





TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number SHES190601702601 Date of issue 2019-08-28 Total number of pages 63 pages	
Applicant's name GlobTek, Inc. Address 186 Veterans Dr. Northvale, NJ 07647, USA	
Test specification: Standard IEC 60950-1: 2005 (Second Edition) + Am 1: 2009 + Am 2: 2013 Test procedure SGS CSTC Non-standard test method N/A	
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Test item description Trade Mark Manufacturer Model/Type reference Ratings	I.T.E. Power Supply  GlobTek® ,Inc. Same as applicant GT*91099-**** Input: 100 V - 240 V~; 50 Hz - 60 Hz; 1,5 A Output: 5 V – 48 V d.c.; Max. 60 W; Max 6A Class II

Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
Testing location/ address.....:		588 West Jindu Road, Xinqiao, Songjiang, 201512 Shanghai, China
<input type="checkbox"/>	Associated CB Testing Laboratory:	
Testing location/ address.....:		
Tested by (name + signature)		Ade Wu
Approved by (name + signature)		Lancer Lei
		
<input type="checkbox"/>	Testing procedure: TMP/CTF Stage 1:	
Testing location/ address.....:		
Tested by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: WMT/CTF Stage 2:	
Testing location/ address.....:		
Tested by (name + signature)		
Witnessed by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: SMT/CTF Stage 3 or 4:	
Testing location/ address.....:		
Tested by (name + signature)		
Witnessed by (name + signature)		
Approved by (name + signature)		
Supervised by (name + signature)		

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

Attachment 1 – 12 pages of Photos documents;
Attachment 2 – 2 pages of Circuit diagram and PCB layout;
Attachment 3 – 18 pages of European group differences and national differences.

Summary of testing:

The sample(s) tested complies with the requirements of IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013.

These tests fulfil the requirements of standard ISO/IEC 17025.

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

Unless otherwise stated, the models GTM91099-3009-4.0-T2, GTM91099-3009-4.0-P2, GTM91099-6015-3.0-T2, GTM91099-6015-3.0-P2, GTM91099-6024-6.0-T2, GTM91099-6024-6.0-P2, GTM91099-6048-T2, GTM91099-6048-P2 are tested to represent the worst case because the models have max. output current / output voltage / output VA.

Heating test (4.5):

T_{ma} = 40 °C (declared by manufacturer)

T_{amb} = 40 °C

Tests were carried out at 90 Va.c. and 264 Va.c..

Tests performed (name of test and test clause):

- ☒ 1. GENERAL
- ☒ 2. PROTECTION FROM HAZARDS
- ☒ 3. WIRING, CONNECTIONS AND SUPPLY
- ☒ 4. PHYSICAL REQUIREMENTS
- ☒ 5. ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS
- ☐ 6. CONNECTION TO TELECOMMUNICATION NETWORKS
- ☐ 7. CONNECTION TO CABLE DISTRIBUTION SYSTEMS

Testing location:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Summary of compliance with National Differences:
List of countries addressed

1. EU Group Differences (EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013)
2. EU Special National Conditions, EU A-deviations: None
3. BR which had not informed its national differences to IEC 60950-1: 2005 (Second Edition) + A1: 2009 + A2: 2013 in CB Bulletin.

The product fulfils the above requirements.

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 National Certification Body that own these marks.

(Additional requirements for markings. See 1.7 NOTE)

Marking for model GTM91099-6015-3.0-T2**Remark:**

- 1) The Height of CE logo shall not be less than 5 mm; Height of WEEE logo shall not be less than 7 mm;
- 2) As declared by the applicant, the importer (and manufacturer, if it is different)'s name, registered trade name or registered trade mark and the postal address will be marked on the products before being place on the market. The contact details shall be in a language easily understood by end-users and market surveillance authorities.
- 3) The marking plates for other models are of the same pattern except model name and ratings.

Test item particulars.....:	
Equipment mobility.....:	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains.....:	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition.....:	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: not directly connected to the mains
Mains supply tolerance (%) or absolute mains supply values	±10%
Tested for IT power systems	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A)	16 A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IP20
Altitude during operation (m)	≤ 4000 m
Altitude of test laboratory (m)	≤ 100 m
Mass of equipment (kg)	0,25 kg
Possible test case verdicts:	
- test case does not apply to the test object.....: N/A	
- test object does meet the requirement.....: P (Pass)	
- test object does not meet the requirement.....: F (Fail)	
Testing.....:	
Date of receipt of test item	2019-06-18
Date (s) of performance of tests	2019-06-18 to 2019-06-29
General remarks:	

The test results presented in this report relate only to the object tested.

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"(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 is used as the decimal separator.

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Unless otherwise stated: (a) the results shown in this document refer only to the sample(s) tested and (b) such sample(s) are retained for 1 month. This document cannot be reproduced except in full, without prior approval of the company.

Manufacturer's Declaration per sub-clause 4.2.5 of IEC60950-1:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided

☐ Yes
☒ Not applicable

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) : GlobTek (Suzhou) Co.,Ltd.

Building 4, 76 Jinling East Road, Suzhou Industrial Park, Suzhou, Jiangsu, 215021, China

General product information:

Product name	I.T.E. Power Supply
Model	GT*91099-*****
Explanation of model designation	<p>The 1st "*" can be "M" or "-" for market identification and not related to safety;</p> <p>The 2nd "*" denotes the rated output wattage designation, which can be "01" to "60";</p> <p>The 3rd "*" denotes the standard rated output voltage designation, which can be "09", "15", "24" and "48".</p> <p>The 4th "*" is optional deviation, subtracted from standard output voltage, which can be "-0,01" to "-23,9" with interval of 0,01, or blank to indicate no voltage different. The result by subtracting the deviation value from the standard rated output voltage denotes the rated output voltage, with a range of 5-48 volts;</p> <p>The 5th "*" = -T2/-T2A means different desktop class II with C8 AC inlet/ C18 AC inlet;</p> <p>The 5th "*" = -P2 means Encapsulated class II;</p> <p>The last "*" denote any six character = 0-9 or A-Z or () [] or – or blank for</p>

	marketing purposes.			
Power rating	Input: 100 V - 240 V~; 50 Hz - 60 Hz; 1,5 A Output: 5 V – 48 V d.c.; Max. 60 W; Max 6 A			
Functions	The EUT are switching power adaptors for ITE and designed for continuous operation. They are indoor use only.			

Model list for testing as below:

Model	output voltage	output current	output power	Transformer model (voltage) *)
GTM91099-3009-4.0-T2	5 V	6 A	30 W	XF00794 (For models with output voltage 5 V - 9 V)
GTM91099-6015-3.0-T2	12 V	5 A	60 W	XF00694 (For models with output voltage 9,1 V - 15 V)
GTM91099-6024-6.0-T2	18 V	3,33 A	60 W	XF00695 (For models with output voltage 15,1 V - 24 V)
GTM91099-6048-T2	48 V	1,25 A	60 W	XF00731 (For models with output voltage 24,1 V - 48 V)

Models not encapsulated are identical (have the same circuit diagram, PCB layout) except different appliance inlet type, transformer and secondary components.
Models with encapsulated construction are identical (have the same circuit diagram, PCB layout) except different transformer and secondary components.
Encapsulated models are similar with models not encapsulated except different enclosure type, appliance inlet, output cord and minor PCB layout different.

*) All transformer types except XF00794 are the same except secondary winding turns; Transformer XF00794 is the same as others except primary and secondary winding turns.


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

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

1	GENERAL		—
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1.5	Components		—
1.5.1	General		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	<p>Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard.</p> <p>Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard.</p> <p>Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.</p>	P
1.5.3	Thermal controls		N/A
1.5.4	Transformers		P
1.5.5	Interconnecting cables		P
1.5.6	Capacitors bridging insulation	Refer to appended table 1.5.1.	P
1.5.7	Resistors bridging insulation		P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
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		N/A
1.5.9	Surge suppressors		N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6	Power interface		—
1.6.1	AC power distribution systems		P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	Not a hand-held equipment.	N/A
1.6.4	Neutral conductor		P
1.7	Marking and instructions		—
1.7.1	Power rating and identification markings		P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:		N/A
	Rated voltage(s) or voltage range(s) (V)	100 V - 240 V	P
	Symbol for nature of supply, for d.c. only		N/A
	Rated frequency or rated frequency range (Hz)	50 Hz - 60 Hz	P
	Rated current (mA or A)	1,5 A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark	Trade mark:  GlobTek® ,Inc.	P
	Model identification or type reference	GT*91099-*****	P
	Symbol for Class II equipment only	Class II symbol used in label.	P
	Other markings and symbols	The additional marking does not give rise to misunderstandings.	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		P
1.7.2.2	Disconnect devices	Appliance inlet considered as disconnecting device.	N/A
1.7.2.3	Overcurrent protective device	Not pluggable equipment type B or permanently connected equipment.	N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool	No tool used for access to operator access area.	N/A
1.7.2.6	Ozone	Not produce ozone.	N/A
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	N/A
1.7.4	Supply voltage adjustment	No voltage adjustment.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Methods and means of adjustment; reference to installation instructions		N/A
1.7.5	Power outlets on the equipment	No power outlet.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Non-replaceable PCB-mount fuse: FS1: T3,15 AL / 250 V FS2: T3,15 AL / 250 V	P
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals		N/A
1.7.7.2	Terminals for a.c. mains supply conductors	Detachable power supply cord not provided.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators		N/A
1.7.8.1	Identification, location and marking	No control and indicator affects safety.	N/A
1.7.8.2	Colours	Safety is not involved.	N/A
1.7.8.3	Symbols according to IEC 60417		N/A
1.7.8.4	Markings using figures	No control uses figures.	N/A
1.7.9	Isolation of multiple power sources	No multiple power source.	N/A
1.7.10	Thermostats and other regulating devices	No such device.	N/A
1.7.11	Durability	The marking withstands required tests.	P
1.7.12	Removable parts		N/A
1.7.13	Replaceable batteries		N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations		N/A

2	PROTECTION FROM HAZARDS		—
2.1	Protection from electric shock and energy hazards		—
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts		P
	Test by inspection	See below.	P
	Test with test finger (Figure 2A)	No access.	P
	Test with test pin (Figure 2B)	No access.	P
	Test with test probe (Figure 2C)	No TNV circuit.	N/A
2.1.1.2	Battery compartments		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.3	Access to ELV wiring	No internal wiring at ELV.	N/A
	Working voltage (V_{peak} or V_{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	All accessible parts are separated from internal wiring at hazardous voltage by double or reinforced insulation.	N/A
2.1.1.5	Energy hazards	No energy hazard in operator access area. Checked by means of the test finger. (see appended table)	P
2.1.1.6	Manual controls	No such part.	N/A
2.1.1.7	Discharge of capacitors in equipment		P
	Measured voltage (V); time-constant (s)	588 ms	—
2.1.1.8	Energy hazards – d.c. mains supply	Not intended to be connected to d.c. mains supply.	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	No audio amplifier.	N/A
2.1.2	Protection in service access areas		P
2.1.3	Protection in restricted access locations	Not intended to be used in RAL.	N/A

2.2	SELV circuits		—
2.2.1	General requirements		P
2.2.2	Voltages under normal conditions (V)	(see appended table 2.2)	P
2.2.3	Voltages under fault conditions (V)	(see appended table 2.2)	P
2.2.4	Connection of SELV circuits to other circuits	Limited current circuit.	P

2.3	TNV circuits		—
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

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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		—
2.4.1	General requirements		P
2.4.2	Limit values	1) 28 mA; 2) 0,7 mA (measured with Annex D.1 circuit).	P
	Frequency (Hz)	1) 40KHz; 2) 60 Hz.	—
	Measured current (mA).....	1) 2,72 mA; 2) 0,46 mA.	—
	Measured voltage (V)	352 Vpeak	—
	Measured circuit capacitance (nF or μ F)		—
2.4.3	Connection of limited current circuits to other circuits	SELV circuit.	P
2.5	Limited power sources		—
	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		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :		—
	Current rating of overcurrent protective device (A) ..		—
2.6	Provisions for earthing and bonding		—
2.6.1	Protective earthing		N/A
2.6.2	Functional earthing		N/A
	Use of symbol for functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm ²), AWG :		—
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm ²), AWG :		—
	Protective current rating (A), cross-sectional area (mm ²), AWG :		N/A
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min) :		N/A
2.6.3.5	Colour of insulation :		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		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		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

2.7	Overcurrent and earth fault protection in primary circuits		—
2.7.1	Basic requirements	Protective devices are integrated in equipment.	P
	Instructions when protection relies on building installation	Not rely on building installation.	N/A
2.7.2	Faults not simulated in 5.3.7		P
2.7.3	Short-circuit backup protection		P
2.7.4	Number and location of protective devices :	Fuse (FS1 and FS2)	P

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Clause	Requirement + Test	Result - Remark	Verdict

2.7.5	Protection by several devices	Two protective devices provided.	P
2.7.6	Warning to service personnel		N/A

2.8	Safety interlocks		—
2.8.1	General principles	No safety interlock used.	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

2.9	Electrical insulation		—
2.9.1	Properties of insulating materials	Neither natural rubber, materials containing asbestos nor hygroscopic materials are used as insulation. No driving belts or couplings used.	P
2.9.2	Humidity conditioning	Tested for 120 hrs.	P
	Relative humidity (%), temperature (°C)	93%, 40 °C	—
2.9.3	Grade of insulation	Insulation is considered to be functional, basic, supplementary, reinforced or double insulation.	P
2.9.4	Separation from hazardous voltages		P
	Method(s) used	b) (Method 1)	—

2.10	Clearances, creepage distances and distances through insulation		—
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Clause	Requirement + Test	Result - Remark	Verdict
2.10.1	General	All hazardous voltage parts have been enclosed in power supply unit, which has been certified separately. All circuits external to the power supply are SELV or protective earth. The insulation is functional.	P
2.10.1.1	Frequency	considered	P
2.10.1.2	Pollution degrees	2	P
2.10.1.3	Reduced values for functional insulation		P
2.10.1.4	Intervening unconnected conductive parts		P
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		P
2.10.2.1	General		P
2.10.2.2	RMS working voltage	(See appended table 2.10.2)	P
2.10.2.3	Peak working voltage	(See appended table 2.10.2)	P
2.10.3	Clearances	Encapsulated type: GT*91099-***-P2*	P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply	Overvoltage Category II	P
	b) Earthed d.c. mains supplies		N/A
	c) Unearthed d.c. mains supplies		N/A
	d) Battery operation		N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits		N/A
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply		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		N/A
2.10.3.9	Measurement of transient voltage levels		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

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests	Material group IIIb is assumed to be used.	—
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		P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation		P
2.10.5.4	Semiconductor devices		P
2.10.5.5	Cemented joints		N/A
2.10.5.6	Thin sheet material – General		P
2.10.5.7	Separable thin sheet material	Refer to Annex C and appended table 2.10.5. Min. 2 layer of insulation tape used between primary winding and secondary winding as reinforced insulation.	P
	Number of layers (pcs)		—
2.10.5.8	Non-separable thin sheet material		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		P
2.10.5.12	Wire in wound components		P
	Working voltage		N/A
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation		N/A
	c) Compliance with Annex U	Triple insulation wire used as secondary winding.	P
	Two wires in contact inside wound component; angle between 45° and 90°	Insulation tube	P
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		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		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		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		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		N/A
2.10.12	Enclosed and sealed parts		N/A
3	WIRING, CONNECTIONS AND SUPPLY		—
3.1	General		—
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring.	P
3.1.2	Protection against mechanical damage	Wires are adequately fixed to prevent excessive strain on wire and terminals and avoiding damage to the insulation of the conductors.	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.3	Securing of internal wiring	Internal wiring is secured against excessive strain, loosening of terminals and damage to the conductor insulation.	P
3.1.4	Insulation of conductors		P
3.1.5	Beads and ceramic insulators	No such component.	N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	P
3.1.8	Self-tapping and spaced thread screws		P
3.1.9	Termination of conductors	Terminations cannot become displaced so that clearances and creepage distances can be reduced.	P
	10 N pull test		P
3.1.10	Sleeving on wiring		N/A

3.2	Connection to a mains supply		—
3.2.1	Means of connection		P
3.2.1.1	Connection to an a.c. mains supply	The equipment is provided with appliance inlet.	P
3.2.1.2	Connection to a d.c. mains supply	Not intended to be connected to a d.c. mains supply.	N/A
3.2.2	Multiple supply connections		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 inlet is integrated in the equipment.	P
3.2.5	Power supply cords	No power supply cord provided.	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		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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) :		—
	Radius of curvature of cord (mm) :		—
3.2.9	Supply wiring space		N/A

3.3	Wiring terminals for connection of external conductors		—
3.3.1	Wiring terminals	Appliance inlet used.	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
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		—
3.4.1	General requirement		P
3.4.2	Disconnect devices	The appliance inlet will be acting as disconnect device.	P
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	No parts remain energized after the disconnect device is pull out.	N/A
3.4.5	Switches in flexible cords	No switch in flexible cord.	N/A
3.4.6	Number of poles - single-phase and d.c. equipment	The disconnect 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		N/A
3.4.9	Plugs as disconnect devices	The appliance coupler will be regarded as disconnect device, no warning is required.	N/A
3.4.10	Interconnected equipment	No interconnections using hazardous voltages.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.11	Multiple power sources		N/A
3.5	Interconnection of equipment		—
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits : SELV		P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection.	N/A
3.5.4	Data ports for additional equipment		N/A
4	PHYSICAL REQUIREMENTS		—
4.1	Stability		—
	Angle of 10°	< 7kg.	N/A
	Test force (N):	Not floor-standing equipment.	N/A
4.2	Mechanical strength		—
4.2.1	General		P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N	No hazard.	P
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	No hazard.	P
4.2.5	Impact test		P
	Fall test	No hazard.	P
	Swing test	No hazard.	P
4.2.6	Drop test; height (mm):	1000 mm	P
4.2.7	Stress relief test	92 °C; 7 h	P
4.2.8	Cathode ray tubes	No cathode ray tube.	N/A
	Picture tube separately certified:		N/A
4.2.9	High pressure lamps	No high pressure lamp.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N):	Not intended to be mounted on a wall or ceiling.	N/A
4.3	Design and construction		—
4.3.1	Edges and corners	All edges and corners are rounded and smoothed.	P
4.3.2	Handles and manual controls; force (N):		N/A
4.3.3	Adjustable controls	No adjustable control.	N/A
4.3.4	Securing of parts		P
4.3.5	Connection by plugs and sockets		P

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
4.3.8	Batteries		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 oil and grease.	N/A
4.3.10	Dust, powders, liquids and gases	Not intend to product dust, or using powders, liquids and gases.	N/A
4.3.11	Containers for liquids or gases	No such containers used.	N/A
4.3.12	Flammable liquids	No flammable liquids.	N/A
	Quantity of liquid (l)		N/A
	Flash point (°C)		N/A
4.3.13	Radiation		N/A
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation	No 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	No UV lamp used.	N/A
	Part, property, retention after test, flammability classification		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation	No UV radiation.	N/A
4.3.13.5	Lasers (including laser diodes) and LEDs		N/A
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)		
4.3.13.6	Other types		N/A
4.4	Protection against hazardous moving parts		—

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Clause	Requirement + Test	Result - Remark	Verdict
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		—
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per Annex L	Rated load with continuous operation.	—
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		—
4.6.1	Top and side openings		N/A
	Dimensions (mm)		—
4.6.2	Bottoms of fire enclosures		N/A
	Construction of the bottom, dimensions (mm) .. :		—
4.6.3	Doors or covers in fire enclosures	No cover can be removed by hand.	N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures	Slot openings in equipment < 0,9 mm in width. And the side openings are block off by inlet completely.	P
	Dimensions (mm)		—

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Clause	Requirement + Test	Result - Remark	Verdict
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		—
4.7.1	Reducing the risk of ignition and spread of flame		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		P
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure covers all parts.	P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P
4.7.3.1	General	Components and materials have adequate flammability classification. See appended table 1.5.1.	P
4.7.3.2	Materials for fire enclosures		P
4.7.3.3	Materials for components and other parts outside fire enclosures	No parts outside the fire enclosure.	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures		P
4.7.3.5	Materials for air filter assemblies	No air filter.	N/A
4.7.3.6	Materials used in high-voltage components	No high-voltage component.	N/A

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		—
5.1	Touch current and protective conductor current		—
5.1.1	General	(see appended Table 5.1)	P
5.1.2	Configuration of equipment under test (EUT)		N/A
5.1.2.1	Single connection to an a.c. mains supply		N/A
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		P
5.1.4	Application of measuring instrument	Measuring instrument D1 is used.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Supply voltage (V)	264 V, 60 Hz	—
	Measured touch current (mA)	(see appended table 5.1)	—
	Max. allowed touch current (mA)	0,25 mA	—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA)....		—
5.1.7	Equipment with touch current exceeding 3,5 mA		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	Not connected to a telecommunication network or cable distribution system.	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)		—
	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		—
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure		P

5.3	Abnormal operating and fault conditions		—
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	No motors.	N/A
5.3.3	Transformers	See Annex C and appended table C.2.	P
5.3.4	Functional insulation	Complies with a), b) and c).	P
5.3.5	Electromechanical components	No such components.	N/A
5.3.6	Audio amplifiers in ITE	No audio amplifier.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	No fire or molten metal occurred and no deformation of enclosure during the tests.	P
5.3.9.1	During the tests	No fire or molten metal occurred and no deformation of enclosure during the tests.	P
5.3.9.2	After the tests	Electric strength test made.	P
6	CONNECTION TO TELECOMMUNICATION NETWORKS		—
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		—
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		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		—
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		—
	Max. output current (A)		—
	Current limiting method		—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		—
7.1	General		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

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Clause	Requirement + Test	Result - Remark	Verdict
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

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		—
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)		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
A.3.3	Compliance criterion		N/A
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		—
B.1	General requirements		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
	Operating voltage (V)		—

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Clause	Requirement + Test	Result - Remark	Verdict

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		—
	Position	T1: Primary to secondary.	—
	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	Fuse in the circuit	—
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	Bobbin and insulation tape.	P

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		—
D.1	Measuring instrument	Figure D.1 used.	P
D.2	Alternative measuring instrument		N/A

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		—
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		—
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		—
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
G.4.2	Transients from telecommunication networks		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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)		—
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		—
	Metal(s) used :		—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		—
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)		—
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
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		—
M.1	Introduction		N/A
M.2	Method A		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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.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)		—
	- Preferred climatic categories		N/A
	- Maximum continuous voltage		N/A
	- Combination pulse current		N/A
	Body of the VDR Test according to IEC60695-11-5.....		N/A
	Body of the VDR. Flammability class of material (min V-1).....		N/A
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		—
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)		—
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		—
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		—
		The TIW of T1 was certified by UL.	—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		—
V.1	Introduction		P
V.2	TN power distribution systems		P
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		—
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)		—
X.1	Determination of maximum input current		P
X.2	Overload test procedure		P
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		—
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)		—
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		—

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Clause	Requirement + Test	Result - Remark	Verdict

BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
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CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		—
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		—
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		—
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

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

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⁾	
Plastic enclosure	TEIJIN	LN-1250P LN-1250G	115 °C; V-0; Min. thickness: 2,1 mm; PS	UL 94 IEC 60950-1: 2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL (E50075) & Tested with appliance	
Alternative	SABIC	SE1 SE1X	105 °C; V-1; Min. thickness: 2,1 mm; PS	UL 94 IEC 60950-1: 2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL (E45329) & Tested with appliance	
Alternative	SABIC	HF500R	125 °C; V-0; Min. thickness: 2,1 mm; PS	UL 94 IEC 60950-1: 2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL (E45329) & Tested with appliance	
Alternative	SABIC	CX7211	90 °C; V-0; Min. thickness: 2,1 mm; PS	UL 94 IEC 60950-1: 2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL (E45329) & Tested with appliance	
Appliance Inlet	Zhejiang Leci Electronics Co Ltd	DB-8	AC 250V; 2,5 A; C8	IEC 60320-1:2015 DIN EN 60320-1 (VDE 0625-1):2016-04; EN 60320-1:2015 + AC:2016	VDE (40032028)	
Alternative	Rich Bay Co Ltd	R-201SN90	AC 250V; 2,5 A; C8	IEC 60320-1:2015 DIN EN 60320-1 (VDE 0625-1):2016-04; EN 60320-1:2015 + AC:2016	VDE (40030384)	
Alternative	Sun Fair Electric Wire & Cable (HK) Co Ltd	S-01	AC 250V; 2,5 A; C8	IEC 60320-1:2015 DIN EN 60320-1 (VDE 0625-1):2016-04; EN 60320-1:2015 + AC:2016	VDE (40034449)	

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Fuse (FS1, FS2)	Walter Electronic Co Ltd	ICP	AC 250 V; T3,15 AL	DIN EN 60127-3 (VDE 0820-3):2015-11; IEC 60127-3:2015 EN 60127-3:2015 IEC 60127-1:2006 IEC 60127-1:2006/AMD1:2011 IEC 60127-1:2006/AMD2:2015 DIN EN 60127-1 (VDE 0820-1):2015-12; EN 60127-1:2006+A1:2011+A2:2015	VDE (40012824)
Alternative	Conquer	MST	AC 250 V; T3,15 AL	DIN EN 60127-3 (VDE 0820-3):2015-11; EN 60127-3:2015 IEC 60127-1:2006 IEC 60127-1:2006/AMD1:2011 IEC 60127-1:2006/AMD2:2015 IEC 60127-3:2015 DIN EN 60127-1 (VDE 0820-1):2015-12; EN 60127-1:2006+A1:2011+A2:2015	VDE (40017118)
Alternative	Ever Island	2010	AC 250 V; T3,15 AL	DIN EN 60127-3 (VDE 0820-3):2015-11; EN 60127-3:2015 IEC 60127-1:2006 IEC 60127-1:2006/AMD1:2011 IEC 60127-1:2006/AMD2:2015 IEC 60127-3:2015 DIN EN 60127-1 (VDE 0820-1):2015-12; EN 60127-1:2006+A1:2011+A2:2015	VDE (40018781)

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alternative	Sunny east	TSP	AC 250 V; T3,15 AL	DIN EN 60127-3 (VDE 0820-3):2015-11; EN 60127-3:2015 IEC 60127-1:2006 IEC 60127-1:2006/AMD1:2011 IEC 60127-1:2006/AMD2:2015 IEC 60127-3:2015 DIN EN 60127-1 (VDE 0820-1):2015-12; EN 60127-1:2006+A1:2011+A2:2015	VDE (40027173)
Alternative	Zhongshan Lanbao	RTI-10	AC 250 V; T3,15 AL	DIN EN 60127-3 (VDE 0820-3):2015-11; EN 60127-3:2015 IEC 60127-1:2006 IEC 60127-1:2006/AMD1:2011 IEC 60127-1:2006/AMD2:2015 IEC 60127-3:2015 DIN EN 60127-1 (VDE 0820-1):2015-12; EN 60127-1:2006+A1:2011+A2:2015	VDE (40017009)
X-Capacitor (CX1) (Optional)	Winday Electronic Industrial Co., Ltd	MPX	Min. AC 250V; Max. 0,33uF; Min. 100 °C; X2; 40/100/21/C	DIN EN 60384-14/A1 (VDE 0565-1-1/A1):2017-04; EN 60384-14:2013/A1:2016 IEC 60384-14:2013 IEC 60384-14:2013/AMD1:2016 DIN EN 60384-14 (VDE 0565-1-1):2014-04; EN 60384-14:2013-08	VDE (40018071)

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	ULTRA TECH XIPHI ENTERORISE CO LTD	HQX	Min. AC 250V; Max. 0,33uF; X2; 40/100/21/C	DIN EN 60384- 14/A1 (VDE 0565- 1-1/A1):2017-04; EN 60384- 14:2013/A1:2016 IEC 60384-14:2013 IEC 60384- 14:2013/AMD1:201 6 DIN EN 60384-14 (VDE 0565-1- 1):2014-04; EN 60384-14:2013-08	VDE (40015608)
Alternative	VIHAY Capacitors Belgium N V	F1772	Min. AC 250V; Max. 0,33uF; X2; 40/100/21/C	DIN EN 60384- 14/A1 (VDE 0565- 1-1/A1):2017-04; EN 60384- 14:2013/A1:2016 IEC 60384-14:2013 IEC 60384- 14:2013/AMD1:201 6 DIN EN 60384-14 (VDE 0565-1- 1):2014-04; EN 60384-14:2013-08	VDE (40005079)
Alternative	Tenta Electric Industrial Co., Ltd	MEX	Min. AC 250V; Max. 0,33uF; X2; 40/100/21/C	DIN EN 60384- 14/A1 (VDE 0565- 1-1/A1):2017-04; EN 60384- 14:2013/A1:2016 IEC 60384-14:2013 IEC 60384- 14:2013/AMD1:201 6 DIN EN 60384-14 (VDE 0565-1- 1):2014-04; EN 60384-14:2013-08	VDE (119119)
Alternative	DAIN ELECTRONICS CO LTD	MEX. MPX, NPX	Min. AC 250V; Max. 0,33uF; X2; 40/110/21/C	DIN EN 60384- 14/A1 (VDE 0565- 1-1/A1):2017-04; EN 60384- 14:2013/A1:2016 IEC 60384-14:2013 IEC 60384- 14:2013/AMD1:201 6 DIN EN 60384-14 (VDE 0565-1- 1):2014-04; EN 60384-14:2013-08	VDE (40018798)

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alternative	Sinhua Electronics (Huzhou) Co., Ltd	MPX	Min. AC 250V; Max. 0,33uF; X2; 40/100/21/C	DIN EN 60384-14/A1 (VDE 0565-1-1/A1):2017-04; EN 60384-14:2013/A1:2016 IEC 60384-14:2013 IEC 60384-14:2013/AMD1:2016 DIN EN 60384-14 (VDE 0565-1-1):2014-04; EN 60384-14:2013-08	VDE (40022417)
Alternative	FOSHAN SHUNDE CHUANG GE ELECTRONIC INDUSTRIAL CO LTD	MKP-X2	Min. AC 250V; Max. 0,33uF; X2; 40/100/21/C	DIN EN 60384-14/A1 (VDE 0565-1-1/A1):2017-04; EN 60384-14:2013/A1:2016 IEC 60384-14:2013 IEC 60384-14:2013/AMD1:2016 DIN EN 60384-14 (VDE 0565-1-1):2014-04; EN 60384-14:2013-08	VDE (40008922)
Y capacitor (CY1, CY2) optional	TDK CORP	CD	Min. AC 250V; Max. 2200pF; Y1; 25/85/56/B	DIN EN 60384-14/A1 (VDE 0565-1-1/A1):2017-04; EN 60384-14:2013/A1:2016 IEC 60384-14:2013 IEC 60384-14:2013/AMD1:2016 DIN EN 60384-14 (VDE 0565-1-1):2014-04; EN 60384-14:2013-08	VDE (40029780)
Alternative	WELSON INDUSTRIAL CO LTD	WD	Min. AC 250V; Max. 2200pF; Y1; 55/125/21/C	DIN EN 60384-14 (VDE 0565-1-1):2014-04; EN 60384-14:2013-08 IEC 60384-14(ed.4)	VDE (40016157)

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	SUCCESS ELECTRONICS CO LTD	SE, SB	Min. AC 250V; Max. 2200pF; Y1; 40/125/56/C	IEC 60384-14:2013 DIN EN 60384-14 (VDE 0565-1-1):2014-04; EN 60384-14:2013-08	VDE (40037221) VDE (40037218)
Alternative	WALSIN TECHNOLOGY CORP	AH	Min. AC 250V; Max. 2200pF; Y1; 40/125/21/C	EN 60384-14:2013/A1:2016 IEC 60384-14:2013/AMD1:2016 IEC 60384-14:2013	VDE (40001804)
Alternative	KUNSHAN WANSHENG ELECTRONICS CO LTD	CT7	Min. AC 250V; Max. 2200pF; Y1; 30/125/56/C	EN 60384-14:2013/A1:2016 IEC 60384-14:2013/AMD1:2016	VDE (40013601)
Alternative	MURATA MFG CO LTD	KX	Min. AC 250V; Max. 2200pF; Y1; 40/125/21/C	IEC 60384-14:2013 DIN EN 60384-14 (VDE 0565-1-1):2014-04; EN 60384-14:2013-08	VDE (40002831)
Line filter(LF2) 2)	ENG / Glob Tek / ZHIJIE / Top Nation / ZEAL / SHA JING ENSIGN	NF00031	130 °C	IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	Tested with appliance
Line filter(LF1) 2)	SUZHOU HEJIA ELECTRONICS CO., LTD	321-02482002(R)	130 °C	IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	Tested with appliance
PCB	Interchangeable	Interchangeable	Min. V-1; 130 °C; Min. thickness: 1,6mm	UL 94	UL
Opto-coupler (U1)	Everlight Electronics Co Ltd	EL817	See appended table 1.5.1	DIN EN 60747-5-5 (0884-5):2015-11; EN 60747-5-5:2011; A1:2015	VDE (132249)
Alternative	Cosmo Electroncis Corp	K1010, KP1010	See appended table 1.5.1	DIN EN 60747-5-5 (0884-5):2015-11; EN 60747-5-5:2011; A1:2015	VDE (101347)

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	Lite-On Technology Corp	LTV817	See appended table 1.5.1	IEC 60747-5-5:2007 IEC 60747-5-5:2007/AMD1:2013 DIN EN 60747-5-5 (0884-5):2015-11; EN 60747-5-5:2011; A1:2015	VDE (40015248)
Alternative	Fairchild	FOD817B	See appended table 1.5.1	IEC 60747-5-5:2007 EN 60747-5-5:2011	NCS/FI 21978 A1
Transformer (T1) (5 - 9 V) ²⁾	ENG / Glob Tek / ZHIJIE / ChangHong / SHA JING ENSIGN / ZEAL	XF00794	Class B	IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	Tested with appliance
Transformer (T1) (9,1 - 15 V) ²⁾	ENG / Glob Tek / ZHIJIE / ChangHong / SHA JING ENSIGN / ZEAL	XF00694	Class B	IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	Tested with appliance
Transformer (T1) (15,1 - 24 V) ²⁾	ENG / Glob Tek / ZHIJIE / ChangHong / SHA JING ENSIGN / ZEAL	XF00695	Class B	IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	Tested with appliance
Transformer (T1) (24,1 – 48 V) ²⁾	ENG / Glob Tek / ZHIJIE / ChangHong / SHA JING ENSIGN / ZEAL	XF00731	Class B	IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	Tested with appliance
Bobbin for all The transformer	CHANG CHUN PLASTICS	T375J	V-0; 150 °C; PHENOLIC	UL 94 UL746 IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL (E59481)
Alternative	CHANG CHUN PLASTICS	4130	V-0; 140 °C; Polybutylene Terephthalate (PBT)	UL 94 UL746 IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL (E59481) UL (E345326) & Tested with appliance

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	Sumitomo Bakelite	PM-9820	V-0; 150 °C; PHENOLIC	UL 94 UL746 IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL (E41429) & Tested with appliance
Insulation tape for all the transformer	3M	1350F 44 1350F (#), (#) is replaced with suffix B-1, B-2, W-1, W-2, Y-1 or Y-2	130 °C; PS	UL510 IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL (E17385) & Tested with appliance
Alternative	YAHUA	PZ	130 °C; Polyethylene	UL510 IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL (E324093) & Tested with appliance
Alternative	JINGJIANG JINGYI	JY25-A	130 °C; PS	UL510 IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL (E246950) & Tested with appliance
Heat Shrinkable Tube provided on HS2	Interchangeable	Interchangeable	Thickness min. 0,4mm	UL 224	UL
Triple insulation Wire for all the transformer	Furukawa	TEX-E	130 °C Min.	UL 2353 IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL(E206440) & Tested with appliance
Alternative	Great leoflon	TRW-B	130 °C Min.	UL 2353 IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL(E211989) & Tested with appliance

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alternative	Cosmolink	TIW-M	130 °C Min.	UL 2353 IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL (E213764) & Tested with appliance
Black insulation tape(between PWB and enclosure)	Interchangeable	Interchangeable	V-2; Thickness min. 0,4mm	UL 224 IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	UL Tested with appliance
Bleeder resistor (RS1, RS2)	Interchangeable	Interchangeable	470KΩ, 1/4W	IEC 60950-1:2005 + A1 + A2 EN 60950-1: 2006 + A11 + A1 + A12+ A2	Tested with appliance
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039; 2) T1 / LF2 / LF1 with the same model name from different manufacturers have the same specification.					

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

1.5.1	TABLE: Opto Electronic Devices	P
<p>Manufacturer : Everlight / Fairchild / Cosmo / Liteon</p> <p>Type..... : EL817 / FOD817B / K1010, KP1010 / LTV-817</p> <p>Separately tested : FI / N / FI / FI</p> <p>Bridging insulation : Reinforced insulation</p> <p>External creepage distance..... : 7,7 mm / 7,8 mm / 8 mm, 8 mm / 8 mm</p> <p>Internal creepage distance : 6,0 mm / 5,2 mm / 5,3 mm, 5,3 mm / 5,2 mm</p> <p>Distance through insulation : 0,5 mm / 0,6 mm / 0,5 mm, 0,5 mm / 0,6 mm</p> <p>Tested under the following conditions..... : 55/110/21; 30/100/21; 55/115/21; 55/110/21; reinforced insulation</p> <p>Input..... : --</p> <p>Output..... : --</p>		
supplementary information		

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

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (A)	Condition/status	
Test on 5 V (Model: GTM91099-3009-4.0-T2):							
90V/50Hz	0,790	--	37,6	FS1, FS2	0,790	Loaded with 5 V / 6 A.	
100V/50Hz	0,684	1,5	37,4	FS1, FS2	0,684	Loaded with 5 V / 6 A.	
240V/50Hz	0,317	1,5	36,5	FS1, FS2	0,317	Loaded with 5 V / 6 A.	
264V/50Hz	0,295	--	36,5	FS1, FS2	0,295	Loaded with 5 V / 6 A.	
90V/60Hz	0,717	--	37,4	FS1, FS2	0,717	Loaded with 5 V / 6 A.	
100V/60Hz	0,643	1,5	37,4	FS1, FS2	0,643	Loaded with 5 V / 6 A.	
240V/60Hz	0,308	1,5	36,5	FS1, FS2	0,308	Loaded with 5 V / 6 A.	
264V/60Hz	0,287	--	36,6	FS1, FS2	0,287	Loaded with 5 V / 6 A.	
Test on 12 V (Model: GTM91099-6015-3.0-T2):							
90V/50Hz	1,30	--	69,24	FS1, FS2	1,30	Loaded with 12 V / 5 A.	
100V/50Hz	1,18	1,5	68,76	FS1, FS2	1,18	Loaded with 12 V / 5 A.	
240V/50Hz	0,583	1,5	67,29	FS1, FS2	0,583	Loaded with 12 V / 5 A.	
264V/50Hz	0,548	--	67,83	FS1, FS2	0,548	Loaded with 12 V / 5 A.	
90V/60Hz	1,29	--	69,14	FS1, FS2	1,29	Loaded with 12 V / 5 A.	
100V/60Hz	1,16	1,5	68,61	FS1, FS2	1,16	Loaded with 12 V / 5 A.	
240V/60Hz	0,572	1,5	67,28	FS1, FS2	0,572	Loaded with 12 V / 5 A.	
264V/60Hz	0,538	--	67,67	FS1, FS2	0,538	Loaded with 12 V / 5 A.	
Test on 18 V (Model: GTM91099-6024-6.0-T2):							
90V/50Hz	1,27	--	68,52	FS1, FS2	1,27	Loaded with 18 V / 3,33 A.	
100V/50Hz	1,16	1,5	67,78	FS1, FS2	1,16	Loaded with 18 V / 3,33 A.	
240V/50Hz	0,574	1,5	66,15	FS1, FS2	0,574	Loaded with 18 V / 3,33 A.	
264V/50Hz	0,538	--	66,31	FS1, FS2	0,538	Loaded with 18 V / 3,33 A.	
90V/60Hz	1,27	--	68,33	FS1, FS2	1,27	Loaded with 18 V / 3,33 A.	
100V/60Hz	1,14	1,5	67,72	FS1, FS2	1,14	Loaded with 18 V / 3,33 A.	
240V/60Hz	0,563	1,5	66,07	FS1, FS2	0,563	Loaded with 18 V / 3,33 A.	
264V/60Hz	0,530	--	66,30	FS1, FS2	0,530	Loaded with 18 V / 3,33 A.	
Test on 48 V (Model: GTM91099-6048-T2):							

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
90V/50Hz	1,25	--	66,57	FS1, FS2	1,25	Loaded with 48 V / 1,25 A.
100V/50Hz	1,14	1,5	66,22	FS1, FS2	1,14	Loaded with 48 V / 1,25 A.
240V/50Hz	0,564	1,5	64,93	FS1, FS2	0,564	Loaded with 48 V / 1,25 A.
264V/50Hz	0,530	--	65,04	FS1, FS2	0,530	Loaded with 48 V / 1,25 A.
90V/60Hz	1,24	--	66,52	FS1, FS2	1,24	Loaded with 48 V / 1,25 A.
100V/60Hz	1,12	1,5	66,09	FS1, FS2	1,12	Loaded with 48 V / 1,25 A.
240V/60Hz	0,555	1,5	64,97	FS1, FS2	0,555	Loaded with 48 V / 1,25 A.
264V/60Hz	0,520	--	64,93	FS1, FS2	0,520	Loaded with 48 V / 1,25 A.
Supplementary information:						

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				P
Voltage (rated) (Vd.c.)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
Test on 5 V(Model: GTM91099-3009-4.0-T2):					
5	6	5,213	8,20	38,50	
Test on 12 V(Model: GTM91099-6015-3.0-T2):					
12	5	12,25	8,21	94,34	
Test on 18 V(Model: GTM91099-6024-6.0-T2):					
18	3,33	18,09	5,59	98,05	
Test on 48 V(Model: GTM91099-6048-T2):					
48	1,25	47,88	2,18	102,73	
supplementary information:					
The above measurements are the maximum values (max. V and max. A not obtained at the same time).					

2.1.1.5 c) 2)	TABLE: stored energy		N/A
Capacitance C (μF)	Voltage U (V)	Energy E (J)	
--	--	--	
supplementary information:			

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.		

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Clause	Requirement + Test	Result - Remark	Verdict

Test on 5 V(Model: GTM91099-3009-4.0-T2):

T1 output pin A - G	46,0	--	--
T1 output after DZ1	--	28	D3, D4

Test on 12 V (Model: GTM91099-6015-3.0-T2):

T1 output pin A - G	38,4	--	--
---------------------	------	----	----

Test on 18 V(Model: GTM91099-6024-6.0-T2):

T1 output pin A - G	56,4	--	--
T1 output pin after CS9	--	18,3	D3, D4

Test on 48 V(Model: GTM91099-6048-T2):

T1 output pin A - G	124,0	--	--
T1 output pin after D3	--	47,5	D3, D4
T1 output pin after C7	--	47,7	D3, D4

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)		
---	---	--	--

Test on 18 V(Model: GTM91099-6024-6.0-T2):

CS9 short-circuit	17,77 V d.c. (for output)
D3 short-circuit	Output down to 0 V ¹⁾

Test on 48 V(Model: GTM91099-6048-T2):

C7 short-circuit	47,68 V d.c. (for output)
RS17 short-circuit	47,68 V d.c. (for output)
D3 short-circuit	Output down to 0 V ¹⁾

Test on 5 V(Model: GTM91099-3009-4.0-T2):

D3 short-circuit	Output down to 0 V ¹⁾
------------------	----------------------------------

supplementary information:

1) Unit shut down.

2.5	TABLE: Limited power sources					N/A
Circuit output tested:						
Note: Measured Uoc (V) with all load circuits disconnected:						
Components	Test condition (Single fault)	Uoc (Vd.c.)	I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--
supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.2	Table: working voltage measurement			P
Location		Peak voltage (V)	RMS voltage (V)	Comments
Test on 5 V(Model: GTM91099-3009-4.0-T2):				
T1 pin 1 – pin A	468	352	--	
T1 pin 3 – pin A	376	276	--	
T1 pin 4 – pin A	348	174	--	
T1 pin 5 – pin A	424	174	--	
T1 pin 1 – pin G	468	354	--	
T1 pin 3 – pin G	416	278	--	
T1 pin 4 – pin G	356	174	--	
T1 pin 5 – pin G	392	174	--	
U1 pin 1 – pin 3	356	176	--	
U1 pin 1 – pin 4	352	174	--	
U1 pin 2 – pin 3	352	174	--	
U1 pin 2 – pin 4	348	174	--	
CY1 pin1 to CY2 pin2	348	172	--	
CY1	194	88,2	--	
CY2	120	71,4	--	
Test on 12 V(Model: GTM91099-6015-3.0-T2):				
T1 pin 1 – pin A	516	289	--	
T1 pin 3 – pin A	388	240	--	
T1 pin 4 – pin A	360	178	--	
T1 pin 5 – pin A	356	177	--	
T1 pin 1 – pin G	528	312	--	
T1 pin 3 – pin G	352	240	--	
T1 pin 4 – pin G	348	177	--	
T1 pin 5 – pin G	400	179	--	
U1 pin 1 – pin 3	360	185	--	
U1 pin 1 – pin 4	360	185	--	
U1 pin 2 – pin 3	356	182	--	
U1 pin 2 – pin 4	356	182	--	
CY1 pin1 to CY2 pin2	348	177		
Test on 18 V(Model: GTM91099-6024-6.0-T2):				
T1 pin 1 – pin A	520	281	--	
T1 pin 3 – pin A	404	240	--	
T1 pin 4 – pin A	368	181	--	

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Clause	Requirement + Test	Result - Remark	Verdict
T1 pin 5 – pin A	356	179	--
T1 pin 1 – pin G	544	299	--
T1 pin 3 – pin G	352	238	--
T1 pin 4 – pin G	352	178	--
T1 pin 5 – pin G	400	180	--
U1 pin 1 – pin 3	364	189	--
U1 pin 1 – pin 4	372	192	--
U1 pin 2 – pin 3	364	189	--
U1 pin 2 – pin 4	368	191	--
CY1 pin1 to CY2 pin2	348	177	--
Test on 48 V(Model: GTM91099-6048-T2):			
T1 pin 1 – pin A	456	267	
T1 pin 3 – pin A	468	247	
T1 pin 4 – pin A	400	190	
T1 pin 5 – pin A	376	182	
T1 pin 1 – pin G	512	306	
T1 pin 3 – pin G	352	238	
T1 pin 4 – pin G	348	177	
T1 pin 5 – pin G	400	180	
U1 pin 1 – pin 3	380	202	
U1 pin 1 – pin 4	380	200	
U1 pin 2 – pin 3	384	201	
U1 pin 2 – pin 4	380	198	
CY1 pin1 to CY2 pin2	352	177	
supplementary information:			
Bold texts indicate the highest Vrms and Vpeak.			

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Clause	Requirement + Test	Result - Remark	Verdict

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) ⁵⁾	cl (mm)	Required cr (mm)	cr (mm)	
Functional:							
L/N before fuse ²⁾	340	240	2,0	6,4	2,5	6,4	
FS1 in – out ²⁾	340	240	2,0	3,3	2,5	3,3	
FS2 in – out ²⁾	340	240	2,0	3,3	2,5	3,3	
Basic/supplementary:							
--	--	--	--	--	--	--	
Reinforced:							
CY1 pin 1 to CY2 pin 2 ²⁾	348	240	5,2	10,0	5,2 ⁶⁾	10,0	
U1 pri. pin1 to sec. pin ²⁾	384	202	5,2	6,9	5,2 ⁶⁾	10,0	
T1 pri. pin1 to sec. RS29 ^{2) 4)}	544	354	5,7	9,9	7,1	10,0	
HS1 pri. to external accessible part through seam ^{3) 4) 7)}	544	354	5,7	10,0	7,1	10,0	
Transformer core to sec. coil	544	354	5,7	7,0	7,1	8,6	
Supplementary information:							
1) 10N test performed on the following conductors: HS1, CY1, CY2, HS2, C7, C3, C2, U2, LED; Glues are added on C1, C3, C2, U2, LED; 2) On PCB; 3) On components; 4) Liner interpolation methods is used. -TIW used on secondary winding, T1 core consider as pri., 3 layers of insulation tapes wrapped on T1 core, details dee photos; -Openings on external enclosure are checked with finger 2A and 2B, not hazards parts can be touched. 5) The equipment used at elevations < 4000 m. Required clearance is 1,29 times under IEC 60664-1 considering sea leavel 4000 m; 6) The minimum creepage distance is less than minimum clearance, that value of minimum clearance is applied as the minimum creepage distance. 7) Worst condition considered for encapsulated models and unencapsulated models.							

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Clause	Requirement + Test			Result - Remark	Verdict
2.10.5	TABLE: Distance through insulation measurements				P
Distance through insulation (DTI) at/of:		U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)
Insulation tape wrapping transformer and core ¹⁾		544	354	AC 3000V	3 layer
Insulation tape between primary winding and secondary winding		544	354	AC 3000V	1 layer
Enclosure		544	354	AC 3000V	≥0,4
Potting of encapsulated models		544	354	AC 3000V	≥0,4
Supplementary information: 1) Tested with 2 layers.					

4.3.8	TABLE: Batteries								N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available					--			N/A	
Is it possible to install the battery in a reverse polarity position?					--			N/A	
	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:									

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Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	TABLE: Batteries	N/A
Battery category : --		
Manufacturer : --		
Type / model..... : --		
Voltage : --		
Capacity..... : --		
Tested and Certified by (incl. Ref. No.) : --		
Circuit protection diagram: --		
--		

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

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Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Thermal requirements						P
	Supply voltage (V):	90V/ 50Hz 2)	264V/ 50Hz 2)	90V/ 50Hz 3)	264V/ 50Hz 3)	—	—
	Ambient T _{min} (°C):	40	40	40	40	—	—
	Ambient T _{max} (°C):	40	40	40	40	—	—
Maximum measured temperature T of part/at.....:		T (°C)				Allowed T _{max} (°C)	Allowed T (°C) T _{ma} =40°C
Test on 12 V (Model: GTM91099-6015-3.0-T2):							
AC inlet near L		62,9	55,5	66,7	56,7	—	70
PWB near BD1		87,4	69,5	86,0	68,7	—	130
CX1 body		92,3	72,4	93,1	72,9	—	100
LF2 winding		96,7	73,1	96,5	73,0	—	120
C1 body		98,4	77,0	98,5	77,1	—	105
PWB near Q1		90,9	76,8	88,4	75,2	—	130
T1 winding		97,7	84,7	97,0	84,3	—	110
T1 core		90,5	81,9	89,3	80,8	—	110
U1 body		84,5	76,6	85,3	77,3	—	110
CY1 body		74,4	65,9	68,9	61,9	—	85
Plastic enclosure near T1(Inside)		81,7	70,2	77,7	67,3	—	90
Plastic enclosure near T1(Outside)		68,4	60,6	65,0	58,0	—	95
PWB near D4		83,8	78,2	84,5	78,8	—	130
PWB near D3		86,5	79,5	86,6	79,8	—	130
C2 body		85,6	78,3	84,9	77,8	—	105
Output wire		64,3	60,5	61,2	57,8	—	85
Test on 48 V(Model: GTM91099-6048-T2):							
AC inlet near L		62,2	51,7	63,9	52,6	—	70
PWB near BD1		88,4	66,3	88,8	66,7	—	130
CX1 body		86,4	67,8	87,5	68,5	—	100
LF2 winding		93,0	68,5	93,5	68,9	—	120
C1 body		92,6	71,2	92,9	71,6	—	105
PWB near Q1		85,1	72,1	84,6	72,1	—	130
T1 winding		91,9	84,9	92,0	85,5	—	110
T1 core		87,3	84,2	87,1	84,7	—	110
U1 body		77,9	74,1	77,1	74,0	—	110
CY1 body		69,6	62,2	68,5	61,6	—	85

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Clause	Requirement + Test				Result - Remark		Verdict
Plastic enclosure near T1(Inside)	72,3	62,5	69,5	60,8	—		90
Plastic enclosure near T1(Outside)	65,8	57,6	60,9	54,3	—		95
PWB near D3	71,8	69,7	71,0	69,2	—		130
C2 body	68,9	65,8	68,5	66,1	—		105
Output wire	53,2	51,4	52,5	50,7	—		85
Supplementary information:							
1) For component with temperature marking, allowed $T = T_{max} + T_{amb} - T_{ma}$ ($T_{ma} = 40\text{ }^{\circ}\text{C}$, $T_{amb} = 40\text{ }^{\circ}\text{C}$);							
2) The testing performed on label downward;							
3) The testing performed on label upward;							
4) Temperature of windings was measured by thermocouple, limits decreased by $10\text{ }^{\circ}\text{C}$.							
Temperature T of winding:	$t_1\text{ (}^{\circ}\text{C)}$	$R_1\text{ (}\Omega\text{)}$	$t_2\text{ (}^{\circ}\text{C)}$	$R_2\text{ (}\Omega\text{)}$	$T\text{ (}^{\circ}\text{C)}$	Allowed $T_{max}\text{ (}^{\circ}\text{C)}$	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							

4.5	TABLE: Thermal requirements						P
	Supply voltage (V):	90V/ 50Hz 2)	264V/ 50Hz 2)	—	—	—	—
	Ambient T _{min} (°C):	40	40	—	—	—	—
	Ambient T _{max} (°C):	40	40	—	—	—	—
Maximum measured temperature T of part/at.....:		T (°C)				Allowed T _{max} (°C)	Allowed T (°C) T _{ma} =40°C
Test on 5 V(Model: GTM91099-3009-4.0-T2):							
AC inlet near L		41,0	41,3	—	—	—	70
PWB near BD1		81,1	69,1	—	—	—	130
CX1 body		81,7	73,5	—	—	—	100
LF2 winding		85,7	74,2	—	—	—	120
C1 body		89,0	79,2	—	—	—	105
PWB near Q1		82,6	79,9	—	—	—	130
T1 winding		91,2	87,4	—	—	—	110
T1 core		87,9	85,5	—	—	—	110
U1 body		87,0	82,8	—	—	—	110
CY1 body		80,0	78,1	—	—	—	85
Plastic enclosure near T1(Inside)		71,5	69,2	—	—	—	90
Plastic enclosure near T1(Outside)		63,5	61,2	—	—	—	95
PWB near D4		88,9	85,1	—	—	—	130
PWB near D3		90,8	85,7	—	—	—	130

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Clause	Requirement + Test				Result - Remark		Verdict
C2 body	90,5	85,0	—	—	—		105
Output wire	67,6	66,9	—	—	—		85
Supplementary information:							
5) For component with temperature marking, allowed $T = T_{max} + T_{amb} - T_{ma}$ ($T_{ma} = 40\text{ °C}$, $T_{amb} = 40\text{ °C}$);							
6) The testing performed on label downward;							
7) The testing performed on label upward;							
8) Temperature of windings was measured by thermocouple, limits decreased by 10 °C.							
Temperature T of winding:	$t_1\text{ (°C)}$	$R_1\text{ (}\Omega\text{)}$	$t_2\text{ (°C)}$	$R_2\text{ (}\Omega\text{)}$	$T\text{ (°C)}$	Allowed $T_{max}\text{ (°C)}$	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							

4.5.5	TABLE: Ball pressure test of thermoplastic parts			P
	Allowed impression diameter (mm):	≤ 2 mm		—
Part		Test temperature (°C)	Impression diameter (mm)	
Bobbin of T1 (type 4130)		125	1,1	
Supplementary information:				

4.7	TABLE: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
--	--	--	--	--	--	
Supplementary information: Refer to appended table 1.5.1.						

5.1	TABLE: touch current measurement			P
Measured between:		Measured (mA)	Limit (mA)	Comments/conditions
L/N and plastic enclosure(foil)		0,085	0,25	--
L/N and output connector		0,005	0,25	--
supplementary information:				
1) Tested with 264Va.c./60Hz; 2) Worst condition considered for encapsulated models and unencapsulated models.				

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Clause	Requirement + Test		Result - Remark	Verdict
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:				
Line to Neutral(fuses disconnected)		AC	1500	No
Basic				
--		--	--	--
Reinforced:				
L/N to output terminals		DC	4242	No
L/N amd enclosure covered with metal foil ³⁾		AC	3000	No
T1 primary/core and secondary		AC	3000	No
3 layers insulation tape used in T1 (tested with 2 layers)		AC	3000	No
Supplementary information:				
1) T1 core is considered as primary;				
2) Tests conducted on all types transformer under all manufacturers.				
3) Considered for encapsulated models and unencapsulated models.				

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)		25,0		—	
	Power source for EUT: Manufacturer, model/type, output rating		--		—	
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Test on 12 V(Model: GTM91099-6015-3.0-T2):						
BD1	s-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, BD1 damaged. No harzard.
C1	s-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, BD1 damaged. No harzard.
T1 pin 1-3	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
T1 pin 4-5	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
T1 pin A-G	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.

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Clause	Requirement + Test			Result - Remark		Verdict
D4	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
R1	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
U1 pin 3-4	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
U1 pin 1-2	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
U1 pin 1	o-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
U1 pin 3	o-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
Q1 pin G-D	s-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, R1, Q1, RS11, US1 damaged. No harzard.
Q1 pin S-D	s-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, R1, BD1 damaged. No harzard.
Q1 pin G-S	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
US1 pin 3-2	s-c	240	10 min	FS1, FS2	0,583	Normal operation. No damaged, no hazard, no excessive temprature rise.
US1 pin 8-2	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
Output +12 V	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.

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Clause	Requirement + Test			Result - Remark		Verdict
Output +12 V	o-l	240	10 h	FS1, FS2	0,534 → 0,635 →0,731 →0,778 →0,24	The output loaded to 7,0 A for attaining steady conditions, then add to 7,5 A, then output shutdown. Max. temp. measured: T1 winding = 97,1 °C T1 core = 90,6 °C Ambient = 28,2 °C No damage, no hazard.
Test on 48 V(Model: GTM91099-6048-T2):						
BD1	s-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, BD1 damaged. No harzard.
C1	s-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, BD1 damaged. No harzard.
T1 pin 1-3	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
T1 pin 4-5	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
T1 pin A-G	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
D4	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
R1	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
U1 pin 3-4	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
U1 pin 1-2	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
U1 pin 1	o-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.

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Clause	Requirement + Test			Result - Remark		Verdict
U1 pin 3	o-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
Q1 pin G-D	s-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, R1, Q1, RS11, US1 damaged. No harzard.
Q1 pin S-D	s-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, R1, BD1 damaged. No harzard.
Q1 pin G-S	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
US1 pin 3-2	s-c	240	10 min	FS1, FS2	0,564	Normal operation. No damaged, no hazard, no excessive temprature rise.
US1 pin 8-2	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
Output +48 V	s-c	240	10 min	FS1, FS2	0,093	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
Output +48 V	o-l	240	10,5 h	FS1, FS2	0,517 → 0,607 →0,681 →0,793 →0,24	The output loaded to 2,0 A for attaining steady conditions, then add to 2,18 A, then output shutdown. Max. temp. measured: T1 winding = 105,0 °C T1 core = 100,1 °C Ambient = 26,3 °C No damage, no hazard.
Test on 5 V(Model: GTM91099-3009-4.0-T2):						
BD1	s-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, BD1 damaged. No harzard.
C1	s-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, BD1 damaged. No harzard.
T1 pin 1-3	s-c	240	10 min	FS1, FS2	0,001	The unit to be protected. No hazard, no excessive temprature rise.
T1 pin 4-5	s-c	240	10 min	FS1, FS2	0,091	The unit to be protected. No hazard, no excessive temprature rise.

IEC 60950-1						
Clause	Requirement + Test			Result - Remark		Verdict
T1 pin A-G	s-c	240	10 min	FS1, FS2	0,035	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
D4	s-c	240	10 min	FS1, FS2	0,034	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
R1	s-c	240	10 min	FS1, FS2	0,29	Normal operation. No damaged, no hazard, no excessive temprature rise.
U1 pin 3-4	s-c	240	10 min	FS1, FS2	0,034	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
U1 pin 1-2	s-c	240	10 min	FS1, FS2	0,034	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
U1 pin 1	o-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, BD1 damaged. No harzard.
U1 pin 3	o-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, BD1 damaged. No harzard.
Q1 pin G-D	s-c	240	10 min	FS1, FS2	0,034	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
Q1 pin S-D	s-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, BD1 damaged. No harzard.
Q1 pin G-S	s-c	240	<1s	FS1, FS2	1)	FS1, FS2 opened in 1s, BD1 damaged. No harzard.
US1 pin 3-2	s-c	240	10 min	FS1, FS2	0,287	Normal operation. No damaged, no hazard, no excessive temprature rise.
US1 pin 8-2	s-c	240	10 min	FS1, FS2	0,034	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.
Output +5 V	s-c	240	10 min	FS1, FS2	0,034	The unit shutdown immediately. No hazard, no excessive temprature rise. Recoverable.

IEC 60950-1							
Clause	Requirement + Test				Result - Remark		Verdict
Output +5 V	o-l	240	10,5 h	FS1, FS2	0,287 → 0,246	The output loaded to 8,1 A for attaining steady conditions, then output shutdown. Max. temp. measured: T1 winding = 87,2 °C T1 core = 84 °C Ambient = 24,6 °C No damage, no hazard.	
Supplementary information: 1) Tested with all fuse sources; 2) s-c: short circuit, o-c: open circuit, o-l: overload.							

C.2		TABLE: transformers						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)	
T1	Reinforced	544	354	3000 Va.c.	5,7 ³⁾	7,1	¹⁾	
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers	
T1	Reinforced: Primary to secondary			3000 Va.c.	9,9	10,0	TIW	
T1	Reinforced: Primary windings / core to secondary windings			3000 Va.c.	7,0	8,6	TIW	
supplementary information:								
1) 2 or 3 layers / 0,4 mm / Annex U; 2) T1 core is considered as primary; 3) The equipment used at elevations < 4000 m. Required clearance is 1,29 times under IEC 60664-1 considering sea level 4000 m.								

IEC 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
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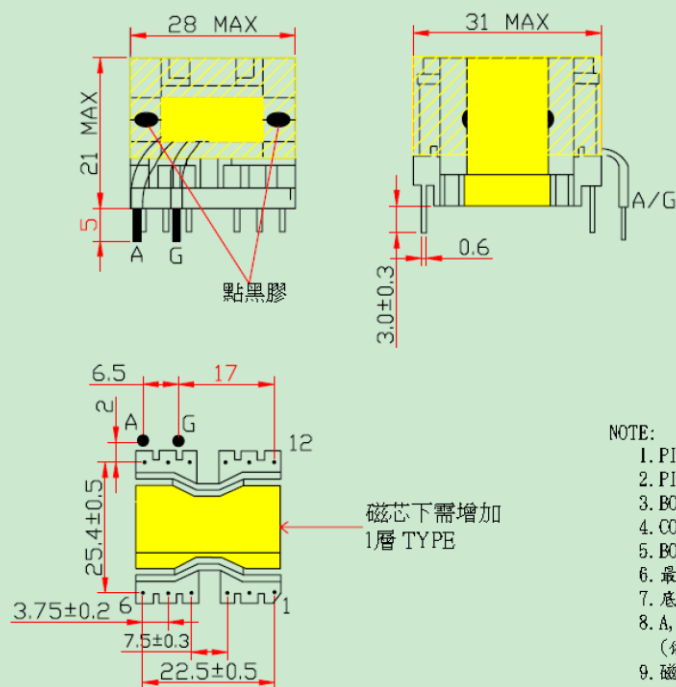
C.2 TABLE: transformers

P

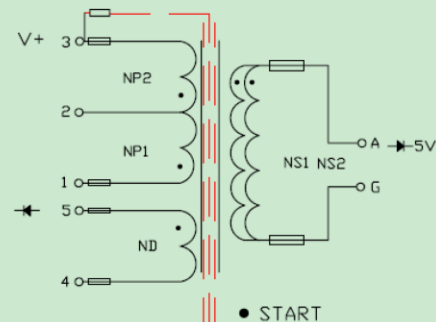
Transformer

1. For XF00794(5 V - 9 V):

1. OUTLINE DIMENSION: (UNIT: mm)



2. SCHEMACAL:



NOTE:

- PIN. 6, 8, 9, 10, 12 CUT OFF, . PIN. 2 CUT OFF 1/2
- PIN. 1, 2, 3, 4, 5, 6, A ADD TEFLON TUBE(G ADD BLACK).
- BOBBIN 用 GK26-20.
- CORE 用 PQ2620 PC-40 或同等材質.
- BOBBIN 的針腳朝外繞線(使NP1, NP2, NS起落不交叉).
- 最外層用15mm的膠帶包3層.
- 底部磁芯纏一層膠帶.
- A, G線出線須從BOBBIN下方出線貼緊線包點膠再垂直折下.(依合PCB為準)
- 磁芯接觸面四個點要點黑膠(如圖).

3. WINDING:

NO.	WINDING	MATERIAL	START	FINISH	URNS	TAPE	REMARK
01	NS1	0.5mm*3C TEX-E	A	G	3Ts	0.05*9MM 2Ts	三層絕緣線
02	E1	TM0.025*8.0mm	3-		1.1Ts	0.05*9MM 2Ts	以0.22mm線引由G/PIN3無這針口
03	NP1	0.22mm*2C	1	2	30Ts	0.05*9MM 2Ts	密繞
04	E2	TM0.025*8.0mm	3-		1.1Ts	0.05*9MM 2Ts	以0.22mm線引由G/PIN3無這針口
05	NS2	0.5mm*3C TEX-E	A	G	3Ts	0.05*9MM 2Ts	三層絕緣線
06	ND	0.22mm*2C	5	4	8Ts	0.05*9MM 2Ts	均勻疏繞
07	NP2	0.22mm*2C	2	3	15Ts	0.05*9MM 2Ts	密繞

4. ELECTRICAL CHARACTERISTICS: (TEMPERATURE: 25°C)

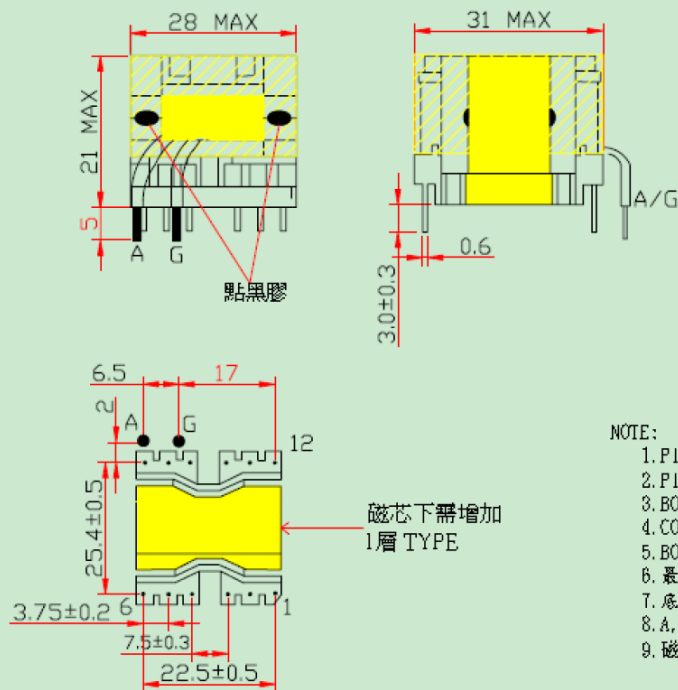
NO.	TEST	CONDITIONS	WINDING	REQUIREMENTS
01	INDUCTANCE	1KHz/0.25V	1~3	1.5mH±5%
02	DC RESISTANCE	/	1~3	
03	LEAKAGE INDUCTANCE	1KHz/0.25V	1~3 SEC. SHORT	15uH MAX
04	DIELECTRIC WITHSTANDING	AC60Hz/2mA/3SEC	PRI~SEC	3.75KV
			SEC~CORE	1.5KV
05	INSULATION RESISTANCE MEGOHM	0.5KV DC	PRI~SEC	100MR MIN
			COIL~CORE	

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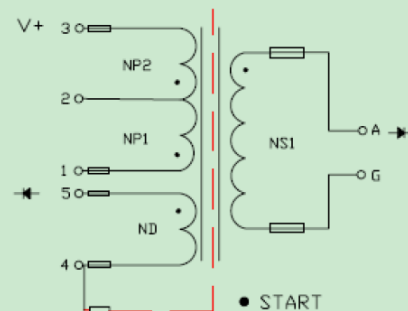
Clause	Requirement + Test	Result - Remark	Verdict
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2. For XF00694(9,1 V - 15 V):

1. OUTLINE DIMENSION: (UNIT: mm)



2. SCHEMACAL:



NOTE:

1. PIN. 6, 8, 9, 10, 12 CUT OFF, . PIN. 2 CUT OFF 1/2
2. PIN. 1, 2, 3, 4, 5, G, A ADD TEFLON TUBE (G ADD BLACK).
3. BOBBIN 用 GK26-20.
4. CORE 用 PQ2620 PC-40 或同等材質.
5. BOBBIN 的針腳朝外繞線(使 NP1, NP2, NS 起端不交叉).
6. 最外層用 15mm 的膠帶包 3 層.
7. 底部磁芯縫一層膠帶.
8. A, G 線出線須從 BOBBIN 下方出線貼緊線包點膠再垂直折下.
9. 磁芯接觸面四個點要點黑膠(如圖).

3. WINDING:

NO.	WINDING	MATERIAL	START	FINISH	TURNS	TAPE	REMARK
01	NP1	ø0.32*2C	1	2	25Ts	0.05*9MM 2Ts	密繞
02	E1	TM0.025*8.0mm	-4-		1.1Ts	0.05*9MM 2Ts	0.0.35 磁粉引針 PIN4, 兩端開口
03	NS1	0.5mm*5 TEX-E	A	G	4Ts	0.05*9MM 2Ts	三層絕緣線
04	ND	ø0.25*2C	5	4	5Ts	0.05*9MM 3Ts	均勻繞繞
05	NP2	ø0.30*2C	2	3	11Ts	0.05*9MM 2Ts	密繞

4. ELECTRICAL CHARACTERISTICS: (TEMPERATURE: 25°C)

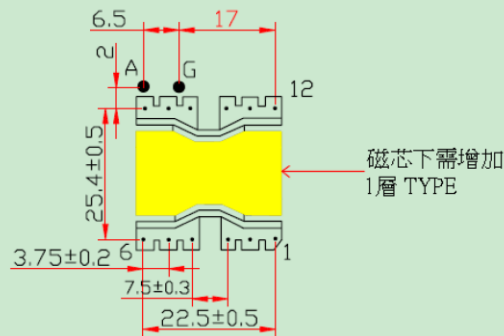
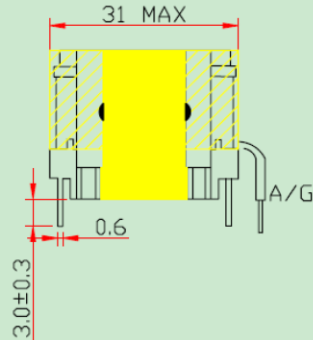
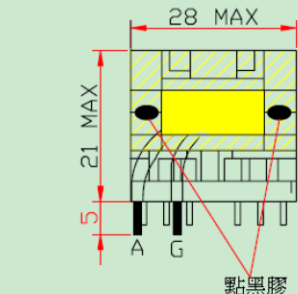
NO.	TEST	CONDITIONS	WINDING	REQUIREMENTS
01	INDUCTANCE	1KHz/0.25V	1~3	720uH±5%
02	DC RESISTANCE	/	1~3	
03	LEAKAGE INDUCTANCE	1KHz/0.25V	1~3 SEC. SHORT	15uH MAX
04	DIELECTRIC WITHSTANDING	AC60Hz/2mA/3SEC	PRI~SEC	3.75KV
			SEC~CORE	1.5KV
05	INSULATION RESISTANCE MEGAOHM	0.5KV DC	PRI~SEC	100MR MIN
			COIL~CORE	

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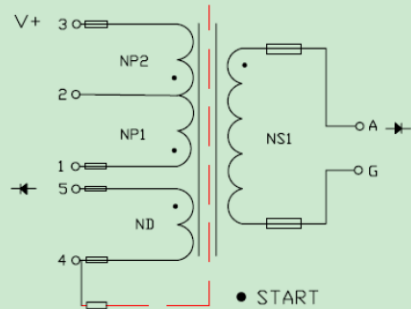
Clause	Requirement + Test	Result - Remark	Verdict
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3. For XF00695(15,1 V – 24 V):

1. OUTLINE DIMENSION: (UNIT: mm)



2. SCHEMATIC:



NOTE:

- PIN. 6, 8, 9, 10, 12 CUT OFF, . PIN. 2 CUT OFF 1/2
- PIN. 1, 2, 3, 4, 5, G, A ADD TEFLON TUBE (G ADD BLACK).
- BOBBIN 用 GK26-20.
- CORE 用 PQ2620 PC-40 或同等材質.
- BOBBIN 的針腳朝外繞線 (使 NP1, NP2, NS 起落不交叉).
- 最外層用 15mm 的膠帶包 3 層.
- 底部磁芯纏一層膠帶.
- A, G 線出線須從 BOBBIN 下方出線貼緊線包點膠再垂直折下.
- 磁芯接觸面四個點要點黑膠 (如圖).

3. WINDING:

NO.	WINDING	MATERIAL	START	FINISH	TURNS	TAPE	REMARK
01	NP1	ø0.32*2C	1	2	25T _s	0.05*9MM 2T _s	密繞
02	E1	TM0.025*8.0mm	-4-		1.1T _s	0.05*9MM 2T _s	以 0.35 號磁絲引出至 PIN4, 銅箔封口
03	NS1	0.55mm*3 TEX-E	A	G	6T _s	0.05*9MM 2T _s	三層絕緣線
04	ND	ø0.25*2C	5	4	5T _s	0.05*9MM 3T _s	均勻疏繞
05	NP2	ø0.30*2C	2	3	11T _s	0.05*9MM 2T _s	密繞

4. ELECTRICAL CHARACTERISTICS: (TEMPERATURE: 25°C)

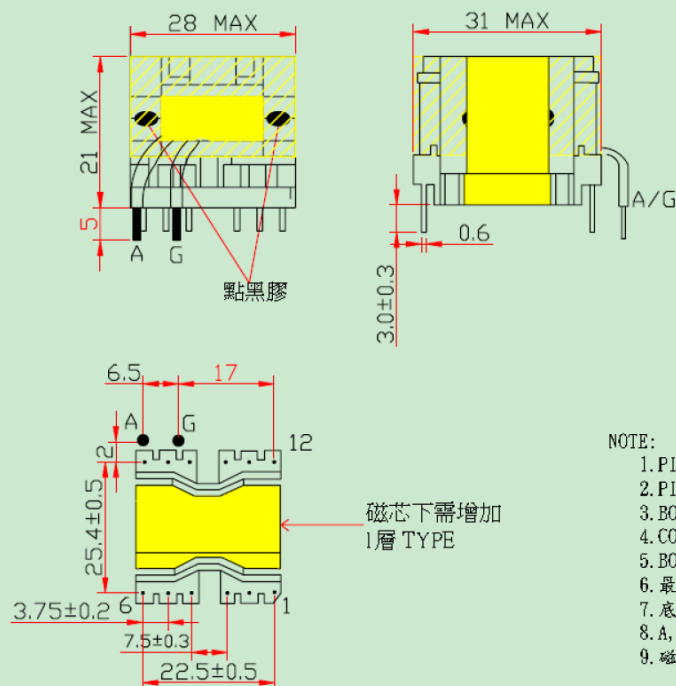
NO.	TEST	CONDITIONS	WINDING	REQUIREMENTS
01	INDUCTANCE	1KHz/0.25V	1~3	720uH±5%
02	DC RESISTANCE	/	1~3	
03	LEAKAGE INDUCTANCE	1KHz/0.25V	1~3 SEC. SHORT	15uH MAX
04	DIELECTRIC WITHSTANDING	AC60Hz/2mA/3SEC	PRI~SEC	3.75KV
			SEC~CORE	1.5KV
05	INSULATION RESISTANCE MEGOHM	0.5KV DC	PRI~SEC	100MR MIN
			COIL~CORE	

IEC 60950-1

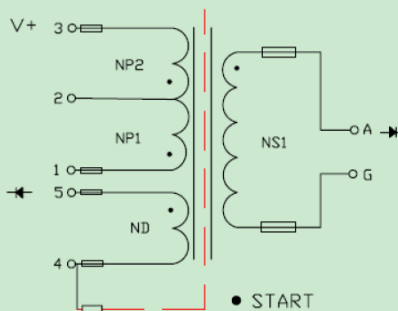
Clause	Requirement + Test	Result - Remark	Verdict
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4. For XF00731(24,1 V – 48 V):

1. OUTLINE DIMENSION:(UNIT:mm)



2. SCHEMACAL:



NOTE:

- PIN. 6, 8, 9, 10, 12 CUT OFF, . PIN. 2 CUT OFF 1/2
- PIN. 1, 2, 3, 4, 5, G, A ADD TEFLON TUBE(G ADD BLACK).
- BOBBIN 用 GK26-20.
- CORE 用 PQ2620 PC-40或同等材質.
- BOBBIN 的針腳朝外繞線(使NP1, NP2, NS起落不交叉).
- 最外層用15mm的膠帶包3層.
- 底部磁芯纏一層膠帶.
- A, G線出線須從BOBBIN下方出線貼緊線包點膠再垂直折下.
- 磁芯接觸面四個點要點黑膠(如圖).

3. WINDING:

NO.	WINDING	MATERIAL	START	FINISH	TURNS	TAPE	REMARK
01	NP1	∅0.32*2C	1	2	25Ts	0.05*9MM 2Ts	密繞
02	E1	TM0.025*8.0mm	-4-		1.1Ts	0.05*9MM 2Ts	以 35號磁線引至 NP1, NP2, NS1
03	NS1	0.45mm*2 TEX-E	A	G	13Ts	0.05*9MM 2Ts	三層絕緣線
04	ND	∅0.25*2C	5	4	5Ts	0.05*9MM 3Ts	均勻疏繞
05	NP2	∅0.30*2C	2	3	11Ts	0.05*9MM 2Ts	密繞

4. ELECTRICAL CHARACTERISTICS:(TEMPERATURE:25°C)

NO.	TEST	CONDITIONS	WINDING	REQUIREMENTS
01	INDUCTANCE	1KHz/0.25V	1~3	720uH±5%
02	DC RESISTANCE	/	1~3	
03	LEAKAGE INDUCTANCE	1KHz/0.25V	1~3 SEC. SHORT	15uH MAX
04	DIELECTRIC WITHSTANDING	AC60Hz/2mA/3SEC	PRI~SEC	3.75KV
			SEC~CORE	1.5KV
05	INSULATION RESISTANCE MEGAΩHM	0.5KV DC	PRI~SEC	100MR MIN
			COIL~CORE	

*****End of Test report*****

Details of: General View (Model: GTM91099-6015-3.0-T2)



Details of: General View (Model: GTM91099-6015-3.0-T2)



Details of: Internal View (Model: GTM91099-6015-3.0-T2)



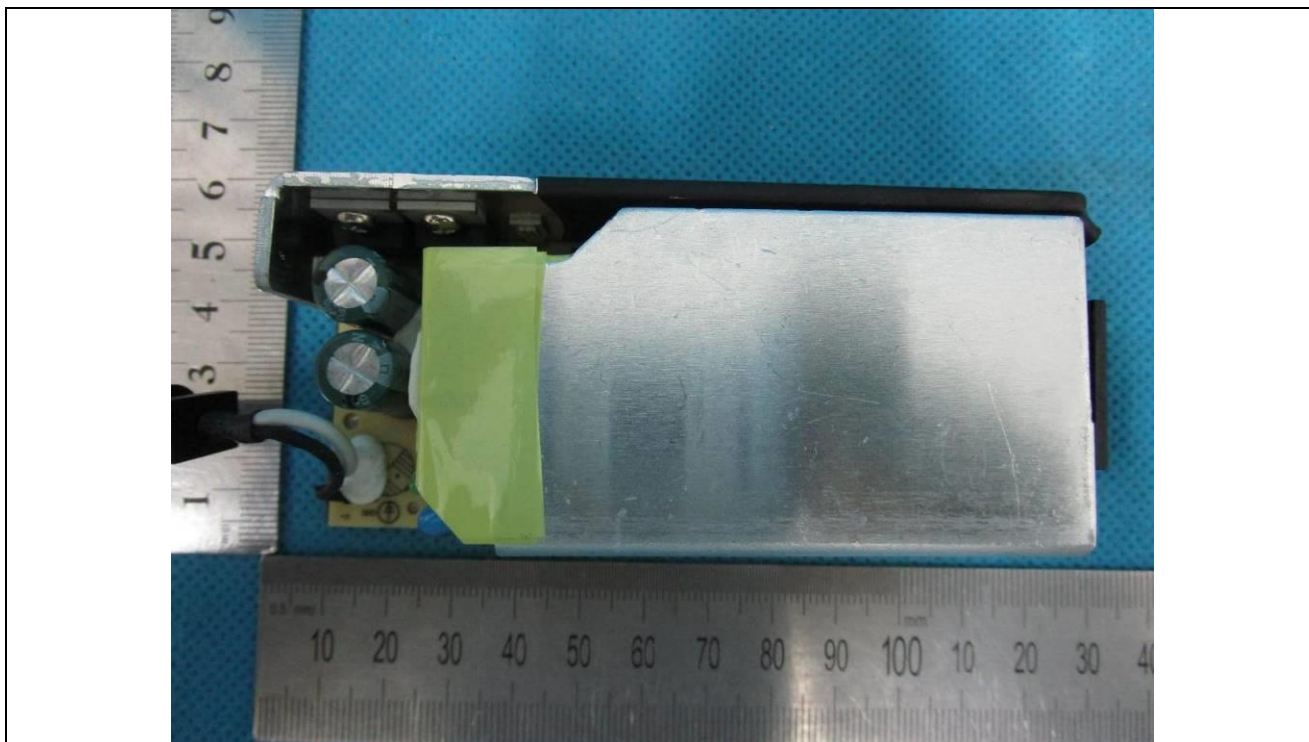
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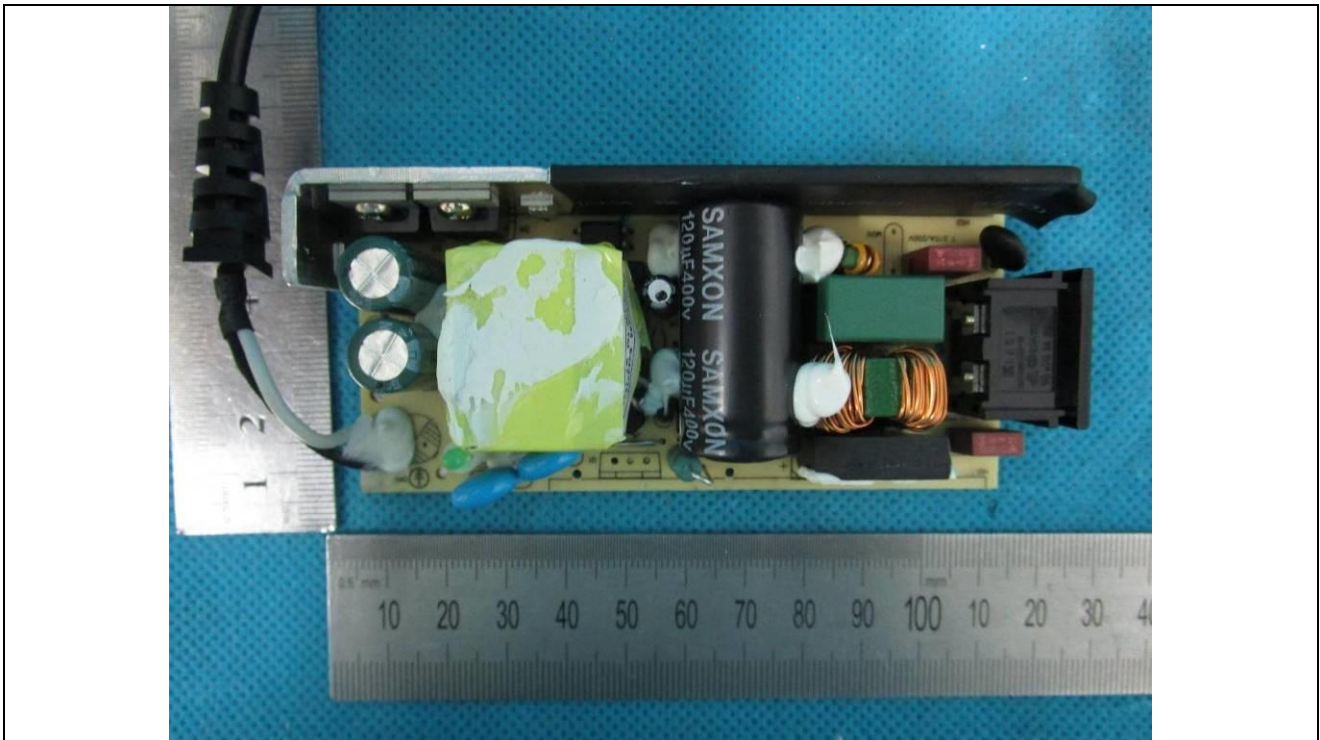
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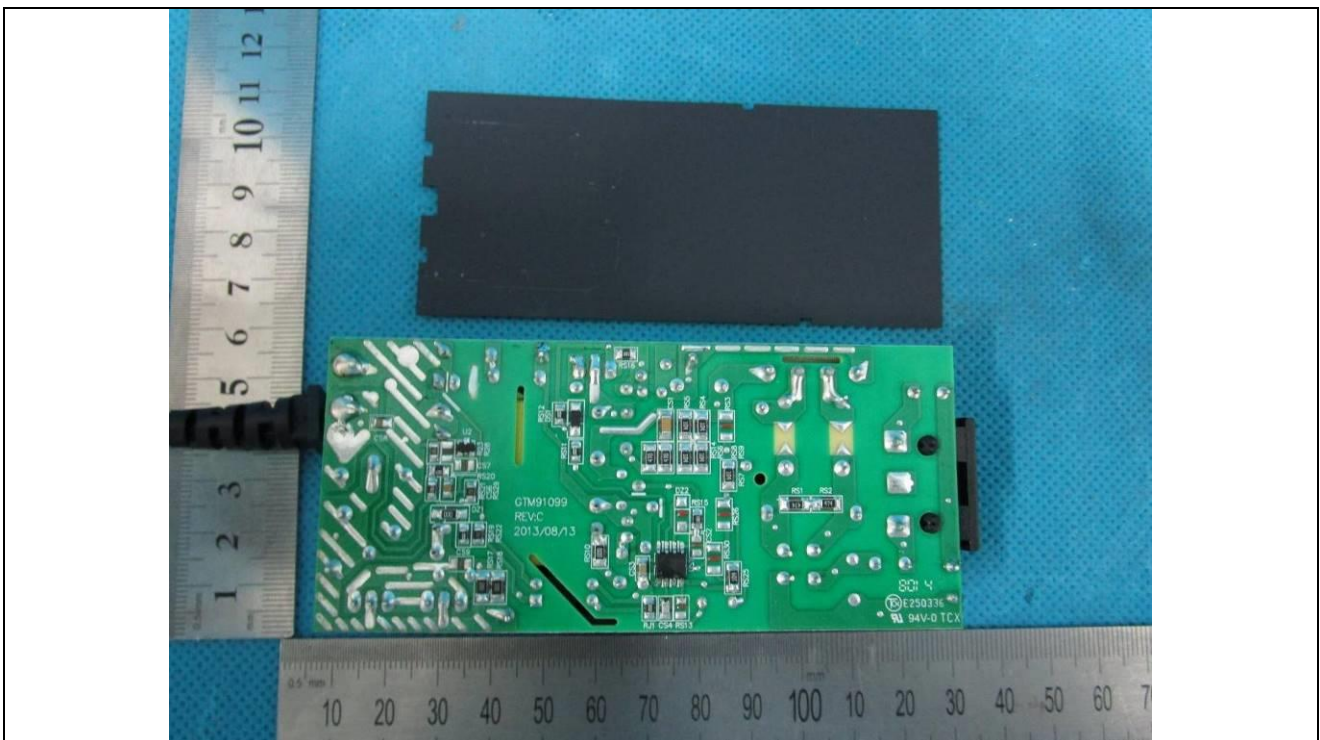
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Details of: Internal View (Model: GTM91099-6015-3.0-T2)



Details of: Internal View



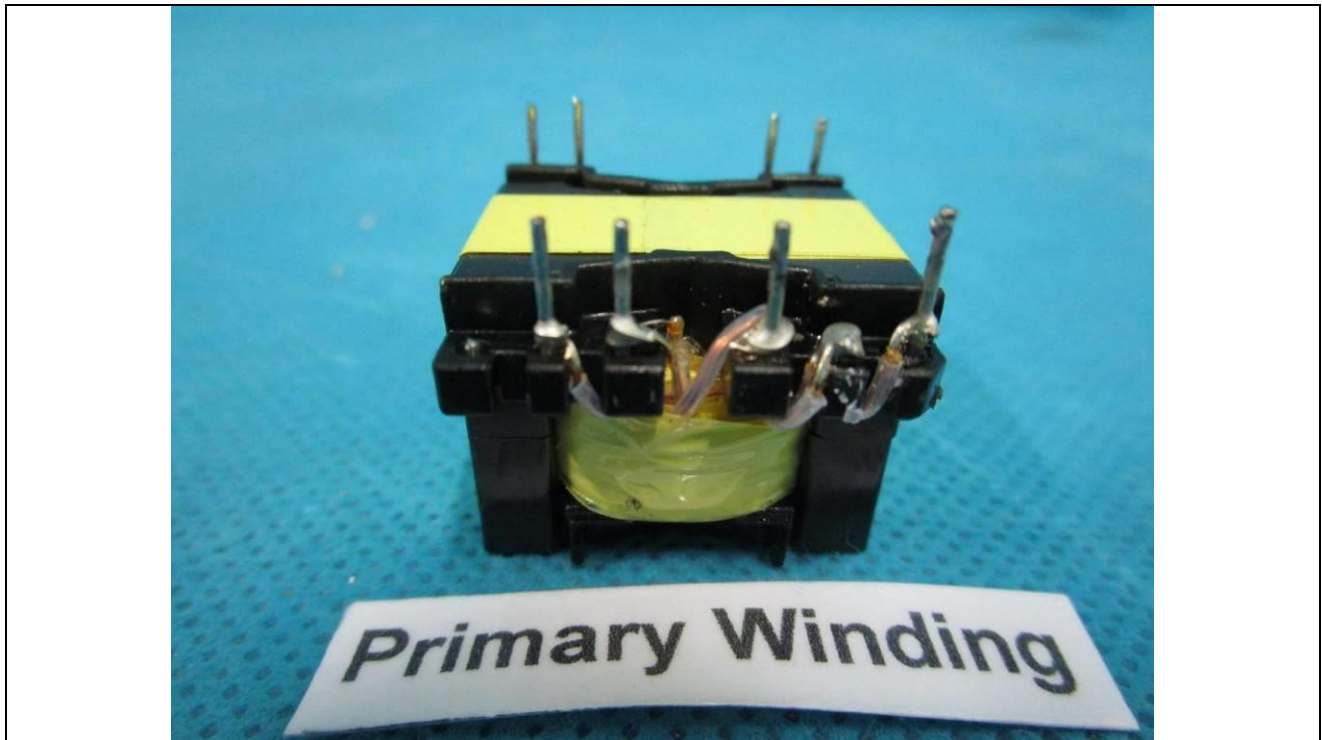
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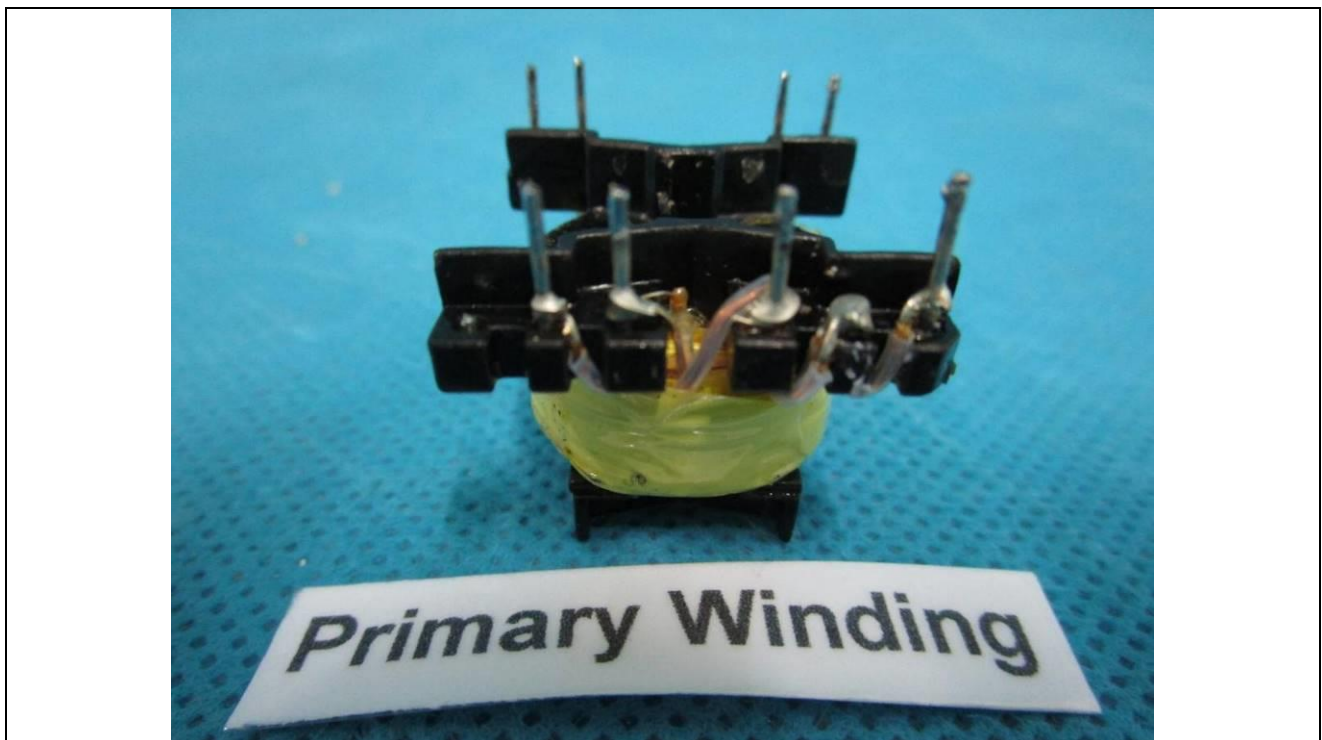
Details of: Internal View



Details of: Internal View



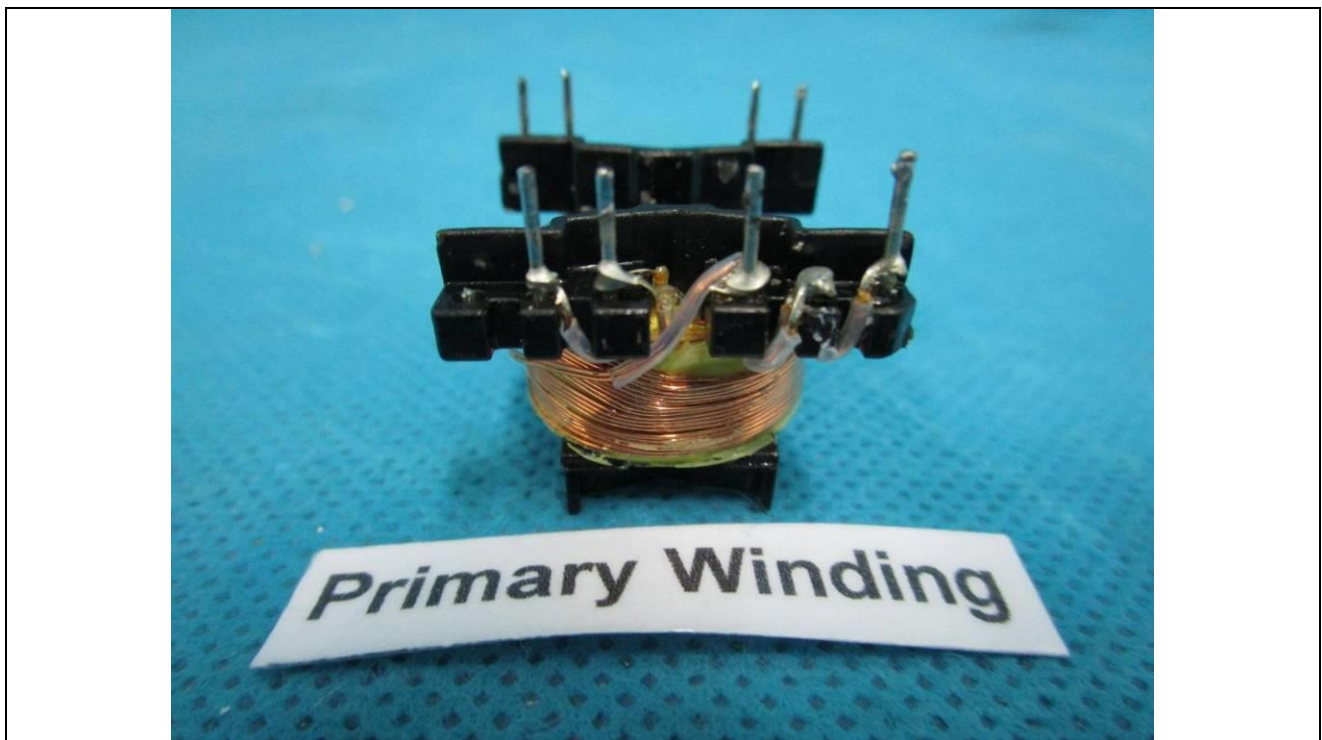
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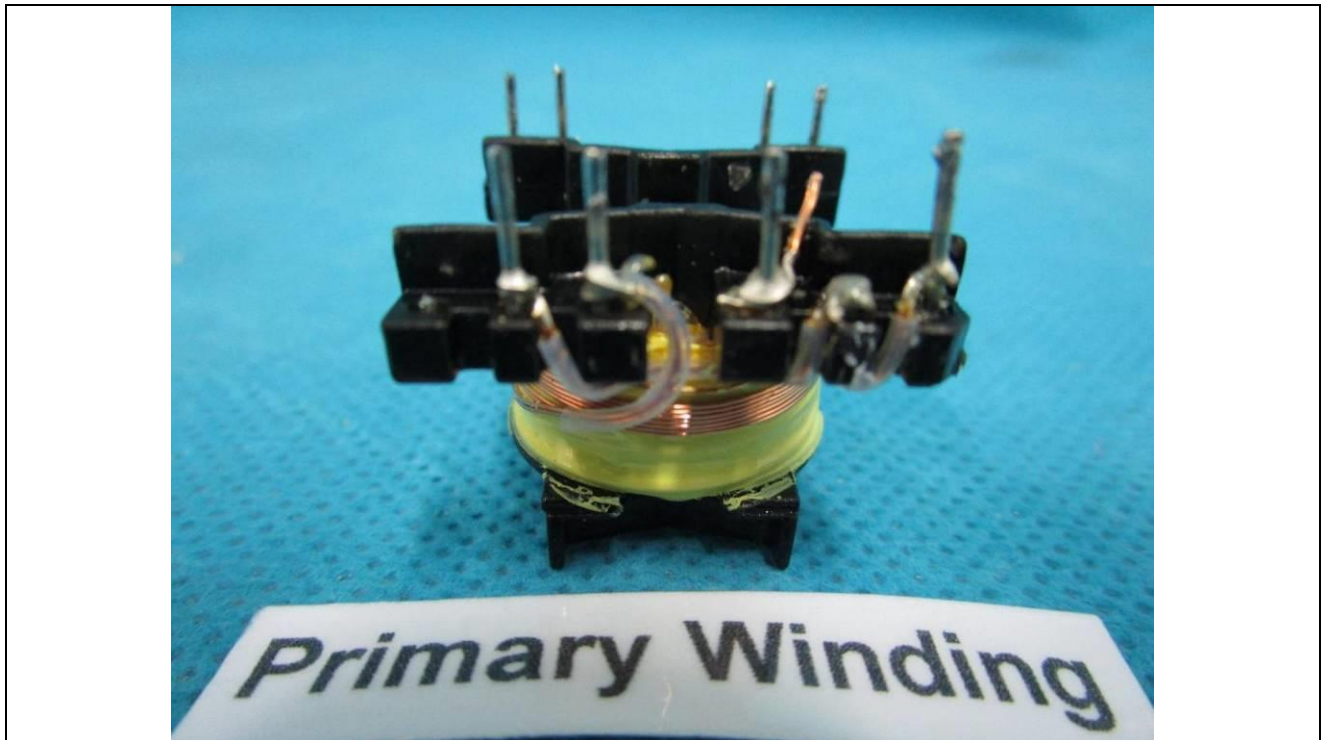
Details of: Internal View



Details of: Internal View



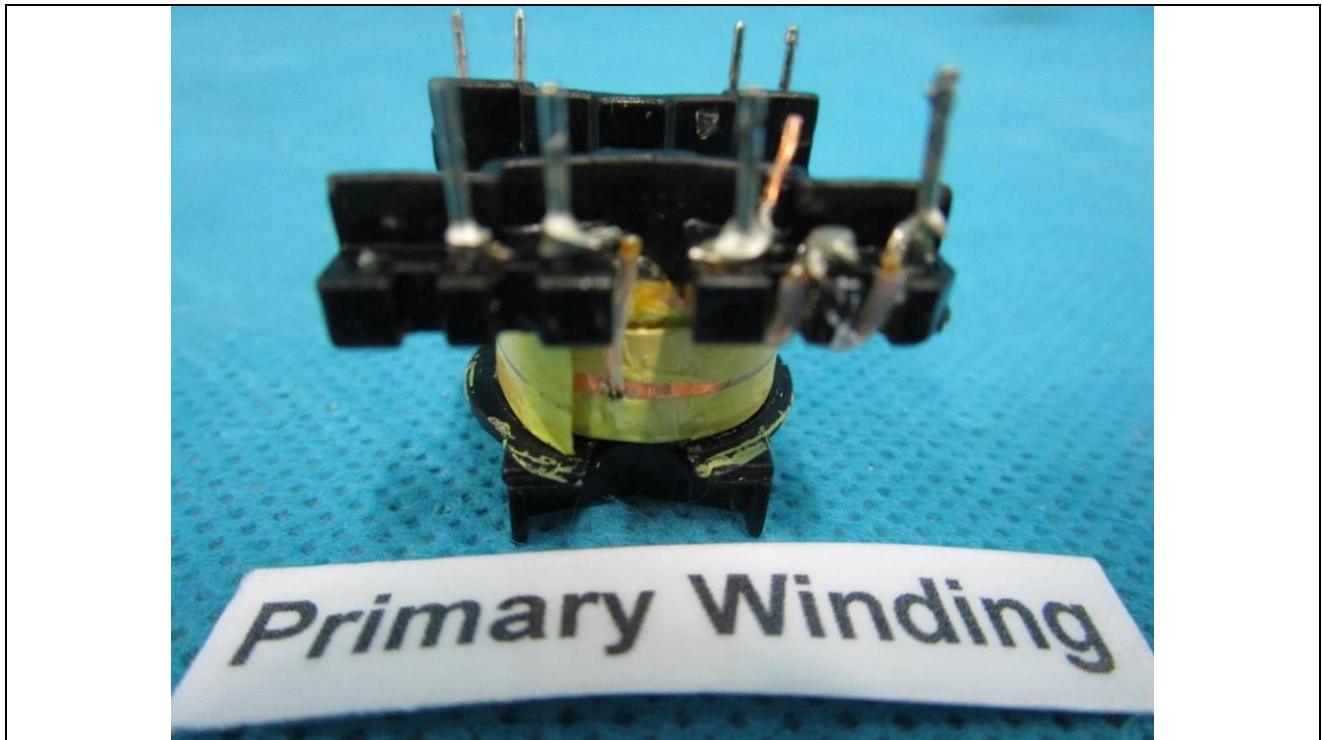
Details of: Internal View



Details of: Internal View



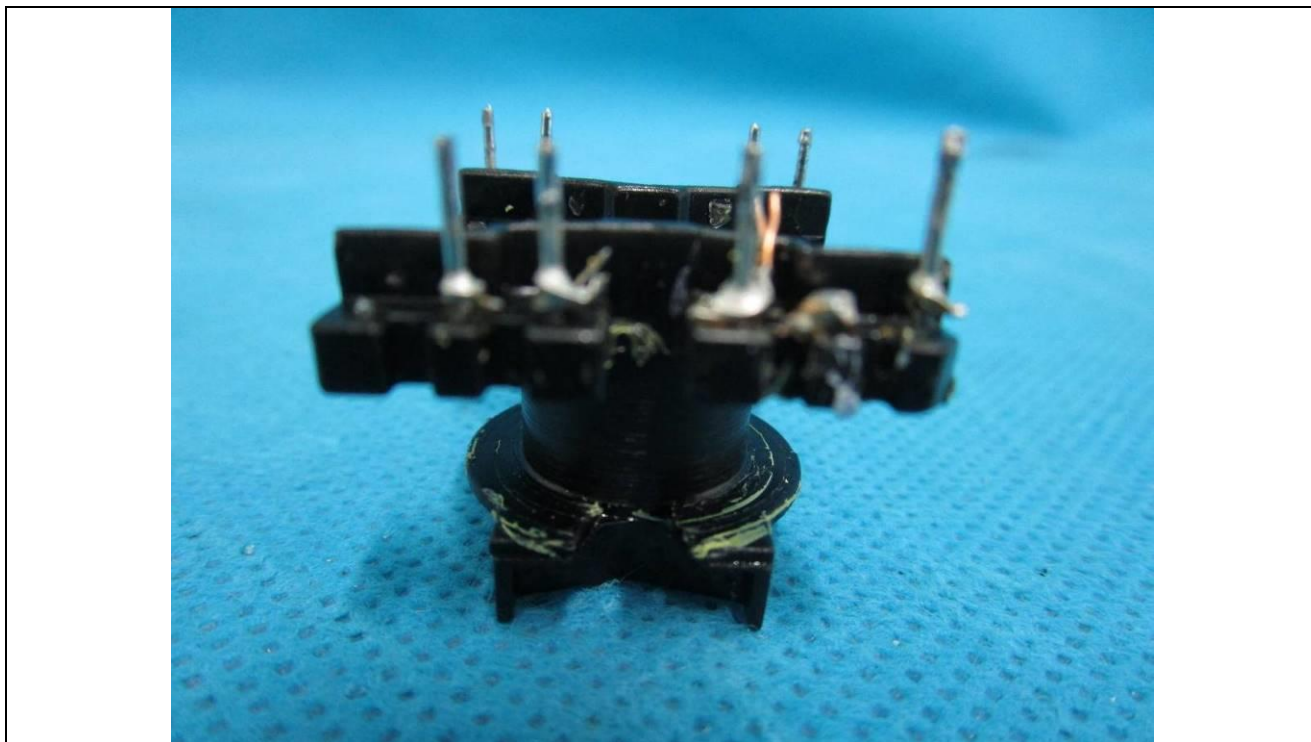
Details of: Internal View



Details of: Internal View



Details of: Internal View



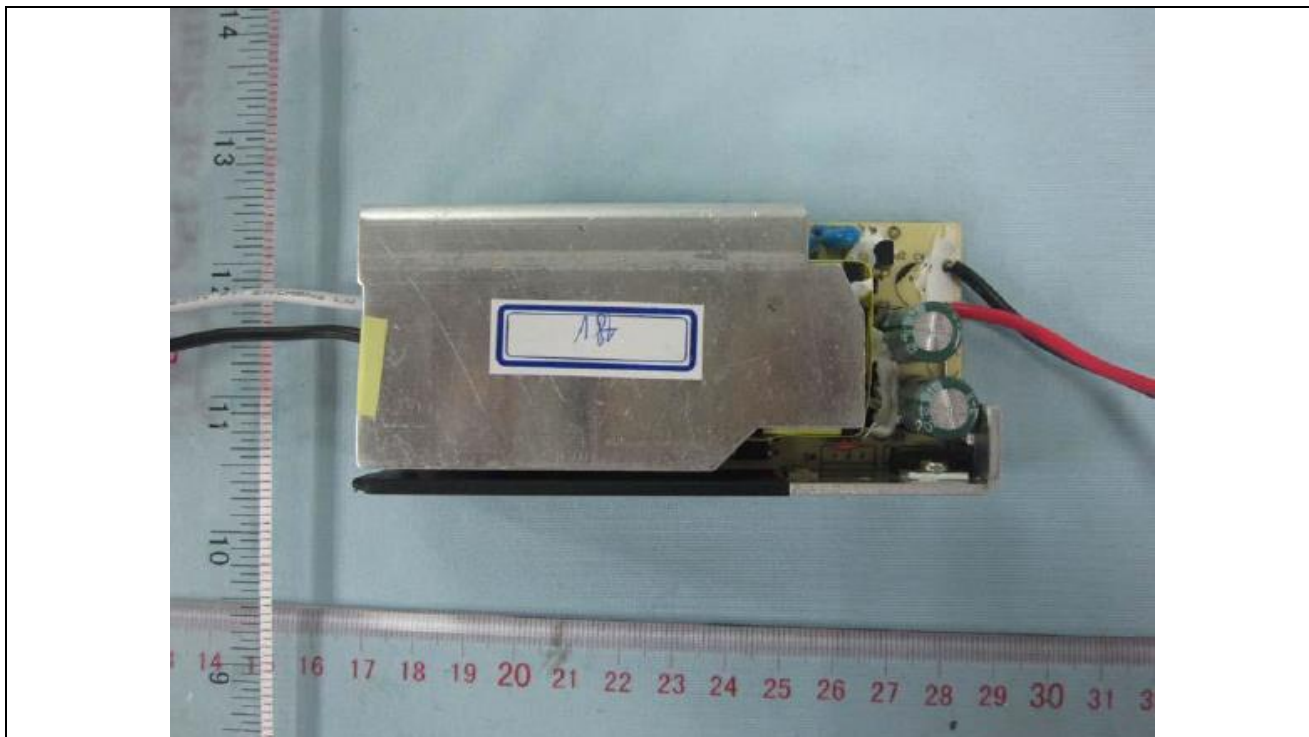
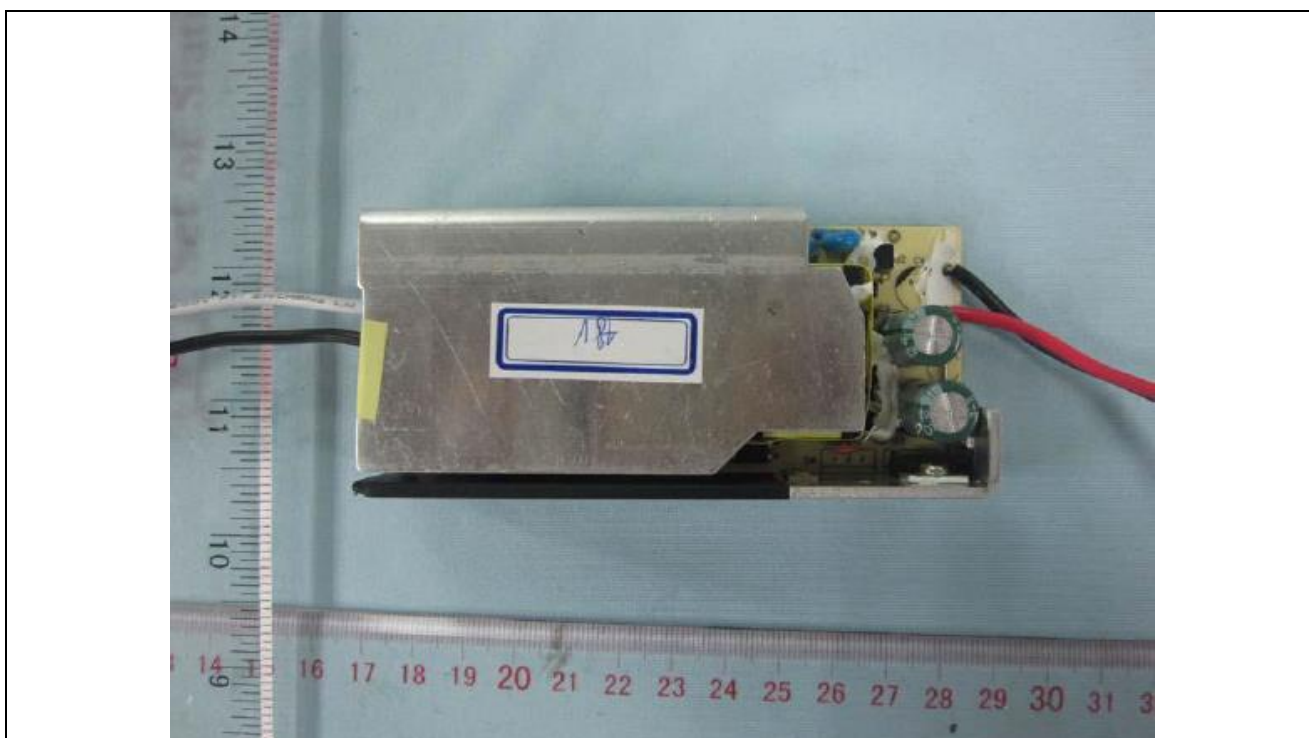
Details of: Encapsulated type



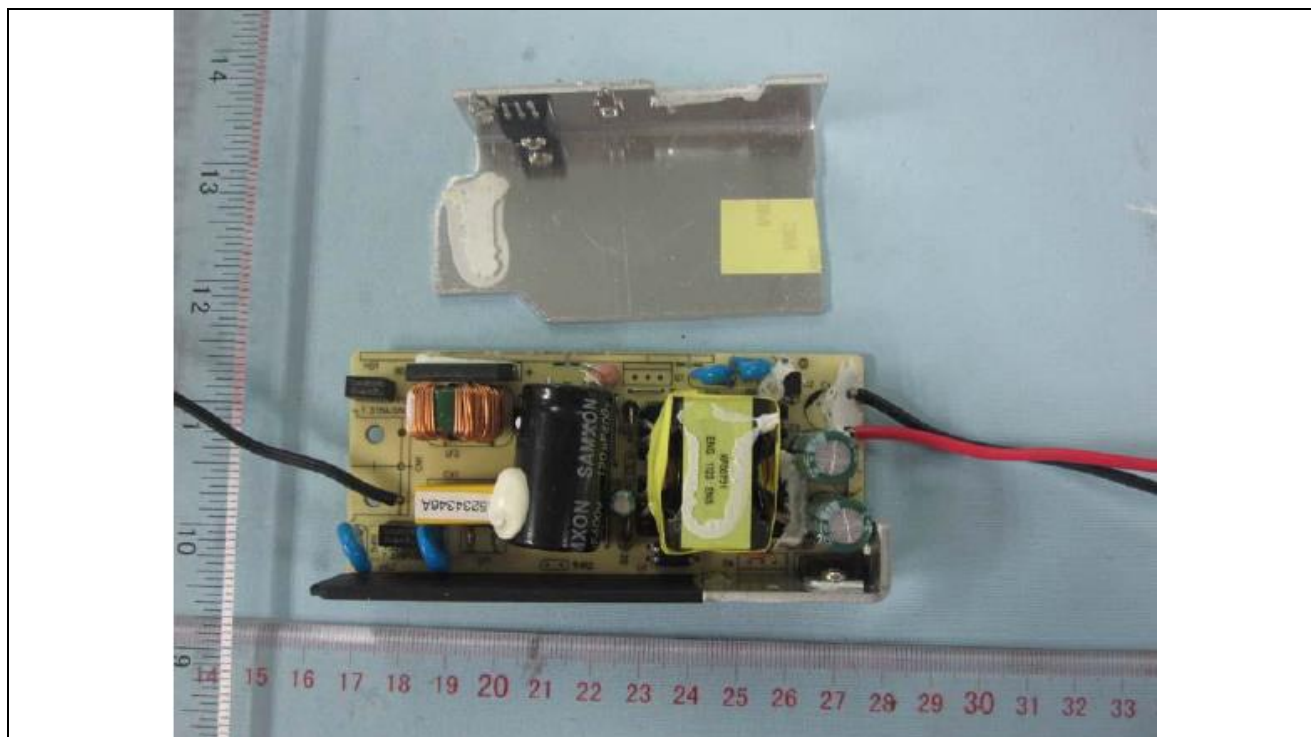
Attachment 1: Photo documentation

11 of 12

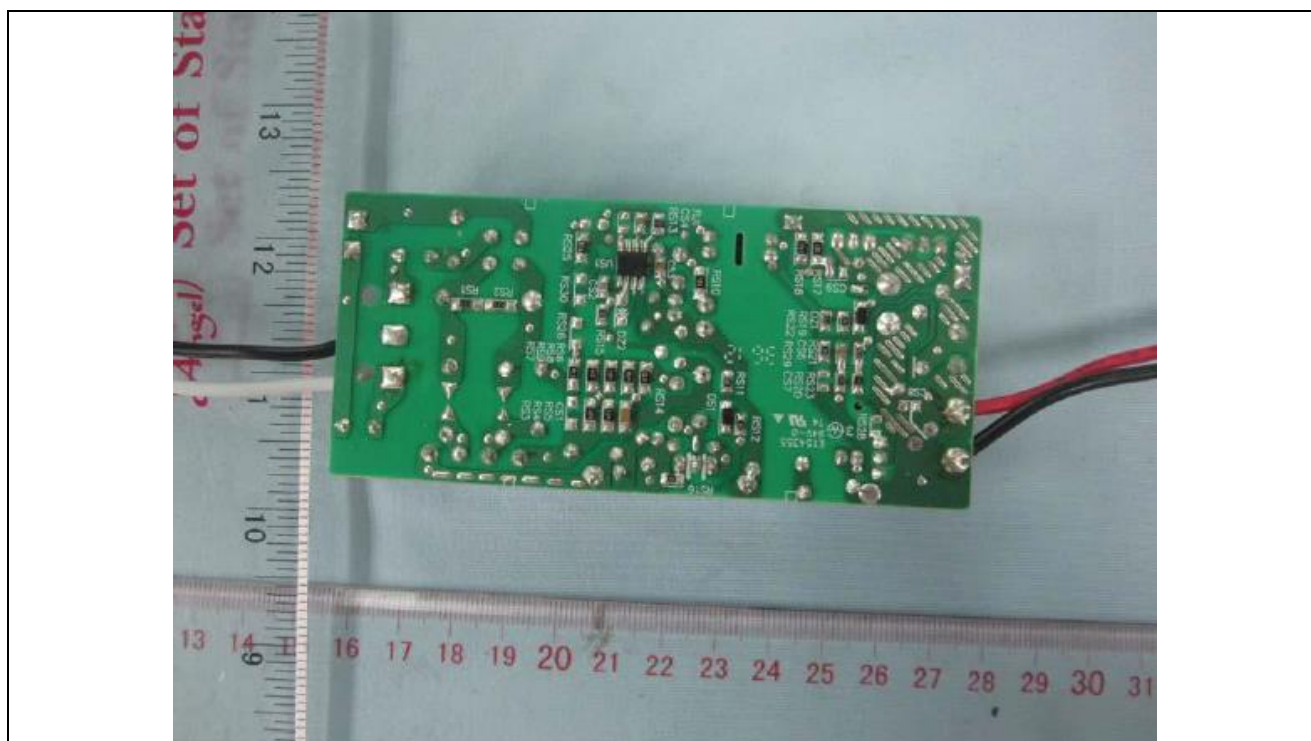
Report No.: SHES190601702601

Details of: Encapsulated type (Internal view (Class II))Details of: Encapsulated type (Internal view (Class I))

Details of: Encapsulated type (PCB)



Details of: Encapsulated type (PCB)



*****End of Attachment 1*****

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Attachment 3 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

ATTACHMENT TO TEST REPORT IEC 60950-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements	
Differences according to	EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013
Attachment Form No.	EU_GD_IEC60950_1F
Attachment Originator	SGS Fimko Ltd
Master Attachment	Date 2014-02
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EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS


IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it's amendmets are prefixed "Z"		P
Contents (A2:2013)	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
General	Delete all the "country" notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		P

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note		P
General (A2:2013)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged.		P
1.1.1 (A1:2010)	Replace the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		N/A
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		N/A
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		N/A
1.5.1 (Added info*)	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC. New Directive 2011/65/11 *		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
1.7.2.1 (A12:2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.		N/A
	Zx Protection against excessive sound pressure from personal music players		N/A
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: <ul style="list-style-type: none"> – is designed to allow the user to listen to recorded or broadcast sound or video; and – primarily uses headphones or earphones that can be worn in or on or around the ears; and – allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: <ul style="list-style-type: none"> – while the personal music player is connected to an external amplifier; or – while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Cont'd	<p>The requirements do not apply to:</p> <ul style="list-style-type: none"> – hearing aid equipment and professional equipment; <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p> <ul style="list-style-type: none"> – analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>		N/A
	<p>Zx.2 Equipment requirements</p> <p>No safety provision is required for equipment that complies with the following:</p> <ul style="list-style-type: none"> – equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and – a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1. <p>NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <ol style="list-style-type: none"> protect the user from unintentional acoustic outputs exceeding those mentioned above; and have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and 		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Cont'd	<p>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <ol style="list-style-type: none"> 1) equipment provided as a package (player with its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1. <p>For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA.</p> <p>For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.3 Warning</p> <p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <ul style="list-style-type: none"> – the symbol of Figure 1 with a minimum height of 5 mm; and – the following wording, or similar: <p>“To prevent possible hearing damage, do not listen at high volume levels for long periods.”</p>  <p>Figure 1 – Warning label (IEC 60417-6044)</p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>		N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	<p>Zx.4.1 Wired listening devices with analogue input</p> <p>With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV.</p> <p>This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control).</p> <p>NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p>		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.4.2 Wired listening devices with digital input</p> <p>With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA.</p> <p>This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p>		N/A
	<p>Zx.4.3 Wireless listening devices</p> <p>In wireless mode:</p> <ul style="list-style-type: none"> – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>		N/A
	<p>Zx.5 Measurement methods</p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>		N/A

IEC60950_1F - ATTACHMENT									
Clause	Requirement + Test	Result - Remark	Verdict						
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p>		N/A						
	<p>c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		N/A						
2.7.2	This subclause has been declared 'void'.		N/A						
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A						
3.2.5.1	<p>Replace "60245 IEC 53" by "H05 RR-F";</p> <p>"60227 IEC 52" by "H03 VV-F or H03 VVH2-F";</p> <p>"60227 IEC 53" by "H05 VV-F or H05 VVH2-F2".</p> <p>In Table 3B, replace the first four lines by the following:</p> <table><tr><td>Up to and including 6 </td><td>0,75 ^{a)} </td></tr><tr><td>Over 6 up to and including 10 </td><td>(0,75) ^{b)} 1,0 </td></tr><tr><td>Over 10 up to and including 16 </td><td>(1,0) ^{c)} 1,5 </td></tr></table> <p>In the conditions applicable to Table 3B delete the words "in some countries" in condition ^{a)}.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	Up to and including 6	0,75 ^{a)}	Over 6 up to and including 10	(0,75) ^{b)} 1,0	Over 10 up to and including 16	(1,0) ^{c)} 1,5		N/A
Up to and including 6	0,75 ^{a)}								
Over 6 up to and including 10	(0,75) ^{b)} 1,0								
Over 10 up to and including 16	(1,0) ^{c)} 1,5								

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		N/A
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 1,5 to 2,5 1,5 to 4 Delete the fifth line: conductor sizes for 13 to 16 A		N/A
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).		N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.		N/A
Bibliography	Additional EN standards.		—

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—
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ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		N/A
1.2.13.14 (A11:2009)	In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.1 (A11:2009)	In Finland, Norway and Sweden , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
1.5.9.4	In Finland, Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	<p>In Finland, Norway and Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1 (A11:2009)	<p>In Norway and Sweden, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>“Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11).”</p> <p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.”</p> <p>Translation to Swedish:</p> <p>”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”</p>		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1 (A2:2013)	<p>In Denmark, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in Denmark shall be as follows: In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord."</p>		N/A
1.7.5 1.7.5 (A11:2009)	<p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.</p> <p>For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>		N/A
1.7.5 (A2:2013)	<p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011.</p> <p>For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a.</p> <p>Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b.</p> <p>Justification the Heavy Current Regulations, 6c</p>		N/A
2.2.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.2	In Finland , Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.3	In the United Kingdom , the current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		N/A
2.10.5.13	In Finland, Norway and Sweden , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A
3.2.1.1	In Switzerland , supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A		N/A
	SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>		N/A
3.2.1.1 (A2:2013)	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Justification the Heavy Current Regulations, 6c</p>		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>		N/A
3.2.1.1	<p>In the United Kingdom, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N/A
3.2.1.1	<p>In Ireland, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.</p>		N/A
3.2.4	<p>In Switzerland, for requirements see 3.2.1.1 of this annex.</p>		N/A
3.2.5.1	<p>In the United Kingdom, a power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	In the United Kingdom , the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: <ul style="list-style-type: none"> • 1,25 mm² to 1,5 mm² nominal cross-sectional area. 		N/A
4.3.6	In the United Kingdom , the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
4.3.6	In Ireland , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A
5.1.7.1	In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: <ul style="list-style-type: none"> • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT. 		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	<p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. 		N/A
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14: - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14. 		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.2	In Finland, Norway and Sweden , the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In Finland, Norway and Sweden , for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3 (A11:2009)	In Norway and Sweden , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A

Annex ZD (informative)

IEC and CENELEC code designations for flexible cords

Type of flexible cord	Code designations	
	IEC	CENELEC
PVC insulated cords		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
Ordinary polyvinyl chloride sheathed flexible cord	60277 IEC 53	H05VV-F H05VVH2-F
Rubber insulated cords		
Braided cord	60245 IEC 51	H03RT-F
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
Cords having high flexibility		
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H

*****End of Attachment 3*****