.

ZUP800 have wide enclosure and constructed of two identical ZUP400 series AC-DC modules.

Description of model differences.

ZUP200 series, ZUP400 series and ZUP800 series Configuration Code: ZUPxxx-yyy

where:

ZUP200/ZUP400:

xxx = max. output voltage, may be any between 6 and 120;

yyy = max. output current, may be any between 66 and 1.8;

ZUP800:

xxx = max. output voltage, may be any between 6 and 60;

yyy = max. output current, may be any between 132 and 14.

Description of special features.

(HV circuits, high pressure systems etc.)

ZUP200/ZUP400/ZUP800 models with rated output voltage up to 60VDC may be equipped with Lab. option module intended to provide output on the front side.

Lab. option module consists of metal chassis with output leads routed to front side with two terminal posts on the front side.