TÜV Rheinland (China) Ltd.
Member of TÜV Rheinland Group

TÜVRheinland®
Precisely Right.

Shenzhen Yinghuiyuan Electronics
Co., Ltd.

Date : 05.02.2016
Our ref. : HLH ZJ
Your ref.: 174043917

3F A Building NongDian Industrial
Park, East of Baishixia
FuYong Town, BaoAn District
SHENZHEN 518103
P.R. China

Ref : CB Certificate Japan

Type of Equipment : Switching Adapter
Model Designation : See Certificate
Certificate No. : JPTUV-069596
Report No. : 16072960 001

Dear Ladies and Gentlemen,

Thank you very much for your interest in our services.

Please find enclosed your certification documents.

We appreciate your support and would like to offer our assistance in the approval of your future products through our extensive range of technical services.

Please feel free to contact us whatever your requirements may be.

With kind regards,

Certification Body

Martin Wang

CC: Shenzhen Yinghuiyuan

Enclosure

TÜV Rheinland (China) Ltd.
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Ref. Certif. No.

JPTUV-069596

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Switching Adapter
Name and address of the applicant Nom et adresse du demandeur	Shenzhen Yinghuiyuan Electronics Co., Ltd. 3F A Building NongDian Industrial Park, East of Baishixia, FuYong Town, BaoAn District, SHENZHEN 518103, P.R. China
Name and address of the manufacturer Nom et adresse du fabricant	Shenzhen Yinghuiyuan Electronics Co., Ltd. 3F A Building NongDian Industrial Park, East of Baishixia, FuYong Town, BaoAn District, SHENZHEN 518103, P.R. China
Name and address of the factory Nom et adresse de l'usine	Shenzhen Yinghuiyuan Electronics Co., Ltd. 3F A Building NongDian Industrial Park, East of Baishixia, FuYong Town, BaoAn District, SHENZHEN 518103, P.R. China
Ratings and principal characteristics Valeurs nominales et charactéristiques principales	Input: AC 100-240V, 50-60Hz, 2.5A; Class I Output: refer to the test report.
Trademark (if any) Marque de fabrique (si elle existe)	Trademark of Shenzhen Yinghuiyuan Electronics Co., Ltd(logo)
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	N/A
Model / Type Ref. Ref. de type	YHY-ab (a, b = refer to the test report.)
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire, peuvent être indiqués sur la 2ème page)	For model difference, refer to the test report.
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1:2005+A1+A2 National differences see test report
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	16072960 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

TÜVRheinland®

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Global Technology Assessment Center
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Date: 05.02.2016

Signature: Martin Wang

Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT

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

Report Number. ..... :	16072960 001
Date of issue ..... :	Feb., 05, 2016
Total number of pages ..... :	54 Pages
Applicant's name ..... :	Shenzhen Yinghuiyuan Electronics Co., Ltd.
Address ..... :	3F A Building NongDian Industrial Park, East of Baishixia, FuYong Town, BaoAn District, SHENZHEN 518103, P.R. China
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 2014-06

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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.

Test item description.....:	Switching Adapter
Trade Mark .....:	
Manufacturer .....:	Same as applicant
Model/Type reference.....:	YHY-ab (a, b are variables, details see model list on page 8)
Ratings.....:	Input: 100-240V~, 50-60Hz, 2.5A; Output: see model list on page 8

Testing procedure and testing location:		
☒ CB Testing Laboratory:	TÜV Rheinland (Guangdong) Ltd.	
Testing location/ address ..... :	No.199 Kezhu Road, Guangzhou Science City 510663 Guangzhou, CHINA	
☐ Associated CB Testing Laboratory:		
Testing location/ address ..... :		
Tested by (name + signature) ..... :	Liheng Hu	
Approved by (name + signature) ..... :	Barry He	
☐ 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) ..... :		
Witnessed by (name + signature) ..... :		
Approved by (name + signature) ..... :		
Supervised by (name + signature) ..... :		

List of Attachments (including a total number of pages in each attachment):

- Attachment 1: National differences (65 pages)
- Attachment 2: Photo documentation (14 pages)

Summary of testing:

Tests performed (name of test and test clause):

Clause(s)	Test(s)
1.6.2	Input Current Test
1.7.11	Durability of Marking Test
2.1.1.1	Access to energized parts
2.1.1.5	Energy Hazard in Operator Access Area
2.1.1.7	Discharge of Capacitors
2.2.2	SELV limits for Normal Conditions
2.2.3	SELV limits for Abnormal Conditions
2.4.2	Limited Current Circuits
2.6.3.4	Ground Continue Test
2.9.2	Humidity Conditioning
2.10.2	Working Voltage over Insulation
2.10.3 & 2.10.4	Clearance and creepage distance measurements
4.1	Stablility Test
4.2.2	Steady force test 10N
4.2.4	Steady force test 250N
4.2.5	Impact Test
4.2.6	Drop Test
4.2.7	Stress relief test
4.5.2	Maximum Temperature Test
5.1.6	Touch Current Test
5.2	Electric Strength Test
5.3	Fault Condition Test

Remark:

The models YHY-12010000 and YHY-24005000 were selected for all the tests.

Testing location:

TÜV Rheinland (Guangdong) Ltd.

No.199 Kezhu Road, Guangzhou Science City 510663 Guangzhou, CHINA

Summary of compliance with National Differences:

List of countries addressed

Summary of compliance with National Differences to IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013 (for explanation of codes see below):

EU Group Differences, EU Special National Conditions, AT, CA, DK, IT, SE, US

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

Additional National Differences to IEC 60950-1:2005 (2nd Edition)+Am 1:2009 (for client's requirement):

AU, DE, FI, GB, IL, KR, SI

☒ The product fulfils the requirements of EN 60950-1:2006+A11:2009+A1:2010+A12:2011

Additional National Differences to IEC 60950-1:2005 (2nd Edition) (for client's requirement):

CH, CN, ES, IE, NO

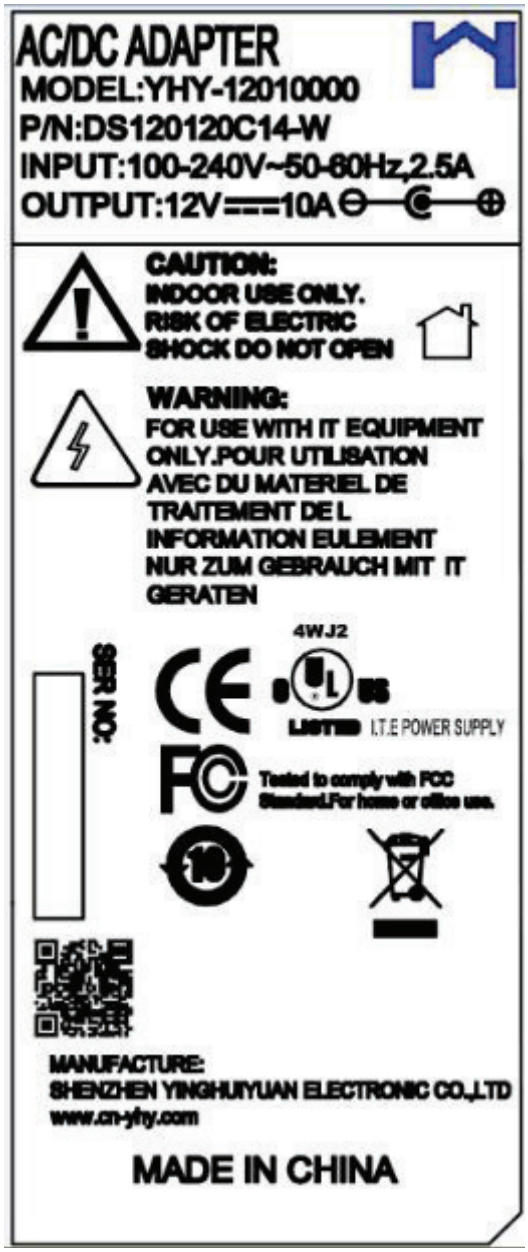
☒ The product fulfils the requirements of EN 60950-1:2006+A11:2009

Explanation of used codes: AT=Austria, AU=Australia, CA=Canada, CH=Switzerland, CN=China, DE=Germany, DK=Denmark, ES=Spain, FI=Finland, GB=United Kingdom, IE=Ireland, IL=Israel, IT=Italy, KR=Republic of Korea, NO=Norway, SE=Sweden, SI=Slovenia, US=United States of America.

All national differences see corresponding pages.

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.



Note: This is a representative label, the other models are identical to it except for the model name and output rating.

Test item particulars .....:	
Equipment mobility.....:	[X] movable [] hand-held [X] transportable [] stationary [] for building-in [] direct plug-in
Connection to the mains.....:	[X] pluggable equipment [X] type A [] type B [] permanent connection [X] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition.....:	[X] continuous [] rated operating / resting time:
Access location .....:	[X] operator accessible [] restricted access location
Over voltage category (OVC) .....:	[] OVC I [X] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values .....:	+ 10% / - 10% (as client's request)
Tested for IT power systems .....:	[] Yes [X] No
IT testing, phase-phase voltage (V) .....:	230 (only for Norway)
Class of equipment .....:	[X] Class I [] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) .....:	16A (13A for UK)
Pollution degree (PD) .....:	[] PD 1 [X] PD 2 [] PD 3
IP protection class .....:	IPX0
Altitude during operation (m) .....:	Up to 2000
Altitude of test laboratory (m) .....:	below 2000
Mass of equipment (kg) .....:	Approx 0.6kg

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 of receipt of test item..... :	Dec. 16, 2015
Date (s) of performance of tests ..... :	Dec. 16, 2015 to Jan. 15, 2016

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 ☐ comma / ☒ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
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 ..... :	☐ **Yes** ☒ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	**Same as applicant**
General product information: 1. The apparatus are Class I switching adapter (desktop type) used for DC supply of information technology equipment, output cord is non-detachable. 2. Top enclosure and bottom enclosure are fixed by ultrasonic weld. 3. Specified maximum ambient temperature is 25°C. 4. The test samples are pre-production sample without serial numbers. **Difference between models:** 1. R21, R42, R110, R115: The parameters of these components depend on output current.	

Model list:

Model name	Input	Output	
		Voltage (Vdc)	Current (A)
YHY-ab	100-240V~, 50-60Hz, 2.5A	9.0	0.01-10.00
		9.1-10.0	0.01-10.00
		10.1-11.0	0.01-10.00
		11.1-12.0	0.01-10.00
		12.1-13.0	0.01-9.20
		13.1-14.0	0.01-8.50
		14.1-15.0	0.01-8.00
		15.1-16.0	0.01-7.50
		16.1-17.0	0.01-7.00
		17.1-18.0	0.01-6.60
		18.1-19.0	0.01-6.30
		19.1-20.0	0.01-6.00
		20.1-21.0	0.01-5.70
		21.1-22.0	0.01-5.40
		22.1-23.0	0.01-5.20
		23.1-24.0	0.01-5.00

Note:

'a' is 3 digit number from 090 to 240 which represents the output voltage in Volt after dividing by 10 in step of 0.1V , for example, 090 represents the output voltage is 9.0V.

'b' is 5 digit number from 00010 to 10000 which represents the output current in Ampere after dividing by 10 in a step of 0.01A , for example, 10000 represents the output current is 10.00A.

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)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1	GENERAL	P

1.5	Components		P
1.5.1	General	Components which were found to affect safety aspects comply with the requirements of this standard or within the safety aspects of the relevant IEC component standards.	P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	Components which are certified to IEC/EN and /or national standards are used correctly within their ratings. Components not covered by IEC/EN standards are tested under the conditions present in the equipment.	P
1.5.3	Thermal controls	No thermal controls provided.	N/A
1.5.4	Transformers	Transformer used are suitable for their intended application and comply with the relevant requirements of the standard and particularly Annex C.	P
1.5.5	Interconnecting cables	Interconnection o/p cable to other device is carrying only SELV on an energy level below 240 VA. Except for the insulation material, there are no further requirements for the o/p interconnection cable.	P
1.5.6	Capacitors bridging insulation	Between the lines capacitors subclass X2 cap. according to IEC 60384-14. Reinforced insulation between primary side and secondary side: Y1 cap. according to IEC 60384-14. Basic insulation between primary and PE: Y1 cap. according to IEC 60384-14.	P
1.5.7	Resistors bridging insulation	See below	P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	No such component	N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		**N/A**
1.5.8	Components in equipment for IT power systems	No such component	**N/A**
1.5.9	Surge suppressors		**P**
1.5.9.1	General	Approve surge supperessor (MOV1) used after mains fuse for details see appended table 1.5.1.	**P**
1.5.9.2	Protection of VDRs	The current fuse (F1) provide the protection.	**P**
1.5.9.3	Bridging of functional insulation by a VDR	See 1.5.9.1.	**P**
1.5.9.4	Bridging of basic insulation by a VDR		**N/A**
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		**N/A**
1.6	**Power interface**		**P**
1.6.1	AC power distribution systems	TN power system.	**P**
1.6.2	Input current	Highest load according to 1.2.2.1 for this equipment is the operation with the max. specified DC-load. (see appended table 1.6.2)	**P**
1.6.3	Voltage limit of hand-held equipment	Not hand-held equipment.	**N/A**
1.6.4	Neutral conductor	Class I appliance inlet used. Double or reinforce insulation for rated voltage between enclosure and primary phases.	**P**
1.7	**Marking and instructions**		**P**
1.7.1	Power rating and identification markings		**P**
1.7.1.1	Power rating marking	See below	**P**
	Multiple mains supply connections.....:		**N/A**
	Rated voltage(s) or voltage range(s) (V) ..... :	100-240Vac	**P**
	Symbol for nature of supply, for d.c. only ..... :	Mains from AC source	**P**
	Rated frequency or rated frequency range (Hz) ... :	50-60Hz	**P**
	Rated current (mA or A) ..... :	2.5A.	**P**
1.7.1.2	Identification markings	See below	**P**
	Manufacturer's name or trade-mark or identification mark ..... :	See copy of marking plate.	**P**
	Model identification or type reference ..... :	See label	**P**

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Symbol for Class II equipment only ..... :	Class I equipment	**N/A**
	Other markings and symbols ..... :	Additional symbols or marking does not give rise to misunderstanding.	**P**
1.7.1.3	Use of graphical symbols		**P**
1.7.2	Safety instructions and marking	See below	**P**
1.7.2.1	General	"User's Manual" provided that contains information regarding the maximum ambient temperature.	**P**
1.7.2.2	Disconnect devices	Appliance inlet was used as disconnected device.	**P**
1.7.2.3	Overcurrent protective device	Not such equipment.	**N/A**
1.7.2.4	IT power distribution systems	Only for Norway.	**P**
1.7.2.5	Operator access with a tool	No operator accessible area that needs to be accessed by the use of a tool.	**N/A**
1.7.2.6	Ozone	Not such equipment.	**N/A**
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	**N/A**
1.7.4	Supply voltage adjustment ..... :	No voltage selector.	**N/A**
	Methods and means of adjustment; reference to installation instructions ..... :		**N/A**
1.7.5	Power outlets on the equipment ..... :	No power outlets provided.	**N/A**
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....:	The rating of current fuse F1: “T3.15A 250V” was marked on PCB adjacent to fuse.	**P**
1.7.7	Wiring terminals	See below.	**P**
1.7.7.1	Protective earthing and bonding terminals .....:		**N/A**
1.7.7.2	Terminals for a.c. mains supply conductors	Appliance inlet used.	**N/A**
1.7.7.3	Terminals for d.c. mains supply conductors	No d.c. mains supply.	**N/A**
1.7.8	Controls and indicators	No safety related switches or indicators.	**N/A**
1.7.8.1	Identification, location and marking .....:		**N/A**
1.7.8.2	Colours .....:		**N/A**
1.7.8.3	Symbols according to IEC 60417.....:		**N/A**
1.7.8.4	Markings using figures .....:		**N/A**
1.7.9	Isolation of multiple power sources .....:	Only one supply from the mains.	**N/A**

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.10	Thermostats and other regulating devices .....:	No such componentes provided.	**N/A**
1.7.11	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec. With the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling and lifting of the label edge.	**P**
1.7.12	Removable parts	No removable part.	**N/A**
1.7.13	Replaceable batteries .....:	No battery provided.	**N/A**
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations .....:	Not intended for use in restricted access locations.	**N/A**

2	**PROTECTION FROM HAZARDS**		**P**
2.1	**Protection from electric shock and energy hazards**		**P**
2.1.1	Protection in operator access areas	No access with test finger and test pin to any parts with only basic insulation to ELV or hazardous voltage.	**P**
2.1.1.1	Access to energized parts	See above.	**P**
	Test by inspection .....:	See above.	**P**
	Test with test finger (Figure 2A) .....:	See above.	**P**
	Test with test pin (Figure 2B) .....:	See above.	**P**
	Test with test probe (Figure 2C) .....:	No TNV.	**N/A**
2.1.1.2	Battery compartments	No battery compartment.	**N/A**
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	**N/A**
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)	(see appended tables 2.10.2 and 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	**N/A**
2.1.1.5	Energy hazards .....:	Energy does not exceed 240VA between any two points in accessible parts (o/p connector of secondary circuit). Results see appended table 2.1.1.5. No energy hazard in operator access area.	**P**

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.6	Manual controls	No manual controls.	**N/A**
2.1.1.7	Discharge of capacitors in equipment	See below	**P**
	Measured voltage (V); time-constant (s).....:	(see appended table 2.1.1.7)	—
2.1.1.8	Energy hazards – d.c. mains supply	Connected to a.c. mains.	**N/A**
	a) Capacitor connected to the d.c. mains supply ..:		**N/A**
	b) Internal battery connected to the d.c. mains supply :		**N/A**
2.1.1.9	Audio amplifiers .....:	Not such equipment.	**N/A**
2.1.2	Protection in service access areas	No operator accessible area that needs to be accessed by the use of a tool.	**N/A**
2.1.3	Protection in restricted access locations	Not intended for use in restricted access locations.	**N/A**
2.2	**SELV circuits**		**P**
2.2.1	General requirements	The secondary circuits were tested as SELV. See 2.2.1 to 2.2.4.	**P**
2.2.2	Voltages under normal conditions (V) ..... :	Between any conductors of the SELV circuits 42.4 V peak or 60 V d.c. are not exceeded. See appended table 2.2.2.	**P**
2.2.3	Voltages under fault conditions (V) ..... :	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120V d.c. were not exceeded within 0.2 seconds and limits 42.4V peak and 60V d.c. were not exceeded for longer than 0.2 seconds.	**P**
2.2.4	Connection of SELV circuits to other circuits .....:	See 2.2.2 and 2.2.3.	**P**
2.3	**TNV circuits**		**N/A**
2.3.1	Limits	No TNV circuit.	**N/A**
	Type of TNV circuits ..... :		—
2.3.2	Separation from other circuits and from accessible parts		**N/A**
2.3.2.1	General requirements		**N/A**
2.3.2.2	Protection by basic insulation		**N/A**
2.3.2.3	Protection by earthing		**N/A**
2.3.2.4	Protection by other constructions ..... :		**N/A**
2.3.3	Separation from hazardous voltages		**N/A**

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Insulation employed..... :		—
2.3.4	Connection of TNV circuits to other circuits		**N/A**
	Insulation employed..... :		—
2.3.5	Test for operating voltages generated externally		**N/A**
2.4	**Limited current circuits**		**P**
2.4.1	General requirements		**P**
2.4.2	Limit values		**P**
	Frequency (Hz)..... :	(See appended table 2.4.2)	—
	Measured current (mA)..... :	(See appended table 2.4.2)	—
	Measured voltage (V) ..... :	(See appended table 2.4.2)	—
	Measured circuit capacitance (nF or µF) ..... :	CY3=2200pF	—
2.4.3	Connection of limited current circuits to other circuits	See 2.2.2 and 2.2.3. No direct connection between SELV and any primary circuits.	**P**
2.5	**Limited power sources**		**N/A**
	a) Inherently limited output		**N/A**
	b) Impedance limited output		**N/A**
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition		**N/A**
	Use of integrated circuit (IC) current limiters	No such IC used.	**N/A**
	d) Overcurrent protective device limited output		—
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :		—
	Current rating of overcurrent protective device (A) .:	No such circuit used.	**N/A**
2.6	**Provisions for earthing and bonding**		**P**
2.6.1	Protective earthing	Parts connecte to protective earthing reliably	**P**
2.6.2	Functional earthing	Secondary functional earthing is separated to primary by reinforced or double insulation	**P**
	Use of symbol for functional earthing .....:		**N/A**
2.6.3	Protective earthing and protective bonding conductors	See below	**P**
2.6.3.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.2	Size of protective earthing conductors	Approved appliance inlet only, no power cord provided.	N/A
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.3	Size of protective bonding conductors	See above	**P**
	Rated current (A), cross-sectional area (mm2), AWG ..... :	See table 1.5.1.	—
	Protective current rating (A), cross-sectional area (mm2), AWG ..... :	See table 1.5.1.	—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)..... :	32A, 2min. Max. 0.024ohm	**P**
2.6.3.5	Colour of insulation ..... :		**N/A**
2.6.4	Terminals	See below	**N/A**
2.6.4.1	General	Appliance inlet soldered on PCB directly	**N/A**
2.6.4.2	Protective earthing and bonding terminals	See below 2.6.3.1	**N/A**
	Rated current (A), type, nominal thread diameter (mm) ..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		**N/A**
2.6.5	Integrity of protective earthing	See below.	**P**
2.6.5.1	Interconnection of equipment	This unit has its own earthing connection. Any other units connected via the output shall be provided SELV only.	**P**
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switch or overcurrent protective device in protective earthing or bonding conductor.	**P**
2.6.5.3	Disconnection of protective earth	It is not possible to disconnect earth without disconnecting mains as an appliance inlet is used.	**P**
2.6.5.4	Parts that can be removed by an operator	Appliance inlet used, earthing connected before and disconnected after hazardous voltage. No other operator removeable parts.	**P**
2.6.5.5	Parts removed during servicing	It is not necessary to disconnect earthing except for the removing of the earthed part itself	**P**
2.6.5.6	Corrosion resistance	All Safety earthing connections in compliance with Annex J	**P**

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.7	Screws for protective bonding	No self-tapping screws are used	**P**
2.6.5.8	Reliance on telecommunication network or cable distribution system	No TNV	**N/A**
2.7	**Overcurrent and earth fault protection in primary circuits**		**P**
2.7.1	Basic requirements	Equipment relies on 16A rated fuse or circuit breaker of the wall outlet installation protection of the building installation in regard to L to N short circuit. Over-current protection is provided by fuse.	**P**
	Instructions when protection relies on building installation	Not applicable for pluggable equipment type A.	**N/A**
2.7.2	Faults not simulated in 5.3.7	The protection device is well dimensioned and mounted.	**P**
2.7.3	Short-circuit backup protection	Pluggable equipment type A. Building installation is considered as providing short-circuit backup protection.	**P**
2.7.4	Number and location of protective devices ..... :	One current fuse located in the primary circuit.	**P**
2.7.5	Protection by several devices	One current fuse used as protective devices.	**N/A**
2.7.6	Warning to service personnel..... :	No service work necessary.	**N/A**
2.8	**Safety interlocks**		**N/A**
2.8.1	General principles	No safety interlocks.	**N/A**
2.8.2	Protection requirements		**N/A**
2.8.3	Inadvertent reactivation		**N/A**
2.8.4	Fail-safe operation		**N/A**
	Protection against extreme hazard		**N/A**
2.8.5	Moving parts		**N/A**
2.8.6	Overriding		**N/A**
2.8.7	Switches, relays and their related circuits		**N/A**
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) .....:		**N/A**
2.8.7.2	Overload test		**N/A**
2.8.7.3	Endurance test		**N/A**
2.8.7.4	Electric strength test		**N/A**
2.8.8	Mechanical actuators		**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
2.9	**Electrical insulation**		**P**
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic material are not used.	**P**
2.9.2	Humidity conditioning	120 h	**P**
	Relative humidity (%), temperature (°C) ..... :	93% R.H., 40°C Tested were performed for the Switching Adapter and the separated transformer.	—
2.9.3	Grade of insulation	Insulation complies with sub-clauses 2.10, 4.5.1 and 5.2.	**P**
2.9.4	Separation from hazardous voltages	The secondary circuit is separated from hazardous voltages by reinforce insulation.	**P**
	Method(s) used ..... :	Method 1 used.	—

2.10	**Clearances, creepage distances and distances through insulation**		**P**
2.10.1	General	See 2.10.3, 2.10.4 and 2.10.5.	**P**
2.10.1.1	Frequency .....:		**P**
2.10.1.2	Pollution degrees .....:	2	**P**
2.10.1.3	Reduced values for functional insulation	See 5.3.4.	**P**
2.10.1.4	Intervening unconnected conductive parts	No such part.	**N/A**
2.10.1.5	Insulation with varying dimensions	No such transformer used.	**N/A**
2.10.1.6	Special separation requirements	No TNV	**N/A**
2.10.1.7	Insulation in circuits generating starting pulses	No such circuit.	**N/A**
2.10.2	Determination of working voltage	The rms and the peak voltage were measured with unit connected to a 240V TN power system. Pollution Degree 2 and Overvoltage Category II considered.	**P**
2.10.2.1	General	See above.	**P**
2.10.2.2	RMS working voltage	(Results see appended table 2.10.2)	**P**
2.10.2.3	Peak working voltage	(Results see appended table 2.10.2)	**P**
2.10.3	Clearances	See below and advantage of annex G is not considered.	**P**
2.10.3.1	General	See below, Annex G was not considered.	**P**
2.10.3.2	Mains transient voltages	See below	**P**

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Clause	Requirement + Test	Result - Remark	Verdict
	a) AC mains supply .....:	Normal transient voltage considered (overvoltage category II for primary circuit).	P
	b) Earthed d.c. mains supplies .....:	AC mains	N/A
	c) Unearthed d.c. mains supplies .....:		N/A
	d) Battery operation .....:		N/A
2.10.3.3	Clearances in primary circuits	Annex F and minimum clearances considered. (see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	See 5.3.4.	P
2.10.3.5	Clearances in circuits having starting pulses	No such circuit	N/A
2.10.3.6	Transients from a.c. mains supply .....:	See 2.10.3.2.	N/A
2.10.3.7	Transients from d.c. mains supply .....:		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....:	No TNV circuit	N/A
2.10.3.9	Measurement of transient voltage levels	See 2.10.3.6.	N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply .....:		N/A
	For a d.c. mains supply .....:		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances	See below.	P
2.10.4.1	General	(see appended table 2.10.3 and 2.10.4)	P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests.....:	CTI rating for all materials of min. 100.	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation		P
2.10.5.1	General	See below.	P
2.10.5.2	Distances through insulation	Opto-coupler, enclosure provided. (see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation	No such component.	N/A
2.10.5.4	Semiconductor devices	Approved optocoupler with dti ≥0.4mm used.	P
2.10.5.5.	Cemented joints	No such component.	N/A
2.10.5.6	Thin sheet material – General	Insulation tape used for T2 and heat-sink.	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.7	Separable thin sheet material	See above	P
	Number of layers (pcs) .....:	2	—
2.10.5.8	Non-separable thin sheet material	Not such marterial	N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		P
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components	Approved source of triple insulated wire used in T2 secondary winding for reinforced insulation.	P
2.10.5.12	Wire in wound components		P
	Working voltage .....:	See appended table.	P
	a) Basic insulation not under stress .....:		N/A
	b) Basic, supplementary, reinforced insulation .....:		N/A
	c) Compliance with Annex U .....:	Approved source of triple insulated wire used in T2 secondary winding for reinforced insulation.	P
	Two wires in contact inside wound component; angle between 45° and 90° .....:	By insulation tape	P
2.10.5.13	Wire with solvent-based enamel in wound components	No such construction.	N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components	No such construction.	N/A
	Working voltage .....:		N/A
	- Basic insulation not under stress .....:		N/A
	- Supplementary, reinforced insulation .....:		N/A
2.10.6	Construction of printed boards	See below.	P
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.2	Coated printed boards	No coated printed boards.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	No multi-layer PCBs provided.	N/A
2.10.6.4	Insulation between conductors on different layers of a printed board	No multi-layer PCBs provided.	N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs).....:	Single layer PCB	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.7	Component external terminations	(see appended table 2.10.3 and 2.10.4)	**P**
2.10.8	Tests on coated printed boards and coated components	No such boards and componets	**N/A**
2.10.8.1	Sample preparation and preliminary inspection		**N/A**
2.10.8.2	Thermal conditioning		**N/A**
2.10.8.3	Electric strength test		**N/A**
2.10.8.4	Abrasion resistance test		**N/A**
2.10.9	Thermal cycling		**N/A**
2.10.10	Test for Pollution Degree 1 environment and insulating compound		**N/A**
2.10.11	Tests for semiconductor devices and cemented joints	Approved opto-coupler used. No other parts to be tested.	**P**
2.10.12	Enclosed and sealed parts	No hermetically sealed component.	**N/A**

3	**WIRING, CONNECTIONS AND SUPPLY**		**P**
3.1	**General**		**P**
3.1.1	Current rating and overcurrent protection	All internal wires are PVC insulated, and having gauge suitable for current intended to be carried. Internal wiring gauge is suitable for current intended to be carried.	**P**
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges which could damage the insulation and cause hazard.	**P**
3.1.3	Securing of internal wiring	The wires are secured by soldering and glue (on PCB) so that a loosening of the terminal connection is unlikely.	**P**
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage. For the insulation material see 3.1.1.	**P**
3.1.5	Beads and ceramic insulators	Not used.	**N/A**
3.1.6	Screws for electrical contact pressure	No such screws provided.	**N/A**
3.1.7	Insulating materials in electrical connections	All current carrying connections are metal to metal.	**N/A**
3.1.8	Self-tapping and spaced thread screws	Not used.	**N/A**
3.1.9	Termination of conductors	All conductors are reliable secured.	**P**

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Clause	Requirement + Test	Result - Remark	Verdict
	10 N pull test	Force of 10 N applied to the termination points of the conductors.	**P**
3.1.10	Sleeving on wiring	No sleeving used to provide supplementary insulation.	**N/A**
3.2	**Connection to a mains supply**		**P**
3.2.1	Means of connection	See below.	**P**
3.2.1.1	Connection to an a.c. mains supply	AC inlet provided.	**P**
3.2.1.2	Connection to a d.c. mains supply	AC Source	**N/A**
3.2.2	Multiple supply connections	Only one supply connection.	**N/A**
3.2.3	Permanently connected equipment	Not permanently connected equipment.	**N/A**
	Number of conductors, diameter of cable and conduits (mm) ..... :		—
3.2.4	Appliance inlets	Appliance sources used	**P**
3.2.5	Power supply cords		**N/A**
3.2.5.1	AC power supply cords		**N/A**
	Type ..... :		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
3.2.5.2	DC power supply cords	AC Source.	**N/A**
3.2.6	Cord anchorages and strain relief		**N/A**
	Mass of equipment (kg), pull (N) ..... :		—
	Longitudinal displacement (mm) ..... :		—
3.2.7	Protection against mechanical damage		**P**
3.2.8	Cord guards	No cord guard provided.	**N/A**
	Diameter or minor dimension D (mm); test mass (g) ..... :		—
	Radius of curvature of cord (mm)..... :		—
3.2.9	Supply wiring space	Not permanent connection or non-detachable power cord type.	**N/A**
3.3	**Wiring terminals for connection of external conductors**		**P**
3.3.1	Wiring terminals	Not permanently connected equipment	**N/A**
3.3.2	Connection of non-detachable power supply cords	See 3.1.9 for the connection. Excess of temperature rise on terminal is unlikely.	**N/A**
3.3.3	Screw terminals	No screw used.	**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	Conductor sizes to be connected		**N/A**
	Rated current (A), cord/cable type, cross-sectional area (mm^2) ..... :		—
3.3.5	Wiring terminal sizes		**N/A**
	Rated current (A), type, nominal thread diameter (mm) ..... :		—
3.3.6	Wiring terminal design		**N/A**
3.3.7	Grouping of wiring terminals		**N/A**
3.3.8	Stranded wire		**N/A**
3.4	**Disconnection from the mains supply**		**P**
3.4.1	General requirement	See below.	**P**
3.4.2	Disconnect devices	See sub-clause 1.7.2.2.	**P**
3.4.3	Permanently connected equipment	Not permanently connected equipment.	**N/A**
3.4.4	Parts which remain energized	There is no parts remained with hazardous voltage or energy in the equipment when SPS is separated from AC mains.	**P**
3.4.5	Switches in flexible cords	None.	**N/A**
3.4.6	Number of poles - single-phase and d.c. equipment	See sub-clause 1.7.2.2. The disconnected device disconnects both poles simultaneously.	**P**
3.4.7	Number of poles - three-phase equipment	Single phase equipment.	**N/A**
3.4.8	Switches as disconnect devices	See sub-clause 3.4.2.	**N/A**
3.4.9	Plugs as disconnect devices	See sub-clause 3.4.2.	**P**
3.4.10	Interconnected equipment	No interconnections using hazardous voltages.	**N/A**
3.4.11	Multiple power sources	Only one supply connection provided.	**N/A**
3.5	**Interconnection of equipment**		**P**
3.5.1	General requirements	This power supply is not considered for connection to TNV.	**P**
3.5.2	Types of interconnection circuits ..... :	Interconnection circuits of SELV through the connector. No ELV interconnection circuits.	**P**
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection	**N/A**
3.5.4	Data ports for additional equipment	No such ports	**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict

4	**PHYSICAL REQUIREMENTS**		**P**
4.1	**Stability**		**P**
	Angle of 10°		**P**
	Test force (N) .....:		**N/A**

4.2	**Mechanical strength**		**P**
4.2.1	General	See below. After tests, unit comply with 2.1.1, 2.6.1, 2.10 and 4.4.1.	**P**
	Rack-mounted equipment.	No such equipment	**N/A**
4.2.2	Steady force test, 10 N	10N applied to components other than parts serving as an enclosure.	**P**
4.2.3	Steady force test, 30 N	No internal enclosure.	**N/A**
4.2.4	Steady force test, 250 N	250N applied to outer enclosure. No energy or other hazards. Test was performed for all sources of enclosure material.	**P**
4.2.5	Impact test	Test for desktop unit 1.3m, three impacts. No hazard as result from Impact test. Test was performed for all sources of enclosure material.	**P**
	Fall test		**P**
	Swing test	See above	**P**
4.2.6	Drop test; height (mm) .....:	1000	**P**
4.2.7	Stress relief test	After the test at temperature of 90°C no shrinkage, distortion or loosening of any enclosure part was noticeable on the equipment for all source enclosure material.	**P**
4.2.8	Cathode ray tubes	No CRT provided.	**N/A**
	Picture tube separately certified .....:		**N/A**
4.2.9	High pressure lamps	No high pressure lamps provided.	**N/A**
4.2.10	Wall or ceiling mounted equipment; force (N) .....:		**N/A**

4.3	**Design and construction**		**P**

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.1	Edges and corners	All edges and corners are rounded and /or smoothed.	**P**
4.3.2	Handles and manual controls; force (N) ..... :	No handles or controls provided.	**N/A**
4.3.3	Adjustable controls	No controls provided.	**N/A**
4.3.4	Securing of parts	No connection likely to be exposed to mechanical stress is provided in unit.	**P**
4.3.5	Connection by plugs and sockets	No mismating of connectors, plugs or sockets possible.	**P**
4.3.6	Direct plug-in equipment	Not direct plug-in equipment	**N/A**
	Torque .....:		—
	Compliance with the relevant mains plug standard .....:		**N/A**
4.3.7	Heating elements in earthed equipment	No heating elements provided.	**N/A**
4.3.8	Batteries	No batteries provided.	**N/A**
	- Overcharging of a rechargeable battery		**N/A**
	- Unintentional charging of a non-rechargeable battery		**N/A**
	- Reverse charging of a rechargeable battery		**N/A**
	- Excessive discharging rate for any battery		**N/A**
4.3.9	Oil and grease	No heating elements provided.	**N/A**
4.3.10	Dust, powders, liquids and gases	Equipment in intended use not considered to be exposed to these.	**N/A**
4.3.11	Containers for liquids or gases	No container for liquid or gas.	**N/A**
4.3.12	Flammable liquids .....:	No such flammable liquid.	**N/A**
	Quantity of liquid (l) .....:		**N/A**
	Flash point (°C) .....:		**N/A**
4.3.13	Radiation	See only cl. 4.3.13.5	**P**
4.3.13.1	General		**P**
4.3.13.2	Ionizing radiation		**N/A**
	Measured radiation (pA/kg) .....:		—
	Measured high-voltage (kV) .....:		—
	Measured focus voltage (kV) .....:		—
	CRT markings .....:		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		**N/A**
	Part, property, retention after test, flammability classification .....:		**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....:		**N/A**
4.3.13.5	Lasers (including laser diodes) and LEDs	Indication LED used.	**P**
4.3.13.5.1	Lasers (including laser diodes)		**N/A**
	Laser class .....:		—
4.3.13.5.2	Light emitting diodes (LEDs)	Indication LED used.	—
4.3.13.6	Other types .....:		**N/A**
4.4	**Protection against hazardous moving parts**		**N/A**
4.4.1	General	No moving parts.	**N/A**
4.4.2	Protection in operator access areas .....:		**N/A**
	Household and home/office document/media shredders		**N/A**
4.4.3	Protection in restricted access locations .....:		**N/A**
4.4.4	Protection in service access areas		**N/A**
4.4.5	Protection against moving fan blades		**N/A**
4.4.5.1	General		**N/A**
	Not considered to cause pain or injury. a).....:		**N/A**
	Is considered to cause pain, not injury. b) .....:		**N/A**
	Considered to cause injury. c) .....:		**N/A**
4.4.5.2	Protection for users		**N/A**
	Use of symbol or warning .....:		**N/A**
4.4.5.3	Protection for service persons		**N/A**
	Use of symbol or warning .....:		**N/A**
4.5	**Thermal requirements**		**P**
4.5.1	General	Equipment loaded with rated output current.	**P**
4.5.2	Temperature tests	(See appended table 4.5)	**P**
	Normal load condition per Annex L .....:	(see appended table 1.6.2)	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	**P**
4.5.4	Touch temperature limits	(see appended table 4.5)	**P**
4.5.5	Resistance to abnormal heat .....:	(see appended table 4.5.5)	**P**
4.6	**Openings in enclosures**		N/A
4.6.1	Top and side openings	No opening.	**N/A**
	Dimensions (mm) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict

4.6.2	Bottoms of fire enclosures		**N/A**
	Construction of the bottomm, dimensions (mm) ..:		—
4.6.3	Doors or covers in fire enclosures		**N/A**
4.6.4	Openings in transportable equipment		**N/A**
4.6.4.1	Constructional design measures		**N/A**
	Dimensions (mm) .....:		—
4.6.4.2	Evaluation measures for larger openings		**N/A**
4.6.4.3	Use of metallized parts		**N/A**
4.6.5	Adhesives for constructional purposes		**N/A**
	Conditioning temperature (°C), time (weeks).....:		—

4.7	**Resistance to fire**		**P**
4.7.1	Reducing the risk of ignition and spread of flame	Use of materials with the required flammability classes.	**P**
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	**P**
	Method 2, application of all of simulated fault condition tests		**N/A**
4.7.2	Conditions for a fire enclosure	See below.	**P**
4.7.2.1	Parts requiring a fire enclosure	With having the following parts: ▪ Components in primary ▪ Components in secondary ▪ Components having unenclosed arcing parts at hazardous voltage or energy level ▪ Insulated wiring The fire enclosure is required.	**P**
4.7.2.2	Parts not requiring a fire enclosure		**N/A**
4.7.3	Materials		**P**
4.7.3.1	General	Parts mounted on PCB of flammability class V-1 or better.	**P**
4.7.3.2	Materials for fire enclosures	The fire enclosure is min. V-0 material.	**P**
4.7.3.3	Materials for components and other parts outside fire enclosures	No part outside fire enclosure.	**N/A**
4.7.3.4	Materials for components and other parts inside fire enclosures	PCB rated V-1 or better. See appended table 1.5.1. Internal components except small parts are V-2 or better.	**P**
4.7.3.5	Materials for air filter assemblies	No air filters provided.	**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.6	Materials used in high-voltage components	No high voltage components provided.	**N/A**
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		**P**
5.1	**Touch current and protective conductor current**		**P**
5.1.1	General	(see appended Table 5.1)	**P**
5.1.2	Configuration of equipment under test (EUT)	EUT has only one mains connection.	**P**
5.1.2.1	Single connection to an a.c. mains supply		**P**
5.1.2.2	Redundant multiple connections to an a.c. mains supply		**N/A**
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		**N/A**
5.1.3	Test circuit	Equipment of figure 5A used.	**P**
5.1.4	Application of measuring instrument	Using measuring instrument in annex D.	**P**
5.1.5	Test procedure	The touch current was measured from mains to DC output connector and to a 100 mm × 200 mm metal foil wrapped on accessible non-conductive parts (plastic enclosure).	**P**
5.1.6	Test measurements	See below.	**P**
	Supply voltage (V) ..... :	(See appended table 5.1.6)	—
	Measured touch current (mA) ..... :	(See appended table 5.1.6)	—
	Max. allowed touch current (mA) ..... :	(See appended table 5.1.6)	—
	Measured protective conductor current (mA) ..... :		—
	Max. allowed protective conductor current (mA) .. :		—
5.1.7	Equipment with touch current exceeding 3,5 mA	Neither stationary permanently connected equipment nor stationary pluggable equipment type B.	**N/A**
5.1.7.1	General ..... :		**N/A**
5.1.7.2	Simultaneous multiple connections to the supply		**N/A**
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	No TNV.	**N/A**
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		**N/A**
	Supply voltage (V) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
5.1.8.2	Summation of touch currents from telecommunication networks		**N/A**
	a) EUT with earthed telecommunication ports .... :		**N/A**
	b) EUT whose telecommunication ports have no reference to protective earth		**N/A**
5.2	**Electric strength**		**P**
5.2.1	General	(see appended table 5.2)	**P**
5.2.2	Test procedure	(see appended table 5.2)	**P**
5.3	**Abnormal operating and fault conditions**		**P**
5.3.1	Protection against overload and abnormal operation	Output overload test, the most unfavorable load test. (see appended table 5.3)	**P**
5.3.2	Motors	No motors.	**N/A**
5.3.3	Transformers	With the shorted o/p of the transformer, no high temperature of the transformer was recorded. Results of the short-circuit tests see appended table 5.3 and Annex C.	**P**
5.3.4	Functional insulation ..... :	Method c). Test results see appended table 5.3.	**P**
5.3.5	Electromechanical components	No electromechanical component provided.	**N/A**
5.3.6	Audio amplifiers in ITE ..... :	No such component.	**N/A**
5.3.7	Simulation of faults	Results see appended table.	**P**
5.3.8	Unattended equipment	None of the listed components was provided.	**N/A**
5.3.9	Compliance criteria for abnormal operating and fault conditions	No fire propagated beyond the equipment. No molten metal was emitted. Electric strength test primary to SELV was passed.	**P**
5.3.9.1	During the tests		**P**
5.3.9.2	After the tests		**P**
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		**N/A**
6.1	**Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment**		**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
6.1.1	Protection from hazardous voltages		**N/A**
6.1.2	Separation of the telecommunication network from earth		**N/A**
6.1.2.1	Requirements	No TNV.	**N/A**
	Supply voltage (V) .....:		—
	Current in the test circuit (mA) .....:		—
6.1.2.2	Exclusions .....:		**N/A**
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		**N/A**
6.2.1	Separation requirements		**N/A**
6.2.2	Electric strength test procedure		**N/A**
6.2.2.1	Impulse test		**N/A**
6.2.2.2	Steady-state test		**N/A**
6.2.2.3	Compliance criteria		**N/A**
6.3	**Protection of the telecommunication wiring system from overheating**		**N/A**
	Max. output current (A) .....:		—
	Current limiting method .....:		—
7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		**N/A**
7.1	**General**	Not connected to cable distribution system	**N/A**
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		**N/A**
7.3	Protection of equipment users from overvoltages on the cable distribution system		**N/A**
7.4	Insulation between primary circuits and cable distribution systems		**N/A**
7.4.1	General		**N/A**
7.4.2	Voltage surge test		**N/A**
7.4.3	Impulse test		**N/A**

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE** *UL Recognized material used*		**P**
A.1	**Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)**		**N/A**
A.1.1	Samples..... :		—
	Wall thickness (mm)..... :		—
A.1.2	Conditioning of samples; temperature (°C) ..... :		**N/A**
A.1.3	Mounting of samples ..... :		**N/A**
A.1.4	Test flame (see IEC 60695-11-3)		**N/A**
	Flame A, B, C or D ..... :		—
A.1.5	Test procedure		**N/A**
A.1.6	Compliance criteria		**N/A**
	Sample 1 burning time (s) ..... :		—
	Sample 2 burning time (s) ..... :		—
	Sample 3 burning time (s) ..... :		—
A.2	**Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)**		**P**
A.2.1	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
A.2.2	Conditioning of samples; temperature (°C) ..... :		**N/A**
A.2.3	Mounting of samples ..... :		**N/A**
A.2.4	Test flame (see IEC 60695-11-4)		**N/A**
	Flame A, B or C ..... :		—
A.2.5	Test procedure		**N/A**
A.2.6	Compliance criteria		**N/A**
	Sample 1 burning time (s) ..... :		—
	Sample 2 burning time (s) ..... :		—
	Sample 3 burning time (s) ..... :		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		**N/A**
	Sample 1 burning time (s) ..... :		—
	Sample 2 burning time (s) ..... :		—
	Sample 3 burning time (s) ..... :		—
A.3	**Hot flaming oil test (see 4.6.2)**		**N/A**
A.3.1	Mounting of samples		**N/A**
A.3.2	Test procedure		**N/A**

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
A.3.3	Compliance criterion		**N/A**
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		**N/A**
B.1	**General requirements**	No motor provided.	**N/A**
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	**Test conditions**		**N/A**
B.3	**Maximum temperatures**		**N/A**
B.4	**Running overload test**		**N/A**
B.5	**Locked-rotor overload test**		**N/A**
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—
B.6	**Running overload test for d.c. motors in secondary circuits**		**N/A**
B.6.1	General		**N/A**
B.6.2	Test procedure		**N/A**
B.6.3	Alternative test procedure		**N/A**
B.6.4	Electric strength test; test voltage (V) ..... :		**N/A**
B.7	**Locked-rotor overload test for d.c. motors in secondary circuits**		**N/A**
B.7.1	General		**N/A**
B.7.2	Test procedure		**N/A**
B.7.3	Alternative test procedure		**N/A**
B.7.4	Electric strength test; test voltage (V) ..... :		**N/A**
B.8	**Test for motors with capacitors**		**N/A**
B.9	**Test for three-phase motors**		**N/A**
B.10	**Test for series motors**		**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
	Operating voltage (V) ..... :		—
C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		**P**
	Position ..... :	See appeded table 1.5.1	—
	Manufacturer ..... :	See appended table 1.5.1	—
	Type ..... :	See appended table 1.5.1	—
	Rated values ..... :	See appended table 1.5.1	—
	Method of protection ..... :	By protection circuit design.	—
C.1	**Overload test**	See appended table 5.3.	**P**
C.2	**Insulation**	(see appended tables 5.2 and C2)	**P**
	Protection from displacement of windings..... :	By insulation tape	**P**
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		**P**
D.1	**Measuring instrument**		**P**
D.2	**Alternative measuring instrument**		**N/A**
E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**		**P**
F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**		**P**
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		**N/A**
G.1	**Clearances**		**N/A**
G.1.1	General		**N/A**
G.1.2	Summary of the procedure for determining minimum clearances		**N/A**
G.2	**Determination of mains transient voltage (V)**		**N/A**
G.2.1	AC mains supply ..... :		**N/A**
G.2.2	Earthed d.c. mains supplies ..... :		**N/A**
G.2.3	Unearthed d.c. mains supplies ..... :		**N/A**
G.2.4	Battery operation ..... :		**N/A**
G.3	**Determination of telecommunication network transient voltage (V) ..... :**		**N/A**
G.4	**Determination of required withstand voltage (V)**		**N/A**
G.4.1	Mains transients and internal repetitive peaks .... :		**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Transients from telecommunication networks .....:		**N/A**
G.4.3	Combination of transients		**N/A**
G.4.4	Transients from cable distribution systems		**N/A**
G.5	**Measurement of transient voltages (V)**		**N/A**
	a) Transients from a mains supply		**N/A**
	For an a.c. mains supply		**N/A**
	For a d.c. mains supply		**N/A**
	b) Transients from a telecommunication network		**N/A**
G.6	**Determination of minimum clearances .....:**		**N/A**
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		**N/A**
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		**P**
	Metal(s) used .....:	No risk of corrosion.	—
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		**N/A**
K.1	Making and breaking capacity		**N/A**
K.2	Thermostat reliability; operating voltage (V) .....:		**N/A**
K.3	Thermostat endurance test; operating voltage (V) .....:		**N/A**
K.4	Temperature limiter endurance; operating voltage (V) .....:		**N/A**
K.5	Thermal cut-out reliability		**N/A**
K.6	Stability of operation		**N/A**
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		**P**
L.1	Typewriters		**N/A**
L.2	Adding machines and cash registers		**N/A**
L.3	Erasers		**N/A**
L.4	Pencil sharpeners		**N/A**
L.5	Duplicators and copy machines		**N/A**
L.6	Motor-operated files		**N/A**
L.7	Other business equipment		**P**

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Clause	Requirement + Test	Result - Remark	Verdict

M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		**N/A**
M.1	Introduction		**N/A**
M.2	Method A		**N/A**
M.3	Method B		**N/A**
M.3.1	Ringing signal		**N/A**
M.3.1.1	Frequency (Hz) ..... :		—
M.3.1.2	Voltage (V) ..... :		—
M.3.1.3	Cadence; time (s), voltage (V) ..... :		—
M.3.1.4	Single fault current (mA) ..... :		—
M.3.2	Tripping device and monitoring voltage ..... :		**N/A**
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		**N/A**
M.3.2.2	Tripping device		**N/A**
M.3.2.3	Monitoring voltage (V) ..... :		**N/A**

N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		**N/A**
N.1	ITU-T impulse test generators		**N/A**
N.2	IEC 60065 impulse test generator		**N/A**

P	**ANNEX P, NORMATIVE REFERENCES**		—

Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		**P**
	- Preferred climatic categories ..... :	Approved sources of varistor used.	**P**
	- Maximum continuous voltage ..... :		**P**
	- Combination pulse current ..... :		**P**
	Body of the VDR Test according to IEC60695-11-5..... :		**P**
	Body of the VDR. Flammability class of material (min V-1)..... :	(See appended table 1.5.1)	**P**

R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		**N/A**
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		**N/A**
R.2	Reduced clearances (see 2.10.3)		**N/A**

S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
S.1	Test equipment		**N/A**
S.2	Test procedure		**N/A**
S.3	Examples of waveforms during impulse testing		**N/A**
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		**N/A**
			—
U	**Annex U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		**P**
		Approved TIW used	—
V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		**P**
V.1	Introduction		**P**
V.2	TN power distribution systems		**P**
W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		**N/A**
W.1	Touch current from electronic circuits		**N/A**
W.1.1	Floating circuits		**N/A**
W.1.2	Earthed circuits		**N/A**
W.2	Interconnection of several equipments		**N/A**
W.2.1	Isolation		**N/A**
W.2.2	Common return, isolated from earth		**N/A**
W.2.3	Common return, connected to protective earth		**N/A**
X	**ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		**N/A**
X.1	Determination of maximum input current		**N/A**
X.2	Overload test procedure		**N/A**
Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		**N/A**
Y.1	Test apparatus ..... :		**N/A**
Y.2	Mounting of test samples ..... :		**N/A**
Y.3	Carbon-arc light-exposure apparatus ..... :		**N/A**
Y.4	Xenon-arc light exposure apparatus ..... :		**N/A**
Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**		**P**
AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**		**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict

BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**	—

CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		**N/A**
CC.1	General		**N/A**
CC.2	Test program 1……..:		**N/A**
CC.3	Test program 2……..:		**N/A**
CC.4	Test program 3.....:		**N/A**
CC.5	Compliance.....:		**N/A**

DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**		**N/A**
DD.1	General		**N/A**
DD.2	Mechanical strength test, variable N……..:		**N/A**
DD.3	Mechanical strength test, 250N, including end stops……:		**N/A**
DD.4	Compliance……..:		**N/A**

EE	**ANNEX EE, Household and home/office document/media shredders**		**N/A**
EE.1	General		**N/A**
EE.2	Markings and instructions		**N/A**
	Use of markings or symbols……:		**N/A**
	Information of user instructions, maintenance and/or servicing instructions……:		**N/A**
EE.3	Inadvertent reactivation test……..:		**N/A**
EE.4	Disconnection of power to hazardous moving parts:		**N/A**
	Use of markings or symbols……:		**N/A**
EE.5	Protection against hazardous moving parts		**N/A**
	Test with test finger (Figure 2A) ……:		**N/A**
	Test with wedge probe (Figure EE1 and EE2) ……:		**N/A**

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Enclosure	SABIC Innovative Plastics Japan L L C	940(f1)	V-0, minimum 1.5 mm thickness, 120 °C	--	UL
AC Inlet series(CON1)	Shenzhen Kangyongda Electronics Co Ltd	DE-14	10A, 250Vac, C14	IEC/EN 60320-1	VDE UL
(Alternative)	Rong Feng Industrial Co., Ltd.	SS-120	10A, 250Vac, C14	IEC/EN 60320-1	VDE UL
Output cord (For output current less than 3A)	ATLAS WIRE CORP	2464	22 AWG, 80 deg C, 300 Vac, Cable flame.	--	UL
(Alternative)	Interchangeable	2464	22 AWG, 80 deg C, 300 Vac, Cable flame.	--	UL
Output cord (For output current 3A-6A)	ATLAS WIRE CORP	2464	Min.18 AWG, 80 deg C, 300 Vac, Cable flame.	--	UL
(Alternative)	Interchangeable	2464	Min.18 AWG, 80 deg C, 300 Vac, Cable flame.	--	UL
Output cord (For output current 6A-10A)	ATLAS WIRE CORP	2464	Min. 16 AWG, 80 deg C, 300 Vac, Cable flame.	--	UL
(Alternative)	Interchangeable	2464	Min. 16 AWG, 80 deg C, 300 Vac, Cable flame.	--	UL
PCB	Zhuhai Jiana	JN-01	V-1, 130 °C.	--	UL
(Alternative)	Interchangeable	Interchangeable	V-1 or better, 130°C	--	UL
Fuse (F1)	Shenzhen Lanson Electronics Co Ltd	3K	T3.15A, 250Vac, Sub-miniature type	IEC/EN 60127-1 IEC/EN 60127-3	VDE UL
(Alternative)	Dongguan Better Electronictechnology Co Ltd	932	T3.15A, 250Vac, Sub-miniature type	IEC/EN 60127-1 IEC/EN 60127-3	VDE UL
(Alternative)	Dongguan Hongda Electronic Technology Co Ltd	31TD	T3.15A, 250Vac, Sub-miniature type	IEC/EN 60127-1 IEC/EN 60127-3	VDE UL

Varistor (MOV1)	Thinking Electronic Industrial Co Ltd	TVR10471	Min. 300Vac, min. 385Vdc, fulfilled 6kV/3kA pulse test. The body min. V-1	IEC/EN 61051-1, IEC/EN 61051-2, IEC/EN 60950-1 2nd Annex Q	VDE UL
(Alternative)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co Ltd	10D471K	Min. 300Vac, min. 385Vdc, fulfilled 6kV/3kA pulse test. The body min. V-1	IEC/EN 61051-1, IEC/EN 61051-2, IEC/EN 60950-1 2nd Annex Q	VDE UL
Line Filter (T1)	Shenzhen WZY Technology Co., Ltd.	PQ2625	N1: Pin 1-3: Φ0.10x*40Px40Ts N2: Pin 6-4: Φ0.30x7Ts 130°C	--	Tested with appliance
- Magnet wire	Interchangeable	Interchangeable	130°C	--	UL
- Bobbin	Sumitomo Bakelite Co Ltd	PM-9820	Phenolic, rated V-0, 150 °C, minimum thickness 0.71 mm.	--	UL
Insulation tape for heat sink	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	CT-280B	130 °C	--	UL
(Alternative)	3M Company Electrical Markets Div (EMD)	1318-1(a)	130 °C	--	UL
Bleeder Resistor (R1, R2, R3, R4)	Interchangeable	Interchangeable	1.0Mohm, min.1/4W	--	Tested with appliance
Bridge diode (BD1)	Interchangeable	Interchangeable	Min. 2.0A, min. 400V	--	Tested with appliance
Electrolytic Cap. (EC1)	Interchangeable	Interchangeable	47-180µF, Min. 400Vdc, 105°C	--	Tested with appliance
Mosfet (Q1)	Interchangeable	Interchangeable	Min.5.0A, min. 400V	--	Tested with appliance
X-Capacitor (CX2)	Carli Electronics Co Ltd	MPX	Maximum 0.47µF, minimum 250Vac, 110 °C, X2 type	IEC/EN 60384-14	VDE
Bridge-Capacitors (CY1, CY2) (Optional)	Shenzhen Haotian Electronic Co Ltd	HT	Maximum 1000pF, minimum 250Vac, 125 °C, Y1 type.	IEC/EN 60384-14	VDE
Bridge-Capacitors (CY3) (Optional)	Shenzhen Haotian Electronic Co Ltd	HT	Maximum 2200pF, minimum 250Vac, 125 °C, Y1 type.	IEC/EN 60384-14	VDE
Photo Coupler (IC3)	Bright Led Electronics Corp	BPC-817C	Cr.&Cl.=min.7.62 mm Dti.=min>0.4mm Minimum110°C	IEC/EN 60950-1, IEC/EN 60747-5-2, IEC/EN 60747-5-5	VDE UL

Transformer (T2)	Shenzhen Wanzhiyu Technology Co Ltd	TF32-2501-039	Pri. Winding: N2 (pin 1-2) Φ0.37mm x 2p x 16Ts N3a (pin 4-6) Φ0.25mm x 1p x 6Ts N3b (pin 5-6) Φ0.25mm x 1p x 3Ts N5 (pin 2-3) Φ0.37mm x 2p x 16Ts Sec. Winding: N1, N4 (pin CT1-CT2) Φ0.55mm x 4p x 18Ts Class B	Applicable part of IEC/EN 60950-1 and according to IEC/EN 60085	Tested with appliance
Component used in T2					
- Bobbin	Sumitomo Bakelite Co Ltd	PM-9820	Phenolic, rated V-0, 150 °C, minimum thickness 0.71 mm.	--	UL
-Core	Interchangeable	Interchangeable	Ferrite, overall size: 32.5mm by 22mm by 26mm	--	--
- Magnet wire	Tongling Nonferrous Copper Crown Electrical Co., Ltd	UEW	130 °C	--	UL
- Triple insulated wire	Furukawa Electric Co Ltd	TEX-E	Class B	IEC/EN 60950-1	UL VDE
- Insulation Tape	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	CT-280B	130 °C	--	UL
(Alternative)	3M Company Electrical Markets Div (EMD)	1318-1(a)	130 °C	--	UL
- Varnish used	John C Dolph Co	BC-346A	Rated minimum 130 °C.	--	UL
- Tubing	Great Holding Industrial Co Ltd	TFT	Rated minimum 200 °C, VW-1.	--	UL
Mylar sheet	Formex, Div Of Illinois Tool Works Inc, Formerly	AS-100	Min. V-2, 110 °C, Thickness min. 0.4mm	--	UL
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

1.5.1	TABLE: Opto Electronic Devices	P
Manufacturer.....:	See appended table 1.5.1(component list)	
Type .....:	See appended table 1.5.1(component list)	
Separately tested .....:	See appended table 1.5.1(component list)	
Bridging insulation.....:		
External creepage distance .....:	See appended table 1.5.1(component list)	
Internal creepage distance .....:	See appended table 1.5.1(component list)	
Distance through insulation .....:	See appended table 1.5.1(component list)	
Tested under the following conditions.....:		
Input .....:	--	
Output.....:	--	
supplementary information		

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Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
Model YHY-12010000						
90/50Hz	1.546	--	138.6	F1	1.546	Output : DC12V 10A
90/60Hz	1.545	--	138.7	F1	1.545	Output : DC12V 10A
100/50Hz	1.381	2.5	137.4	F1	1.381	Output : DC12V 10A
100/60Hz	1.380	2.5	137.7	F1	1.380	Output : DC12V 10A
240/50Hz	0.573	2.5	133.6	F1	0.573	Output : DC12V 10A
240/60Hz	0.576	2.5	134.0	F1	0.576	Output : DC12V 10A
264/50Hz	0.544	--	133.6	F1	0.544	Output : DC12V 10A
264/60Hz	0.548	--	133.7	F1	0.548	Output : DC12V 10A
Model YHY-24005000						
90/50Hz	1.494	--	133.8	F1	1.494	Output : DC24V 5A
90/60Hz	1.492	--	134.0	F1	1.492	Output : DC24V 5A
100/50Hz	1.334	2.5	132.8	F1	1.334	Output : DC24V 5A
100/60Hz	1.339	2.5	133.0	F1	1.339	Output : DC24V 5A
240/50Hz	0.562	2.5	130.9	F1	0.562	Output : DC24V 5A
240/60Hz	0.569	2.5	131.3	F1	0.569	Output : DC24V 5A
264/50Hz	0.531	--	130.7	F1	0.531	Output : DC24V 5A
264/60Hz	0.532	--	131.4	F1	0.532	Output : DC24V 5A
Supplementary information:						

2.1.1.5 c) 1)	TABLE: max. V, A, VA test	P

Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
Model YHY-12010000				
12	10	12.29	11.4	135.1
Model YHY-24005000				
24	5	24.23	5.80	139.3
supplementary information:				
Supplied by 264V/60Hz				

2.1.1.7	TABLE: discharge test			P
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments
At input L/N pin	0.47	0.5	1.5	Vpeak=352 37%* V peak =130.2 V

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Note:
Input: 264V, 60Hz;
Overall capacity: 0.47μF Max.
Discharge resistor: R1=R2=R3=R4=1.0Mohm Max.
Please see appended table 1.5.1

2.2	TABLE: evaluation of voltage limiting components in SELV circuits	P

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
Model YHY-12010000			
T2 pin CT1-CT2	96.0	--	
T2 pin CT1 to After Q5 (between CE3)	--	17.5	After Q5
Model YHY-24005000			
T2 pin CT1-CT2	84.0	--	
T2 pin CT1 to After Q5 (between CE3)	--	29.8	After Q5

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
Model YHY-24005000 Q5 D-S Short circuit	0 (Uint shutdown,no damaged, no hazard)
Model YHY-12010000 Q5 D-S Short circuit	0 (Uint shutdown,no damaged, no hazard)
supplementary information:	
Supplied by 264V/60Hz	

2.4.2	TABLE: limited current circuit measurement				P
Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments
CY3	0.26	0.13	60	42.0	CY3=2200pF
Note(s): supplied with 264V, 60Hz. 2000ohm resistor used for test.					

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2.5	TABLE: Limited power sources	N/A

Circuit output tested:

Note: Measured Uoc (V) with all load circuits disconnected:

Components	Sample No.	Uoc (V)	I_{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--

supplementary information:

S-C=Short circuit, O-C=Open circuit

2.10.2	Table: working voltage measurement	P

Location	RMS voltage (V)	Peak voltage (V)	Comments
Model: YHY1210000			
T2 pin 1-CT1	328	496	
T2 pin 3-CT1	293	400	
T2 pin 4-CT1	181	392	
T2 pin 6-CT1	181	376	
T2 pin 1-CT2	**340**	**512**	**Max Vpeak Vrms**
T2 pin 3-CT2	293	392	
T2 pin 4-CT2	185	464	
T2 pin 6-CT2	182	416	
IC3 pin 1-3	179	376	
IC3 pin 1-4	178	376	
IC3 pin 2-3	180	376	
IC3 pin 2-4	180	376	
CY3 pri-sec.	173	368	
Trace(R43-R39） - Trace(IC3 pin 2)	180	372	
Trace(R43-R39) - Trace(R108-R113)	178	372	
Model: YHY2405000			
T2 pin 1-CT1	**372**	544	**Max Vrms**
T2 pin 3-CT1	282	384	
T2 pin 4-CT1	190	408	
T2 pin 6-CT1	189	384	
T2 pin 1-CT2	370	**552**	**Max Vpeak**

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T2 pin 3-CT2	284	392	
T2 pin 4-CT2	198	488	
T2 pin 6-CT2	192	440	
IC3 pin 1-3	188	384	
IC3 pin 1-4	187	384	
IC3 pin 2-3	189	392	
IC3 pin 2-4	188	384	
CY3 pri-sec.	173	368	
Trace(R43-R39）- Trace(IC3 pin 2)	187	384	
Trace(R43-R39) - Trace(R108-R113)	188	384	
supplementary information:			
Input 240V 60Hz			

2.10.3 and 2.10.4	**TABLE: Clearance and creepage distance measurements**					**P**
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Functional:						
Line trace to Neutral trace before fuse F1	420	250	1.5	3.0	2.5	3.0
PCB trace under fuse F1	420	250	1.5	2.3	2.5	2.6
Line trace to primary trace	420	250	1.5	3.0	2.5	3.0
Basic/supplementary:						
Two pin of CY1	420	250	2.0	2.5	2.5	3.0
Two pin of CY2	420	250	2.0	2.5	2.5	3.0
Pin of LF2 to protective earth terminal	420	250	2.0	2.5	2.5	3.0
Reinforced:						
Primary heat sink to accessible enclosure	420	250	4.0	10.0	5.0	10.0
PCB: primary → secondary traces under IC3	420	250	4.0	7.0	5.0	7.0
PCB: primary → secondary traces under CY3	420	250	4.0	7.0	5.0	7.0
Unit: transformer core to C101 body(with 10N)	552	372	4.4	7.0	7.5	8.0
Unit: transformer core to CY3 secondary pin (with 10N)	552	372	4.4	7.0	7.5	8.0

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Clause	Requirement + Test	Result - Remark	Verdict

PCB: primary to secondary traces under transformer (T2)	552	372	4.4	7.0	7.5	9.0
Transformer (T2): primary winding to secondary winding	552	372	4.4	10.0	7.5	10.0
Transformer (T2): core to secondary winding	552	372	4.4	10.0	7.5	10.0

Supplementary information:

1. Output wire, T2 secondary wire are additional fixed by glue.
2. At least two layers of tape around the primary and secondary heat sink.
3. Transformer core considered as primary circuit.
4 Unless otherwise specified, the worst conditions of Cl. & Cr. in above mentioned locations have been considered and listed.

2.10.5	TABLE: Distance through insulation measurements				P
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test volt-age (V)	Required DTI (mm)	DTI (mm)
Enclosure	420	250	AC 3000	0.4	1)
Optocoupler	420	250	AC 3000	0.4	1)
Insulation sheet	420	250	AC 3000	0.4	1)

Supplementary information:
1). See appended table 1.5.1.

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4.3.8	TABLE: Batteries									N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available										
Is it possible to install the battery in a reverse polarity position?										
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition										
Max. current during fault condition										
Test results:										Verdict
- Chemical leaks										
- Explosion of the battery										
- Emission of flame or expulsion of molten metal										
- Electric strength tests of equipment after completion of tests										
Supplementary information:										

4.3.8	TABLE: Batteries	N/A
Battery category .....: (Lithium, NiMh, NiCad, Lithium Ion …) Manufacturer .....: Type / model .....: Voltage.....: Capacity.....: mAh Tested and Certified by (incl. Ref. No.) .....: Circuit protection diagram:		

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MARKINGS AND INSTRUCTIONS (1.7.13)	
Location of replaceable battery	
Language(s) ……:	
Close to the battery ……:	
In the servicing instructions ……:	
In the operating instructions ……..:	

4.5	TABLE: Thermal requirements					P
	Supply voltage (V)	See below.				—
	Ambient T_{min} (°C)	--	--	--	--	—
	Ambient T_{max} (°C)	--	--	--	--	—
Maximum measured temperature T of part/at.....:		T (°C)				Allowed T_{max} (°C)
Model: YHY- 12010000		90V/50 Hz		264V/60Hz		--
		Label up	Label down	Label up	Label down	
AC Inlet		64.3	65.7	52.8	54.3	70
CY2		83.3	82.9	65.9	65.8	125
LF1		88.4	89.9	70.2	71.0	130
LF2		90.5	92.1	69.3	70.2	130
LF3		99.8	102.1	72.8	73.5	130
L1		91.3	93.8	72.3	73.6	105
CX2		86.1	87.9	69.1	70.2	110
L1		91.3	93.8	69.1	73.6	105
MOV1		83.8	84.1	68.5	69.2	85
PCB under DB1		85.9	96.8	77.8	82.5	130
T1 winding-(PFC)		94.1	101.3	74.0	75.2	130
T1 core-(PFC)		88.9	91.2	71.9	73.0	130
PCB under Q1		99.4	101.1	81.4	81.6	130
PCB under Q2		92.4	102.9	80.0	84.5	130
PCB under near Q5		91.7	104.2	81.8	83.0	130
EC1		98.9	94.7	80.1	81.5	105
IC3		90.3	98.9	78.0	79.2	110
T2 winding		96.5	93.9	81.5	83.0	110
T2 core		91.1	93.4	79.1	78.1	110
CY3		94.6	100.6	80.8	81.2	125
L3		97.5	100.8	86.0	88.1	130
Output wire		78.6	76.6	76.8	73.5	80

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Clause	Requirement + Test	Result - Remark	Verdict

Enclosure inside near T1 top	71.8	70.9	61.1	65.4	120
Enclosure outside near T1 top	66.8	64.3	57.5	55.3	95
Enclosure inside near T1 bottom	72.2	79.7	62.2	60.3	120
Enclosure outide near T1 bottom	63.0	70.1	55.1	58.6	95
Ambient	26.9	27.6	26.9	27.7	--

Supplementary information:

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:
The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described above.
With a rated maximum ambient temperature of 25°C, the maximum temperature are calculated as follows:

Winding components providing safety isolation:
- Class B → Tmax = 120°C-10°C = 110°C (10°C decreased by thermocouple method)

Operator touchable surface with maximum temperature rise of:
- 95°C
For the other components temperature limit, see appended table 1.5.1.

4.5	TABLE: Thermal requirements					P
	Supply voltage (V)	See below.				—
	Ambient T_{min} (°C)	--	--	--	--	—
	Ambient T_{max} (°C)	--	--	--	--	—
Maximum measured temperature T of part/at.....:		T (°C)				Allowed T_{max} (°C)
Model: YHY- 24005000		90V/50 Hz		264V/60Hz		--
		Label up	Label down	Label up	Label down	
AC Inlet		65.2	66.0	55.0	56.6	70
CY2		82.6	79.6	66.0	65.6	125
LF1		94.4	92.0	70.9	70.7	130
LF2		90.2	88.5	70.0	70.1	130
LF3		89.1	87.8	68.6	68.5	130
L1		97.2	95.9	73.2	73.8	105
CX2		84.3	82.7	69.0	69.3	110
L1		92.5	90.9	78.3	78.8	105
MOV1		79.7	76.1	66.1	65.3	85

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Clause	Requirement + Test	Result - Remark	Verdict

PCB under DB1	84.2	80.1	82.5	65.7	130
T1 winding-(PFC)	91.9	90.4	74.9	75.4	130
T1 core (PFC)	85.4	83.8	72.2	73.5	130
PCB under Q1	93.4	91.3	77.3	77.6	130
PCB under Q2	93.0	92.1	82.5	83.7	130
PCB under near Q5	87.4	85.0	80.1	80.0	130
EC1	88.2	85.4	79.4	79.8	105
IC3	100.7	99.2	90.8	91.8	110
T2 winding	88.8	87.1	78.8	79.6	110
T2 core	87.9	85.0	78.1	78.0	110
CY3	88.6	85.7	80.6	81.1	125
L3	71.6	68.1	64.7	64.6	130
Output wire	68.6	61.8	59.9	56.7	80
Enclosure inside near T1 top	65.2	66.0	55.0	56.6	120
Enclosure outside near T1 top	64.8	55.5	54.2	51.6	95
Enclosure inside near T1 bottom	66.9	68.2	58.7	62.6	120
Enclosure outide near T1 bottom	60.1	64.1	52.7	59.2	95
Ambient	27.6	25.4	27.8	27.6	--

Supplementary information:

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:
The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described above.
With a rated maximum ambient temperature of 25°C, the maximum temperature are calculated as follows:

Winding components providing safety isolation:
- Class B → Tmax = 120°C-10°C = 110°C (10°C decreased by thermocouple method)

Operator touchable surface with maximum temperature rise of:
- 95°C
For the other components temperature limit, see appended table 1.5.1.

4.5.5	TABLE: Ball pressure test of thermoplastic parts		N/A
	Allowed impression diameter (mm) .....:	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)
--	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:
The bobbin material of transformer (T2) is phenolic, no test is needed.

4.7	TABLE: Resistance to fire				N/A
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
--	--	--	--	--	--
Supplementary information: See table 1.5.1					

5.1	TABLE: touch current measurement		P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions
AC input to output (-)	0.02	0.25	To earth parts, SW “e” closed condition.
AC input to output (+)	0.01	0.25	To earth parts, SW “e” closed condition.
AC input to enclosure (with metal foil)	0.007	0.25	To plastic enclosure wrapped with metal foil, SW “e” closed condition.
AC input to PE	0.32	3.5	To plastic enclosure wrapped with metal foil, SW “e” opened condition.
Supplementary information:			
Supplied with 264V/60Hz.			

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests		P
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Functional:			
Different polarity of power supply (fuse disconnection)	AC	1500	No
Basic/supplementary:			
Unit: Primary circuit to PE	AC	1500	No
Reinforced:			
Unit: Primary circuit to secondary circuit	AC	3000	No
Unit: Primary circuit to enclosure	AC	3000	No
Transformer: Primary winding to secondary winding	AC	3000	No
Transformer: Core to secondary winding	AC	3000	No
1 layer Insulation tape	AC	3000	No
Insulation sheet	AC	3000	No
Supplementary information: Core of transformer T2 is considered as primary circuit.			

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5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C) .....:	25°C (if not specified)	—
	Power source for EUT: ManuFacturer, model/type, output rating .....:	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Model: YHY-12010000						
Transformer	o-l	240	9h10min	F1	0.579→0.595 →0.617→ 0.634→0.042	Measured maximum temperature rise as below: T2 coil: 113.2 °C T2 core: 98.9 °C Ambient: 28.8 °C Max. load current 10.7A, increase to 11.4 A then output shut down NC, NT, NB, CT
Output	o-l	240	9h10min	F1	0.562→0.580 →0.602→ 0.619→0.042	Measured maximum temperature rise as below: T2 coil: 111.8 °C T2 core: 97.4 °C Ambient: 28.8 °C Max. load current 10.7A, increase to 11.4A then output shut down NC, NT, NB, CT
IC3 pin 1-2	SC	240	1S	F1	0	F1 opened immediately, no hazard
T2 pin CT1-CT2	SC	240	1S	F1	0	F1 opened immediately, no hazard

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IC3 pin 1	OC	240	10min	F1	0.044	Unit shut down immediately, no damaged, no hazard.
DB1 pin "AC" to "V+"	SC	240	1S	F1	0	F1 opened immediately, no hazard
C1	SC	240	1S	F1	0	F1 opened immediately, no hazard
MOV1	SC	240	1S	F1	0	F1 opened immediately, no hazard
Q1 D-S	SC	240	1S	F1	0	F1 opened immediately, no hazard
Q2 D-S	SC	240	1S	F1	0	F1 opened immediately, no hazard
Q2 G-D	SC	240	1S	F1	0	F1 opened immediately, no hazard
Q2 G-S	SC	240	10min	F1	0.042	Unit shut down immediately, no damaged, no hazard.
T2 pin 4-6	SC	240	10min	F1	0.042	Unit shut down immediately, no damaged, no hazard.
Model: YHY-24005000						
Transformer	o-l	240	8h30min	F1	0.566→0.607 →0.628→ 0.650→0.042	Measured maximum temperature rise as below: T2 coil: 92.4 °C T2 core: 84.0 °C Ambient: 27.9°C Max. load current 5.6A, increase to 5.8A then output shut down NC, NT, NB, CT
Output	o-l	240	8h30min	F1	0.5628→0.608 →0.629→ 0.674→0.042	Measured maximum temperature rise as below: T2 coil: 92.4 °C T2 core: 84.4 °C Ambient: 27.9°C Max. load current 5.6A, increase to 5.8 A then output shut down NC, NT, NB, CT
IC3 pin 1-2	SC	240	10min	F1	0.044	Unit shut down immediately, no damaged, no hazard.
T2 pin CT1-CT2	SC	240	10min	F1	0.044	Unit shut down immediately, no damaged, no hazard.

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IC3 pin 1	OC	240	10min	F1	0.044	Unit shut down immediately, no damaged, no hazard.
IC2 pin 2-6	SC	240	10min	F1	0.042	Unit Shut down immediately, no damaged, no hazard.
IC3 pin 3-4	SC	240	10min	F1	0.044	Unit shut down immediately, no damaged, no hazard.
IC3 pin 3	OC	240	10min	F1	0.044	Unit shut down immediately, no damaged, no hazard.
T2 pin 1-3	SC	240	1S	F1	0	F1 opened immediately, no hazard
R42	SC	240	2h40min	F1	1.078A	The normal operation. Measured maximum temperature rise as below*: T2 coil: 80.6 °C T2 core: 73.8 °C Ambient: 25.6 °C NT NC NB, CT

Supplementary information:

1) In fault column, where s-c=short-circuited, o-l= over-loaded, o-c= open-circuited.
2) All types of current fuse in table 1.5.1 are considered.

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Clause	Requirement + Test	Result - Remark	Verdict

C.2	TABLE: transformers T2						P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
Primary winding to secondary winding (internal and external)	RI	552	372	3000V	4.4	7.6	0.4
Core to secondary winding (internal and external)	RI	552	372	3000V	4.4	7.6	0.4
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
Primary winding to secondary winding (external)	RI			3000Vac	10.0	10.0	TIW used.
Core to secondary winding (external)	RI			3000Vac	10.0	10.0	TIW used.
supplementary information:							
Transformer T2: Concentric windings on PM9820 size phenolic bobbin. The whole transformer was wrapped with 2 layers of insulation tape. 2 layers on outer winding, Magnet wire used at primary winding, Triple insulation wire used at secondary winding. Insulation tube was added on outgoing lines of Pri. Winding and Sec. winding to prevent from contacting.The core was considered as primary part. More details see photo document.							