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## LVD TEST REPORT

Report No: STS1707130A01

Issued for

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<b>Product Name:</b>	Multi - USB Charging Station
<b>Brand Name:</b>	Show Wish
<b>Model Name:</b>	YM-UD06
<b>Series Model:</b>	YM-UD01, YM-UD02, YM-UD04 YM-UD05, YM-UD06, YM-UD07, YM-UD08, YM-UD09, YM-UD10, YM-UD11, YM-UD12, YM-UD13, YM-UD14, YM-UD15, YM-UD16
<b>Test Standard:</b>	EN 60950-1:2006+A11:2009+A1:2010+ A12:2011+A2:2013



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**TEST REPORT****IEC 60950-1  
Information technology equipment – Safety –  
Part 1: General requirements****Report Number** ..... : STS1707130A01**Tested by (+ signature)** ..... : Mona Tao*Mona Tao***Reviewed by (+ signature)** ..... : Sky Hu*Sky Hu***Approved by (+ signature)** ..... : Bovey Yang*Bovey Yang***Date of issue** ..... : 28 July 2017**Total number of pages** ..... : 56 pages**Testing laboratory** ..... : Shenzhen STS Test Services Co., Ltd.**Address** ..... : 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road,  
Fuyong Street, Bao'an District, Shenzhen, Guangdong, China**Applicant's name** ..... :**Address** ..... :**Test specification:****Standard** ..... : EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013  
IEC 60950-1:2005+A1:2009+A2:2013**Test procedure** ..... : LVD Scheme**Non-standard test method.** : N/A**Test Report Form No.** ..... : IEC60950\_1F**Test Report Form(s) Originator** ..... : SGS Fimko Ltd**Master TRF** ..... : Dated 2014-02**This test report is specially limited to the above client company and product model only. It may not be duplicated without prior written consent of STS Test.****Test item description** ..... : Multi - USB Charging Station**Trade Mark** ..... : Show Wish**Manufacturer** ..... : Same as applicant**Address** ..... : Same as applicant**Model/Type reference** ..... : YM-UD06, YM-UD01, YM-UD02, YM-UD04 YM-UD05, YM-UD06,  
YM-UD07, YM-UD08, YM-UD09, YM-UD10, YM-UD11, YM-UD12,  
YM-UD13, YM-UD14, YM-UD15, YM-UD16**Ratings** ..... : Input: 100-240V~ 50/60Hz 2A

Output: 5V --- 14.4A (6 USB port, each port 2.4A)

### Summary of testing:

#### Tests performed (name of test and test clause):

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013

The submitted samples were found to comply with the requirements of above specification.

#### Testing location:

Shenzhen STS Test Services Co., Ltd.  
1/F., Building B, Zhuoke Science Park, No.190,  
Chongqing Road, Fuyong Street, Bao'an  
District, Shenzhen, Guangdong, China  
CNAS Registration No.: L7649

### Comment:

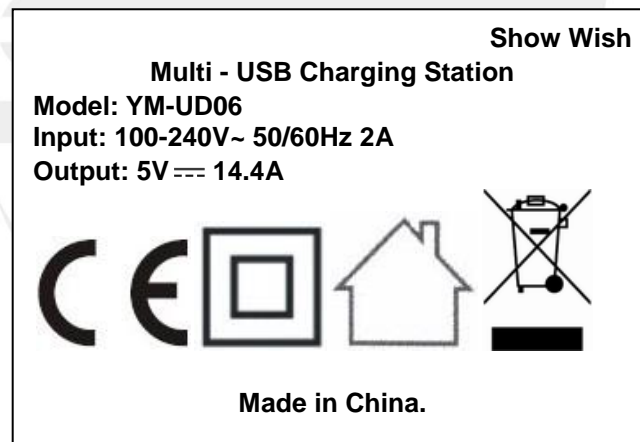
This report also includes:

- Photo documentation: 3  
pages  
Taget fra Mackabler.dk

### Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Additional requirements for markings. See 1.7 NOTE)



Remark on above marking:

1. The height of CE symbols is more than 5 mm;
2. The height of WEEE symbols is more than 7 mm;
3. The model no. on above marking plate may be replaced by other ones listed in the report.



<b>Test item particulars</b> ..... :	
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 type="checkbox"/> pluggable equipment <input 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:
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) .....	16A
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) .....	<2000m
Altitude of test laboratory (m) .....	<2000m
Mass of equipment (kg) .....	<1Kg
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object.....:	N (not applicable)
- test object does meet the requirement .....	P (Pass)
- test object does not meet the requirement .....	F (Fail)
<b>Testing</b> ..... :	
Date of receipt of test item.....:	24 July 2017
Date(s) of performance of tests.....:	24 July 2017 ~ 28 July 2017

**General remarks:**

The test results presented in this report relate only to the object tested.  
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

**General product information:**

1. Top and bottom enclosure are melt together by ultrasonic welding.
2. Max. ambient temperature 25°C.
3. All models are identical to each other except for model name and appearance, unless otherwise specified, all tests are perform on model YM-UD06.

**Abbreviations used in the report:**

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

Indicate used abbreviations (if any)



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


<b>1</b>	<b>GENERAL</b>		<b>P</b>
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<b>1.5</b>	<b>Components</b>		<b>P</b>
1.5.1	General		<b>P</b>
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	<b>P</b>
1.5.2	Evaluation and testing of components		<b>P</b>
1.5.3	Thermal controls		<b>N</b>
1.5.4	Transformers	Transformer used is suitable for their intended applications and comply with relevant parts of this standard and particularly Annex C, see Annex C – Transformers.	<b>P</b>
1.5.5	Interconnecting cables	The interconnecting cables contain only SELV.	<b>P</b>
1.5.6	Capacitors bridging insulation	Y1-cap used	<b>P</b>
1.5.7	Resistors bridging insulation	No fusing resistors	<b>N</b>
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	No fusing resistor bridging basic insulation	<b>N</b>
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No such resistors	<b>N</b>
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No such resistors	<b>N</b>
1.5.8	Components in equipment for IT power systems		<b>N</b>
1.5.9	Surge suppressors	No surge suppressors	<b>N</b>
1.5.9.1	General		<b>N</b>
1.5.9.2	Protection of VDRs		<b>N</b>
1.5.9.3	Bridging of functional insulation by a VDR		<b>N</b>
1.5.9.4	Bridging of basic insulation by a VDR		<b>N</b>
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		<b>N</b>

<b>1.6</b>	<b>Power interface</b>		<b>P</b>
1.6.1	AC power distribution systems	TN distribution systems.	<b>P</b>
1.6.2	Input current	(see appended table 1.6.2)	<b>P</b>
1.6.3	Voltage limit of hand-held equipment		<b>N</b>
1.6.4	Neutral conductor		<b>P</b>

<b>1.7</b>	<b>Marking and instructions</b>		<b>P</b>
1.7.1	Power rating and identification markings		<b>P</b>
1.7.1.1	Power rating marking		<b>P</b>



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	Multiple mains supply connections.....:		N
	Rated voltage(s) or voltage range(s) (V) .....	100-240V~	P
	Symbol for nature of supply, for d.c. only.....:		N
	Rated frequency or rated frequency range (Hz) ...:	50/60Hz	P
	Rated current (mA or A) .....	2A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark .....	See copy of marking plate	P
	Model identification or type reference .....	See copy of marking plate	P
	Symbol for Class II equipment only .....		P
	Other markings and symbols .....	CE Mark	P
1.7.1.3	Use of graphical symbols		N
1.7.2	Safety instructions and marking	Operating/safety instructions made available to the user.	P
1.7.2.1	General		P
1.7.2.2	Disconnect devices	Appliance inlet	P
1.7.2.3	Overcurrent protective device		N
1.7.2.4	IT power distribution systems		N
1.7.2.5	Operator access with a tool		N
1.7.2.6	Ozone	No ozone	N
1.7.3	Short duty cycles	Continuous operation	N
1.7.4	Supply voltage adjustment .....		N
	Methods and means of adjustment; reference to installation instructions .....		N
1.7.5	Power outlets on the equipment .....	No standard power outlets	N
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....	F1,T3.15A 250V	P
1.7.7	Wiring terminals	No such terminals	N
1.7.7.1	Protective earthing and bonding terminals .....		N
1.7.7.2	Terminals for a.c. mains supply conductors		N
1.7.7.3	Terminals for d.c. mains supply conductors		N
1.7.8	Controls and indicators		N
1.7.8.1	Identification, location and marking .....		N
1.7.8.2	Colours .....		N
1.7.8.3	Symbols according to IEC 60417 .....	No used symbols	N
1.7.8.4	Markings using figures .....		N
1.7.9	Isolation of multiple power sources .....	No multiple power sources	N
1.7.10	Thermostats and other regulating devices .....	No such regulating device.	N
1.7.11	Durability	The marking withstand the required test.	P





IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
1.7.12	Removable parts		N
1.7.13	Replaceable batteries .....		N
	Language(s) .....	English	—
1.7.14	Equipment for restricted access locations.....		N

<b>2</b>	<b>PROTECTION FROM HAZARDS</b>		<b>P</b>
2.1	Protection from electric shock and energy hazards		<b>P</b>
2.1.1	Protection in operator access areas		<b>P</b>
2.1.1.1	Access to energized parts	Energized parts are not accessible.	<b>P</b>
	Test by inspection .....	Complies.	<b>P</b>
	Test with test finger (Figure 2A) .....	Complies.	<b>P</b>
	Test with test pin (Figure 2B) .....	Complies.	<b>P</b>
	Test with test probe (Figure 2C) .....	No TNV circuit.	<b>N</b>
2.1.1.2	Battery compartments	No battery in the equipment.	<b>N</b>
2.1.1.3	Access to ELV wiring	No internal wiring at ELV.	<b>N</b>
	Working voltage (V <sub>peak</sub> or V <sub>rms</sub> ); minimum distance through insulation (mm)	(see appended tables 2.10.2 and 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage circuit wiring.	<b>N</b>
2.1.1.5	Energy hazards .....	(see appended tables 2.1.1.5)	<b>P</b>
2.1.1.6	Manual controls	No shafts of knobs etc.	<b>N</b>
2.1.1.7	Discharge of capacitors in equipment	No X-capacitor	<b>N</b>
	Measured voltage (V); time-constant (s) .....		—
2.1.1.8	Energy hazards – d.c. mains supply	AC mains supply.	<b>N</b>
	a) Capacitor connected to the d.c. mains supply ..		<b>N</b>
	b) Internal battery connected to the d.c. mains supply .....		<b>N</b>
2.1.1.9	Audio amplifiers .....		<b>N</b>
2.1.2	Protection in service access areas		<b>N</b>
2.1.3	Protection in restricted access locations		<b>N</b>

<b>2.2</b>	<b>SELV circuits</b>		<b>P</b>
2.2.1	General requirements	(see appended table 2.2)	<b>P</b>
2.2.2	Voltages under normal conditions (V) .....	< 60V d.c.	<b>P</b>
2.2.3	Voltages under fault conditions (V) .....	< 60V d.c.	<b>P</b>
2.2.4	Connection of SELV circuits to other circuits .....	SELV circuits are only connected to other SELV circuits.	<b>P</b>





IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
<b>2.3</b>	<b>TNV circuits</b>		N
2.3.1	Limits	No TNV circuits	N
	Type of TNV circuits .....		—
2.3.2	Separation from other circuits and from accessible parts		N
2.3.2.1	General requirements		N
2.3.2.2	Protection by basic insulation		N
2.3.2.3	Protection by earthing		N
2.3.2.4	Protection by other constructions .....		N
2.3.3	Separation from hazardous voltages		N
	Insulation employed .....		—
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed .....		—
2.3.5	Test for operating voltages generated externally		N
<b>2.4</b>	<b>Limited current circuits</b>		P
2.4.1	General requirements		P
2.4.2	Limit values		P
	Frequency (Hz) .....		—
	Measured current (mA) .....		—
	Measured voltage (V) .....		—
	Measured circuit capacitance (nF or $\mu$ F) .....	CY101=CY201=CY301=1000 pF	—
2.4.3	Connection of limited current circuits to other circuits		P
<b>2.5</b>	<b>Limited power sources</b>		P
	a) Inherently limited output		N
	b) Impedance limited output	(see appended table 2.5)	N
	c) Regulating network limited output under normal operating and single fault condition	(see appended table 2.5)	P
	Use of integrated circuit (IC) current limiters		N
	d) Overcurrent protective device limited output		N
	Max. output voltage (V), max. output current (A), max. apparent power (VA) .....	(see appended table 2.5)	—
	Current rating of overcurrent protective device (A) ..		—
	Use of integrated circuit (IC) current limiters	(See Annex CC)	N
<b>2.6</b>	<b>Provisions for earthing and bonding</b>		N
2.6.1	Protective earthing	Class II equipment	N
2.6.2	Functional earthing		N



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

<b>2.7</b>	<b>Overcurrent and earth fault protection in primary circuits</b>		<b>P</b>
2.7.1	Basic requirements	Protective device is integrated in the equipment, see also Sub-clause 5.3	P
	Instructions when protection relies on building installation		N
2.7.2	Faults not simulated in 5.3.7	Considered.	P
2.7.3	Short-circuit backup protection	Adequate protective device.	P
2.7.4	Number and location of protective devices .....	Fusing resistor used	P



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

2.7.5	Protection by several devices	Only one protective device. See Sub-clause 2.7.4.	N
2.7.6	Warning to service personnel.....:		N

<b>2.8</b>	<b>Safety interlocks</b>		N
2.8.1	General principles	No safety interlocks used	N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation		N
	Protection against extreme hazard		N
2.8.5	Moving parts		N
2.8.6	Overriding		N
2.8.7	Switches, relays and their related circuits		N
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) .....		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N
2.8.7.4	Electric strength test	(see appended table 5.2)	N
2.8.8	Mechanical actuators		N

<b>2.9</b>	<b>Electrical insulation</b>		P
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	Humidity treatment performed at 48 hr.	P
	Relative humidity (%), temperature (°C) .....	25°C, 93%	—
2.9.3	Grade of insulation	Insulation complies with sub-clauses 2.10, 4.5.a and 5.2.	P
2.9.4	Separation from hazardous voltages	Insulation is considered to be functional, basic, double or reinforced insulation.	P
	Method(s) used .....	Method 1	—

<b>2.10</b>	<b>Clearances, creepage distances and distances through insulation</b>		P
2.10.1	General		P
2.10.1.1	Frequency .....		P
2.10.1.2	Pollution degrees .....	Pollution Degree 2	P
2.10.1.3	Reduced values for functional insulation	See 5.3.4	P
2.10.1.4	Intervening unconnected conductive parts		P



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
2.10.1.5	Insulation with varying dimensions		P
2.10.1.6	Special separation requirements	No TNV	N
2.10.1.7	Insulation in circuits generating starting pulses	No such circuit.	N
2.10.2	Determination of working voltage	See appended table 2.10.2	P
2.10.2.1	General	(See appended table)	P
2.10.2.2	RMS working voltage	Ditto.	P
2.10.2.3	Peak working voltage	Ditto.	P
2.10.3	Clearances	(See appended table)	P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages	Overvoltage Category II is considered	P
	a) AC mains supply .....	Normal transient voltage considered. 2500V	P
	b) Earthed d.c. mains supplies .....	AC mains	N
	c) Unearthed d.c. mains supplies .....		N
	d) Battery operation .....		N
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	See 5.3.4	N
2.10.3.5	Clearances in circuits having starting pulses	(see appended table 2.10.3 and 2.10.4)	N
2.10.3.6	Transients from a.c. mains supply .....		N
2.10.3.7	Transients from d.c. mains supply .....		N
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....		N
2.10.3.9	Measurement of transient voltage levels		N
	a) Transients from a mains supply		N
	For an a.c. mains supply .....		N
	For a d.c. mains supply .....		N
	b) Transients from a telecommunication network :		N
2.10.4	Creepage distances	See below.	P
2.10.4.1	General	See appended table 2.10.3 and 2.10.4	P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests .....	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	See below.	P
2.10.5.1	General		P



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation		N
2.10.5.4	Semiconductor devices		N
2.10.5.5	Cemented joints	(see appended table 2.10.3 and 2.10.4)	N
2.10.5.6	Thin sheet material – General	Thin sheet material complies strength test	P
2.10.5.7	Separable thin sheet material	See above.	P
	Number of layers (pcs) .....	2 layers	—
2.10.5.8	Non-separable thin sheet material		N
2.10.5.9	Thin sheet material – standard test procedure		N
	Electric strength test	(see appended table 2.10.5)	—
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 .....	(See appended table)	P
	a) Basic insulation not under stress .....		N
	b) Basic, supplementary, reinforced insulation .....		P
	c) Compliance with Annex U .....		P
	Two wires in contact inside wound component; angle between 45° and 90° .....		P
2.10.5.13	Wire with solvent-based enamel in wound components		N
	Electric strength test	(see appended table 2.10.5)	—
	Routine test		N
2.10.5.14	Additional insulation in wound components	No such construction.	N
	Working voltage .....		N
	- Basic insulation not under stress .....		N
	- Supplementary, reinforced insulation .....		N
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
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	(see appended table 2.10.3 and 2.10.4)	N
2.10.6.4	Insulation between conductors on different layers of a printed board		N
	Distance through insulation	(see appended table 2.10.5)	N
	Number of insulation layers (pcs).....		N



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
2.10.7	Component external terminations	(see appended table 2.10.3 and 2.10.4)	N
2.10.8	Tests on coated printed boards and coated components		N
2.10.8.1	Sample preparation and preliminary inspection		N
2.10.8.2	Thermal conditioning		N
2.10.8.3	Electric strength test	(see appended table 5.2)	N
2.10.8.4	Abrasion resistance test		N
2.10.9	Thermal cycling		N
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N
2.10.11	Tests for semiconductor devices and cemented joints		N
2.10.12	Enclosed and sealed parts		N

<b>3</b>	<b>WIRING, CONNECTIONS AND SUPPLY</b>		P
3.1	General		N
3.1.1	Current rating and overcurrent protection		N
3.1.2	Protection against mechanical damage		N
3.1.3	Securing of internal wiring		N
3.1.4	Insulation of conductors		N
3.1.5	Beads and ceramic insulators		N
3.1.6	Screws for electrical contact pressure		N
3.1.7	Insulating materials in electrical connections		N
3.1.8	Self-tapping and spaced thread screws		N
3.1.9	Termination of conductors		P
	10 N pull test		P
3.1.10	Sleeving on wiring		N

<b>3.2</b>	<b>Connection to a mains supply</b>		P
3.2.1	Means of connection	Refer below:	P
3.2.1.1	Connection to an a.c. mains supply	The equipment is provided with a Plug.	P
3.2.1.2	Connection to a d.c. mains supply	The equipment is not for connection to a d.c. mains supply.	N
3.2.2	Multiple supply connections		N
3.2.3	Permanently connected equipment	The equipment is not intended for permanent connection to the mains.	N
	Number of conductors, diameter of cable and conduits (mm) .....		—





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Clause	Requirement+Test	Result-Remark	Verdict
3.2.4	Appliance inlets		N
3.2.5	Power supply cords	Refer below:	N
3.2.5.1	AC power supply cords		N
	Type .....		—
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		—
3.2.5.2	DC power supply cords		N
3.2.6	Cord anchorages and strain relief		N
	Mass of equipment (kg), pull (N) .....		—
	Longitudinal displacement (mm) .....		—
3.2.7	Protection against mechanical damage		N
3.2.8	Cord guards		N
	Diameter or minor dimension D (mm); test mass (g) :		—
	Radius of curvature of cord (mm).....		—
3.2.9	Supply wiring space		N
<b>3.3</b>	<b>Wiring terminals for connection of external conductors</b>		N
3.3.1	Wiring terminals		N
3.3.2	Connection of non-detachable power supply cords		N
3.3.3	Screw terminals		N
3.3.4	Conductor sizes to be connected		N
	Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ).....		—
3.3.5	Wiring terminal sizes		N
	Rated current (A), type, nominal thread diameter (mm) .....		—
3.3.6	Wiring terminal design		N
3.3.7	Grouping of wiring terminals		N
3.3.8	Stranded wire		N
<b>3.4</b>	<b>Disconnection from the mains supply</b>		P
3.4.1	General requirement	The equipment is provided with a appliance inlet	P
3.4.2	Disconnect devices	See above.	P
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N
3.4.4	Parts which remain energized	No parts remain energized after the disconnect device is pull out.	N
3.4.5	Switches in flexible cords	No switches in flexible cords	N





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Clause	Requirement+Test	Result-Remark	Verdict
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
3.4.8	Switches as disconnect devices		N
3.4.9	Plugs as disconnect devices		P
3.4.10	Interconnected equipment	No interconnections using hazardous voltages.	N
3.4.11	Multiple power sources	One power source only.	N
<b>3.5</b>	<b>Interconnection of equipment</b>		P
3.5.1	General requirements	SELV Circuit.	P
3.5.2	Types of interconnection circuits .....	SELV Circuit.	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection	N
3.5.4	Data ports for additional equipment		N
<b>4</b>	<b>PHYSICAL REQUIREMENTS</b>		P
4.1	Stability		N
	Angle of 10°	Direct plug-in equipment.	N
	Test force (N) .....		N
<b>4.2</b>	<b>Mechanical strength</b>		P
4.2.1	General		P
	Rack-mounted equipment.	(see Annex DD)	N
4.2.2	Steady force test, 10 N		P
4.2.3	Steady force test, 30 N		N
4.2.4	Steady force test, 250 N		P
4.2.5	Impact test		P
	Fall test		P
	Swing test		N
4.2.6	Drop test; height (mm) .....	1000mm±10mm	N
4.2.7	Stress relief test	89°C, 7h, No danger Parts	P
4.2.8	Cathode ray tubes	No CRT	N
	Picture tube separately certified .....	(see separate test report or attached certificate)	N
4.2.9	High pressure lamps	No such lamps	N
4.2.10	Wall or ceiling mounted equipment; force (N) .....		N
<b>4.3</b>	<b>Design and construction</b>		P



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Clause	Requirement+Test	Result-Remark	Verdict
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N)..... :	No this devices.	N
4.3.3	Adjustable controls	No such controls	N
4.3.4	Securing of parts	No loosening of parts impairing creepage distances or clearances is likely to occur.	P
4.3.5	Connection by plugs and sockets	SELV voltage connections for the output. Not compatible with connection for the input.	P
4.3.6	Direct plug-in equipment		P
	Torque ..... :	0.02Nm	—
	Compliance with the relevant mains plug standard :	The plug for different countries shall be evaluated when submitted for national approval.	N
4.3.7	Heating elements in earthed equipment	No heating elements	N
4.3.8	Batteries		N
	- Overcharging of a rechargeable battery		N
	- Unintentional charging of a non-rechargeable battery		N
	- Reverse charging of a rechargeable battery		N
	- Excessive discharging rate for any battery		N
4.3.9	Oil and grease	No oil and grease.	N
4.3.10	Dust, powders, liquids and gases	No dust, powders, liquids and gases.	N
4.3.11	Containers for liquids or gases	No containers for liquid and gases.	N
4.3.12	Flammable liquids ..... :	No flammable liquid.	N
	Quantity of liquid (l) ..... :		N
	Flash point (°C) ..... :		N
4.3.13	Radiation		N
4.3.13.1	General	Refer below:	N
4.3.13.2	Ionizing radiation	The equipment does not generate ionizing radiation.	N
	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	The equipment does not produce significant UV radiation.	N
	Part, property, retention after test, flammability classification ..... :		N



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Clause	Requirement+Test	Result-Remark	Verdict
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....	The equipment does not produce UV radiation.	N
4.3.13.5	Lasers (including laser diodes) and LEDs	No LED used	N
4.3.13.5.1	Lasers (including laser diodes)		N
	Laser class .....		—
4.3.13.5.2	Light emitting diodes (LEDs)		N
4.3.13.6	Other types .....	The equipment does not generate other types of radiation.	N

<b>4.4</b>	<b>Protection against hazardous moving parts</b>		N
4.4.1	General	No moving parts	N
4.4.2	Protection in operator access areas .....		N
	Household and home/office document/media shredders	(see Annex EE)	N
4.4.3	Protection in restricted access locations .....		N
4.4.4	Protection in service access areas		N
4.4.5	Protection against moving fan blades		N
4.4.5.1	General		N
	Not considered to cause pain or injury.a).....		N
	Is considered to cause pain, not injury.b) .....		N
	Considered to cause injury. c).....		N
4.4.5.2	Protection for users		N
	Use of symbol or warning .....		N
4.4.5.3	Protection for service persons		N
	Use of symbol or warning .....		N

<b>4.5</b>	<b>Thermal requirements</b>		P
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per Annex L .....		—
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

<b>4.6</b>	<b>Openings in enclosures</b>		P
4.6.1	Top and side openings	Top openings	P
	Dimensions (mm) .....	0.9 x 23mm	—
4.6.2	Bottoms of fire enclosures		N
	Construction of the bottom, dimensions (mm) ...		—



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Clause	Requirement+Test	Result-Remark	Verdict
4.6.3	Doors or covers in fire enclosures		N
4.6.4	Openings in transportable equipment		N
4.6.4.1	Constructional design measures		N
	Dimensions (mm) .....		—
4.6.4.2	Evaluation measures for larger openings		N
4.6.4.3	Use of metallized parts		N
4.6.5	Adhesives for constructional purposes		N
	Conditioning temperature (°C), time (weeks).....		—

<b>4.7</b>	<b>Resistance to fire</b>		P
4.7.1	Reducing the risk of ignition and spread of flame	Refer below:	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	(see appended table 5.3)	N
4.7.2	Conditions for a fire enclosure	See below	P
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure is required to cover all parts.	P
4.7.2.2	Parts not requiring a fire enclosure		N
4.7.3	Materials		P
4.7.3.1	General	PCB: V-0.	P
4.7.3.2	Materials for fire enclosures	Min. V-1	P
4.7.3.3	Materials for components and other parts outside fire enclosures		P
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 filters in the equipment.	N
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	N

<b>5</b>	<b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b>		P
5.1	Touch current and protective conductor current		P
5.1.1	General	(See appended table 5.1)	P
5.1.2	Configuration of equipment under test (EUT)	Only one mains supply.	P
5.1.2.1	Single connection to an a.c. mains supply		P
5.1.2.2	Redundant multiple connections to an a.c. mains supply	No connection.	N
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	Ditto	N
5.1.3	Test circuit		P
5.1.4	Application of measuring instrument	See appended table 5.1.6. Annex D	P



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Clause	Requirement+Test	Result-Remark	Verdict
5.1.5	Test procedure	Considered.	P
5.1.6	Test measurements		P
	Supply voltage (V) .....	264V	—
	Measured touch current (mA) .....	See appended table 5.1.	—
	Max. allowed touch current (mA) .....	0.25mA	—
	Measured protective conductor current (mA) .....	See appended table	—
	Max. allowed protective conductor current (mA)....	See appended table	—
5.1.7	Equipment with touch current exceeding 3,5 mA	The touch current does not exceed 3.5mA.	N
5.1.7.1	General .....		N
5.1.7.2	Simultaneous multiple connections to the supply		N
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N
	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) EUT with earthed telecommunication ports .....		N
	b) EUT whose telecommunication ports have no reference to protective earth		N
<b>5.2</b>	<b>Electric strength</b>		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure	(see appended table 5.2)	P
<b>5.3</b>	<b>Abnormal operating and fault conditions</b>		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	(see appended Annex B)	N
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation.....		P
5.3.5	Electromechanical components	No electromechanical components in secondary circuits.	N
5.3.6	Audio amplifiers in ITE .....		N
5.3.7	Simulation of faults	See the appended table	P
5.3.8	Unattended equipment	No thermostats, temperature limiters or thermal cut-outs	N



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Clause	Requirement+Test	Result-Remark	Verdict
5.3.9	Compliance criteria for abnormal operating and fault conditions	No fire propagated beyond the equipment. No molten metal was emitted. Electric strength test primary to SELV was passed	P
5.3.9.1	During the tests		P
5.3.9.2	After the tests		P

<b>6</b>	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		N
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N
6.1.1	Protection from hazardous voltages		N
6.1.2	Separation of the telecommunication network from earth		N
6.1.2.1	Requirements	(see appended table 5.2)	N
	Supply voltage (V) .....		—
	Current in the test circuit (mA) .....		—
6.1.2.2	Exclusions .....		N

<b>6.2</b>	<b>Protection of equipment users from overvoltages on telecommunication networks</b>		N
6.2.1	Separation requirements		N
6.2.2	Electric strength test procedure		N
6.2.2.1	Impulse test	(see appended table 5.2)	N
6.2.2.2	Steady-state test	(see appended table 5.2)	N
6.2.2.3	Compliance criteria		N

<b>6.3</b>	<b>Protection of the telecommunication wiring system from overheating</b>		N
	Max. output current (A) .....		—
	Current limiting method .....		—

<b>7</b>	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		N
7.1	General		N
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
7.3	Protection of equipment users from overvoltages on the cable distribution system		N
7.4	Insulation between primary circuits and cable distribution systems		N
7.4.1	General		N
7.4.2	Voltage surge test	(see appended table 5.2)	N
7.4.3	Impulse test	(see appended table 5.2)	N



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Clause	Requirement+Test	Result-Remark	Verdict
<b>A</b>	<b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		<b>N</b>
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)		<b>N</b>
A.1.1	Samples .....		—
	Wall thickness (mm) .....		—
A.1.2	Conditioning of samples; temperature (°C) .....		<b>N</b>
A.1.3	Mounting of samples .....		<b>N</b>
A.1.4	Test flame (see IEC 60695-11-3)		<b>N</b>
	Flame A, B, C or D .....		—
A.1.5	Test procedure		<b>N</b>
A.1.6	Compliance criteria		<b>N</b>
	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)		<b>N</b>
A.2.1	Samples, material.....		—
	Wall thickness (mm) .....		—
A.2.2	Conditioning of samples; temperature (°C) .....		<b>N</b>
A.2.3	Mounting of samples .....		<b>N</b>
A.2.4	Test flame (see IEC 60695-11-4)		<b>N</b>
	Flame A, B or C .....		—
A.2.5	Test procedure		<b>N</b>
A.2.6	Compliance criteria		<b>N</b>
	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		<b>N</b>
	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)		<b>N</b>
A.3.1	Mounting of samples		<b>N</b>
A.3.2	Test procedure		<b>N</b>
A.3.3	Compliance criterion		<b>N</b>





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Clause	Requirement+Test	Result-Remark	Verdict

<b>B</b>	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		N
B.1	General requirements		N
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
B.2	Test conditions		N
B.3	Maximum temperatures	(see appended table 5.3)	N
B.4	Running overload test	(see appended table 5.3)	N
B.5	Locked-rotor overload test		N
	Test duration (days) .....		—
	Electric strength test: test voltage (V) .....		—
B.6	Running overload test for d.c. motors in secondary circuits		N
B.6.1	General		N
B.6.2	Test procedure		N
B.6.3	Alternative test procedure		N
B.6.4	Electric strength test; test voltage (V) .....		N
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N
B.7.1	General		N
B.7.2	Test procedure		N
B.7.3	Alternative test procedure		N
B.7.4	Electric strength test; test voltage (V) .....		N
B.8	Test for motors with capacitors	(see appended table 5.3)	N
B.9	Test for three-phase motors	(see appended table 5.3)	N
B.10	Test for series motors		N
	Operating voltage (V) .....		—

<b>C</b>	<b>ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		P
	Position .....	T1	—
	Manufacturer .....	Refer to appended table 1.5.1	—
	Type .....	Refer to appended table 1.5.1	—
	Rated values .....	Refer to appended table 1.5.1	—
	Method of protection.....	Protection by circuit design.	—
C.1	Overload test	(see appended table 5.3)	P



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Clause	Requirement+Test	Result-Remark	Verdict
C.2	Insulation	(see appended tables 5.2 and C.2) Secondary winding used triple insulated wire	P
	Protection from displacement of windings .....	By insulation tape and bobbin	P
<b>D</b>	<b>ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)</b>		P
D.1	Measuring instrument		P
D.2	Alternative measuring instrument		N
<b>E</b>	<b>ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)</b>		N
<b>F</b>	<b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)</b>		P
<b>G</b>	<b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		N
G.1	Clearances		N
G.1.1	General		N
G.1.2	Summary of the procedure for determining minimum clearances		N
G.2	Determination of mains transient voltage (V)		N
G.2.1	AC mains supply .....		N
G.2.2	Earthed d.c. mains supplies .....		N
G.2.3	Unearthed d.c. mains supplies .....		N
G.2.4	Battery operation .....		N
G.3	Determination of telecommunication network transient voltage (V) .....		N
G.4	Determination of required withstand voltage (V)		N
G.4.1	Mains transients and internal repetitive peaks .....		N
G.4.2	Transients from telecommunication networks .....		N
G.4.3	Combination of transients		N
G.4.4	Transients from cable distribution systems		N
G.5	Measurement of transient voltages (V)		N
	a) Transients from a mains supply		N
	For an a.c. mains supply		N
	For a d.c. mains supply		N
	b) Transients from a telecommunication network		N
G.6	Determination of minimum clearances .....		N



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Clause	Requirement+Test	Result-Remark	Verdict

<b>H</b>	<b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b>		N
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<b>J</b>	<b>ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		N
	Metal(s) used .....		—

<b>K</b>	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)</b>		N
K.1	Making and breaking capacity		N
K.2	Thermostat reliability; operating voltage (V) .....		N
K.3	Thermostat endurance test; operating voltage (V) :		N
K.4	Temperature limiter endurance; operating voltage (V) .....		N
K.5	Thermal cut-out reliability		N
K.6	Stability of operation	(see appended table 5.3)	N

<b>L</b>	<b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)</b>		P
L.1	Typewriters		N
L.2	Adding machines and cash registers		N
L.3	Erasers		N
L.4	Pencil sharpeners		N
L.5	Duplicators and copy machines		N
L.6	Motor-operated files		N
L.7	Other business equipment	Max. rated load	P

<b>M</b>	<b>ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)</b>		N
M.1	Introduction		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringing signal		N
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
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V) .....		N



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
<b>N</b>	<b>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)</b>		N
N.1	ITU-T impulse test generators		N
N.2	IEC 60065 impulse test generator		N
<b>P</b>	<b>ANNEX P, NORMATIVE REFERENCES</b>		—
<b>Q</b>	<b>ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)</b>		N
	a) Preferred climatic categories .....		N
	b) Maximum continuous voltage .....		N
	c) Combination pulse current .....		N
	Body of the VDR. Test according to IEC60695-11-5.....		N
	Body of the VDR. Flammability class of material ( min V-1).....		N
<b>R</b>	<b>ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		N
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N
R.2	Reduced clearances (see 2.10.3)		N
<b>S</b>	<b>ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>		N
S.1	Test equipment		N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N
<b>T</b>	<b>ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		N
		See separate test report	—
<b>U</b>	<b>ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>		P
			—
<b>V</b>	<b>ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)</b>		P
V.1	Introduction		P
V.2	TN power distribution systems		P
<b>W</b>	<b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>		N
W.1	Touch current from electronic circuits		N



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Clause	Requirement+Test	Result-Remark	Verdict
W.1.1	Floating circuits		N
W.1.2	Earthed circuits		N
W.2	Interconnection of several equipments		N
W.2.1	Isolation		N
W.2.2	Common return, isolated from earth		N
W.2.3	Common return, connected to protective earth		N
<b>X</b>	<b>ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)</b>		N
X.1	Determination of maximum input current		N
X.2	Overload test procedure		N
<b>Y</b>	<b>ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)</b>		N
Y.1	Test apparatus .....		N
Y.2	Mounting of test samples .....		N
Y.3	Carbon-arc light-exposure apparatus .....		N
Y.4	Xenon-arc light exposure apparatus .....		N
<b>Z</b>	<b>ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)</b>		P
<b>AA</b>	<b>ANNEX AA, MANDREL TEST (see 2.10.5.8)</b>		N
<b>BB</b>	<b>ANNEX BB, CHANGES IN THE SECOND EDITION</b>		—
<b>CC</b>	<b>ANNEX CC, Evaluation of integrated circuit (IC) current limiters</b>		N
CC.1	General		N
CC.2	Test program 1.....		N
CC.3	Test program 2.....		N
CC.4	Test program 3.....		N
CC.5	Compliance.....		N
<b>DD</b>	<b>ANNEX DD, Requirements for the mounting means of rack-mounted equipment</b>		N
DD.1	General		N
DD.2	Mechanical strength test, variable N.....		N
DD.3	Mechanical strength test, 250N, including end stops:		N
DD.4	Compliance.....		N
<b>EE</b>	<b>ANNEX EE, Household and home/office document/media shredders</b>		N
EE.1	General		N



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Clause	Requirement+Test	Result-Remark	Verdict
EE.2	Markings and instructions		N
	Use of markings or symbols.....:		N
	Information of user instructions, maintenance and/or servicing instructions.....:		N
EE.3	Inadvertent reactivation test.....:		N
EE.4	Disconnection of power to hazardous moving parts:		N
	Use of markings or symbols.....:		N
EE.5	Protection against hazardous moving parts		N
	Test with test finger (Figure 2A) .....:		N
	Test with wedge probe (Figure EE1 and EE2):		N





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

**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:						P
	Annex ZA (normative)				Normative references to international publications with their corresponding European publications Special national conditions IEC and CENELEC code designations for flexible cords		
General	Annex ZB (normative)						P
	Annex ZD (informative)						
	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				
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list:						P
	1.5.7.1	Note		6.1.2.1	Note 2		
	6.2.2.1	Note 2		EE.3	Note		






IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
General (A2:2013)	Delete all the "country" notes in the reference document (IEC 609501:2005/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)	<b>Replace</b> 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
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
(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	Delete.	N
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 *	Added.	P
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.	Added.	N
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.	Added.	N
	<b>Zx Protection against excessive sound pressure from personal music players</b>		N



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	<p><b>Zx.1 General</b></p> <p>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.</p> <p>A personal music player is a portable equipment□ for personal use, that:</p> <ul style="list-style-type: none"><li>– is designed to allow the user to listen to recorded or broadcast sound or video; and</li><li>– primarily uses headphones or earphones that can be worn in or on or around the ears; and</li><li>– allows the user to walk around while in use.</li></ul> <p>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.</p> <p>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.</p> <p>The requirements in this sub-clause are valid for music or video mode only.</p> <p>The requirements do not apply:</p> <ul style="list-style-type: none"><li>– while the personal music player is connected to an external amplifier; or</li><li>– while the headphones or earphones are not used.</li></ul> <p>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.</p> <p>The requirements do not apply to:</p> <ul style="list-style-type: none"><li>– hearing aid equipment and professional equipment;</li></ul> <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"><li>– 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.</li></ul> <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. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>		N



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	<p><b>Zx.2 Equipment requirements</b></p> <p>No safety provision is required for equipment that complies with the following:</p> <ul style="list-style-type: none"><li>– equipment provided as a package (personal music player with its listening device), where the acoustic output LAeq,T is <math>\leq 85</math> dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and</li><li>– a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is <math>\leq 27</math> mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1.</li></ul> <p>NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level LAeq,T is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <ul style="list-style-type: none"><li>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</li><li>b) 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</li><li>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</li></ul> <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> <ul style="list-style-type: none"><li>d) have a warning as specified in Zx.3; and e) not exceed the following:</li></ul> <ul style="list-style-type: none"><li>1) equipment provided as a package (player with its listening device), the acoustic output shall be <math>\leq 100</math> dBA measured while playing the fixed “programme simulation noise” described in EN 50332-1; and</li><li>2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be <math>\leq 150</math> mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” described in EN 50332-1.</li></ul>		N

IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	<p>For music where the average sound pressure (long term LAeq,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 LAeq,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>		
	<p><b>Zx.3 Warning</b></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"> <li>– the symbol of Figure 1 with a minimum height of 5 mm; and</li> <li>– the following wording, or similar: “To prevent possible hearing damage, do not listen at high volume levels for long periods.”</li> </ul>  <p><b>Figure 1 – Warning label (IEC 60417-6044)</b></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
	<b>Zx.4 Requirements for listening devices (headphones and earphones)</b>		N
	<p><b>Zx.4.1 Wired listening devices with analogue input</b> With 94 dBA sound pressure output LAeq,T, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV. 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



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	<b>Zx.4.2 Wired listening devices with digital input</b> 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 LAeq,T of the listening device shall be $\leq 100$ dBA. 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.). NOTE An example of a wired listening device with digital input is a USB headphone.		N
	<b>Zx.4.3 Wireless listening devices</b> In wireless mode: -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 LAeq,T of the listening device shall be $\leq 100$ dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N
	<b>Zx.5 Measurement methods</b> 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. NOTE Test method for wireless equipment provided without listening device should be defined.		N
2.7.1	Replace the subclause as follows: Basic requirements 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): 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; 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; 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	Replaced.	P





IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	instructions. 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.		
2.7.2	This subclause has been declared 'void'.	Declared.	N
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Delete.	N
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: 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   In the conditions applicable to Table 3B delete the words "in some countries" in condition a). In NOTE 1, applicable to Table 3B, delete the second sentence.	Replaced.	N
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		N
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	Delete.	N
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).	Replaced.	N
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N
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.	Replaced.	N
Bibliography	Additional EN standards.	Added.	--
<b>ZA</b>	<b>NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS</b>		-



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

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
1.2.4.1	In <b>Denmark</b> , 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.	No power supply cord provided.	N
1.2.13.14 (A11:2009)	In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.7.2.1 and 7.3 of this annex.	The equipment is not connected to the cable distribution systems.	N
1.5.7.1 (A11:2009)	In <b>Finland, Norway</b> and <b>Sweden</b> , 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.	No such resistors.	N
1.5.8	In <b>Norway</b> , 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
1.5.9.4	In <b>Finland, Norway</b> and <b>Sweden</b> , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
1.7.2.1 1.7.2.1 (A11:2009)	<p>In <b>Finland, Norway</b> and <b>Sweden</b>, 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> <p>In <b>Norway</b> and <b>Sweden</b>, 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: "Equipment connected to the protective earthing of the building"</p>		N





IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	<p>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. 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: ”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>		
1.7.2.1 (A2:2013)	<p>In <b>Denmark</b>, 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 <b>Denmark</b> shall be as follows: In <b>Denmark</b>: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”</p>		N
1.7.5 1.7.5 (A11:2009)	<p>In <b>Denmark</b>, 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 <b>CLASS II EQUIPMENT</b> the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>	No socket-outlets provided.	N



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
1.7.5 (A2:2013)	In <b>Denmark</b> , socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011. 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. 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. Justification the Heavy Current Regulations, 6c		N
2.2.4	In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N
2.3.2	In <b>Finland, Norway and Sweden</b> there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N
2.3.4	In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N
2.6.3.3	In the <b>United Kingdom</b> , the current rating of the circuit shall be taken as 13 A, not 16 A.		N
2.7.1	In the <b>United Kingdom</b> , 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.	The equipment is not direct plug-in equipment.	N
2.10.5.13	In <b>Finland, Norway and Sweden</b> , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N
3.2.1.1	In <b>Switzerland</b> , 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 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, 16 A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A	No power supply cord provided.	N



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
3.2.1.1	<p>In <b>Denmark</b>, 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. 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>	No power supply cord provided.	N
3.2.1.1 (A2:2013)	<p>In <b>Denmark</b>, 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. 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. Justification the Heavy Current Regulations, 6c</p>	No power supply cord provided.	N
3.2.1.1	<p>In <b>Spain</b>, 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. 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. 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. 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>	No power supply cord provided.	N
3.2.1.1	<p>In the <b>United Kingdom</b>, 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. 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>	No power supply cord provided.	N



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
3.2.1.1	In <b>Ireland</b> , 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.	No power supply cord provided.	N
3.2.4	In <b>Switzerland</b> , for requirements see 3.2.1.1 of this annex.	Shall be evaluated during the national approval.	N
3.2.5.1	In the <b>United Kingdom</b> , a power supply cord with conductor of 1,25 mm <sup>2</sup> is allowed for equipment with a rated current over 10 A and up to and including 13 A.	No power supply cord provided.	N
3.3.4	In the <b>United Kingdom</b> , 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: • 1,25 mm <sup>2</sup> to 1,5 mm <sup>2</sup> nominal cross-sectional area.	No power supply cord provided.	N
4.3.6	In the <b>United Kingdom</b> , 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.	The equipment is not direct plug-in equipment.	N
4.3.6	In <b>Ireland</b> , 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.	The equipment is not direct plug-in equipment.	N
5.1.7.1	In <b>Finland, Norway and Sweden</b> TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • 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.	The equipment is not such equipment.	N



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
6.1.2.1 (A1:2010)	<p>In <b>Finland, Norway and Sweden</b>, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either -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. 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 -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. It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 6038414:2005, may bridge this insulation under the following conditions: - 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 6038414; - 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 6038414.</p>		N
6.1.2.2	<p>In <b>Finland, Norway and Sweden</b>, 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.</p>		N
7.2	<p>In <b>Finland, Norway and Sweden</b>, 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.</p>	<p>The equipment is not connected to the distribution systems.</p>	N
7.3 (A11:2009)	<p>In <b>Norway and Sweden</b>, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.</p>		N





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

**Annex ZD (informative)****IEC and CENELEC code designations for flexible cords**

Type of flexible cord	Code designations	
	IEC	CENELEC
<b>PVC insulated cords</b>		
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
<b>Rubber insulated cords</b>		
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
<b>Cords having high flexibility</b>		
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



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 <sup>1)</sup>	
Enclosure	Sabic Innovative Plastics B V	940(f1)	V-0, 120°C	UL94 UL746	UL E45329	
PCB	Shandong Jinbao Electronics Co Ltd	ZD-95(G)F	V-0, 130°C	UL 94 UL 796	UL E222366	
(Alternative)	Various	Various	V-0 or better, 130°C	UL 94 UL 796	UL	
Fuse F1	XC Electronics (Shen Zhen)Corp. Ltd	3T	T3.15A 250V	IEC/EN 60127-1, IEC/EN 60127-3	VDE 40019614	
(Alternative)	Shenzhen Lanson Electronics Co. Ltd..	3K	T3.15A 250V	IEC/EN 60127-1, IEC/EN 60127-3	VDE 40010682	
Y-capacitor (CY101, CY201, CY301)	JYH HSU (JEC) ELECTRONICS LTD	JD	Max.1000pF, Min.250VAC, 125°C, Y1 type	IEC/EN 60384-14	VDE 40038642	
(Alternative)	Jya-Nay Co Ltd	JN	Max.1000pF, Min.250VAC, 125°C, Y1 type	IEC/EN 60384-14	TUV 69250774	
(Alternative)	Guangdong South Hongming Electronic Science & Technology Co., Ltd	F	Max.1000pF, Min.250VAC, 125°C, Y1 type	IEC/EN 60384-14	VDE 40036393	
Transformer (T1)	ShenZhen You & Me Electronics Co.,Ltd	YM-UD06	Class B	EN 60950-1	Test with appliance	
Bobbin	Chang Chun Plastics Co Ltd	T375J	Phenolic,V-0, 150°C Thickness 0.75mm Min.	UL 94 UL 746	E59481	
(Alternative)	Sumitomo Bakelite Co., Ltd.	PM-9820, PM-9630	Phenolic,V- 0,150°C Thickness 0.75mm Min.	UL 94 UL 746	UL E41429	
-Tape	Jingjiang Yahua Pressure Sensitive Co., Ltd.	PZ, CT	130°C	UL510	UL E165111	
(Alternative)	Jingjiang Fuwei Adhesive Product Co., Ltd.	FW	130°C	UL510	UL E302608	
-Wire	Various	Various	130°C,	UL1446	UL	
-Triple insulated wire	E&B Technology Co., Ltd.	E&B-XXXB	130 °C	IEC/EN 60950-1	VDE40023473 UL E315265	
(Alternative)	Furukawa Electric Co., Ltd.	TEX-E	130 °C	IEC/EN 60950-1	VDE006735 UL E308908	
-Varnish	Shenzhen xingshida Scien Tech Prod Co., Ltd	SD-1181 SD-1182	130 °C	UL 1446	UL E327170	
AC Inlet (CON1)	Zhejiang LECI Electronics Co., Ltd	DB-8-5	2.5A, 250V	IEC/EN 62320	VDE 40032028	





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 <sup>1)</sup>	
(Alternative)	ZHE JIANG BEI ER JIA ELECTRONIC CO LTD	ST-A03-005	2.5A, 250V	IEC/EN 62320	VDE 40014833	
Bridge diode (DB1)	Various	Various	Min 0.8A, min. 1000Vac	EN 60950-1	Test with appliance	
Storage Capacitor (EC1 ,EC2) (Primary)	Various	Various	68 $\mu$ F, min 400V, 105 °C	EN 60950-1	Test with appliance	
1) An asterisk indicates a mark which assures the agreed level of surveillance						
Supplementary information: N/A						





1.5.1	Table: Opto Electronic Devices	N
Manufacturer.....:	--	
Type.....:	--	
Separately tested.....:	--	
Bridging insulation.....:	--	
External creepage distance.....:	--	
Internal creepage distance.....:	--	
Distance through insulation.....:	--	
Tested under the following conditions.....:	--	
Input.....:	--	
Output.....:	--	
Supplementary information:		





1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	Irated (A)	I (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90V/ 50Hz	--	1.613	91.22	F1	1.613	Rated load.
90V/ 60Hz	--	1.537	90.97	F1	1.537	
100V/ 50Hz	2	1.422	90.11	F1	1.422	
100V/ 60Hz	2	1.374	90.03	F1	1.374	
240V/ 50Hz	2	0.734	88.32	F1	0.734	
240V/ 60Hz	2	0.720	88.16	F1	0.720	
264V/ 50Hz	--	0.635	88.82	F1	0.635	
264V/ 60Hz	--	0.621	88.83	F1	0.621	
Supplementary information:--						

2.1.1.5	TABLE: max. V, A, VA test				P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
5.0	2.4	5.12	5.66	22.76	
Note(s): Test voltage: 264V/50Hz					

2.1.1.7	TABLE: discharge test				N
Condition	V <sub>0</sub> (V pk)	37% V <sub>0</sub> (V pk)	37%(t) (ms)	t <sub>u</sub> →1s (V pk)	
--	--	--	--	--	
Note(s):					

2.2.2	TABLE: Hazardous voltage measurement				P
Location		Max. Voltage		Voltage Limitation Component	
		V peak	V d.c		
T101	Pin 9 to pin 10	35.2	--	--	
T201	Pin 9 to pin 10	38.4	--	--	
T301	Pin 9 to pin 10	36.4	--	--	
Fault test performed on voltage limiting components		Voltage measured(V) in SELV circuits (V peak or V d.c.)			
D101 pin4-5 shorted		0			
D201 pin4-5 shorted		0			
D301 pin4-5 shorted		0			
Note(s):					
Test voltage: 264V/50Hz					



<b>2.4.2</b>	<b>TABLE: limited current circuit measurement</b>					<b>P</b>
Location		Voltage (V)	Current (mA)	Freq. (KHz)	Limit (mA)	Comments
CY101 sec. pin to earth		12.8	6.4	18.75	13.12	CY101=1000pF
CY201 sec. pin to earth		10.4	5.2	12.92	9.04	CY201=1000pF
CY301 sec. pin to earth		10.4	5.2	16.36	11.45	CY301=1000pF
Note(s): --						

<b>2.5</b>	<b>TABLE: limited power source measurement</b>					<b>P</b>
Components		Uoc (V)	Isc (A)		VA	
			Meas.	Limit	Meas.	Limit
Normal		5.12	5.66	8.0	22.76	100
Single fault: U204 pin 1-4 SC		0	0	8.0	0	100
Single fault: U204 pin 4-8 SC		0	0	8.0	0	100
Single fault: D101 pin4-5 SC		0	0	8.0	0	100
Supplementary information:						
Note(s):						
Measured Uoc (V) with all load circuits disconnected.						
SC=short circuit, Test voltage: 264V/50Hz						

2.10.2	TABLE: working voltage measurement			P
Location		RMS voltage (V)	Peak voltage (V)	Comments
T101				
T101 Pin 1 to 9		217	368	
T101 Pin 3 to 9		222	432	
T101 Pin 4 to 9		205	320	
T101 Pin 5 to 9		206	368	
T101 Pin 1 to 10		213	328	
T101 Pin 3 to 10		235	480	Max. RMS voltage and max. Peak voltage
T101 Pin 4 to 10		206	316	
T101 Pin 5 to 10		206	396	
CY101 pri. pin to sec. pin		213	328	
T201				
T201 Pin 1 to 9		221	356	
T201 Pin 3 to 9		232	444	
T201 Pin 4 to 9		206	320	
T201 Pin 5 to 9		206	388	
T201 Pin 1 to 10		212	324	
T201 Pin 3 to 10		234	446	Max. RMS voltage and max. Peak voltage



T201 Pin 4 to 10	206	324	
T201 Pin 5 to 10	207	400	
CY201 pri. pin to sec. pin	212	324	
T301			
T301 Pin 1 to 9	217	376	
T301 Pin 3 to 9	224	420	
T301 Pin 4 to 9	218	344	
T301 Pin 5 to 9	218	392	
T301 Pin 1 to 10	217	340	
T301 Pin 3 to 10	242	468	Max. RMS voltage and max. Peak voltage
T301 Pin 4 to 10	218	340	
T301 Pin 5 to 10	219	388	
CY301 pri. pin to sec. pin	218	340	
Supplementary information: Supply voltage:240V/50Hz			

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
Functional:							
Between L to N before fuse resistor	420	240	2.0	4.5	2.4	4.5	
Basic/supplementary:							
Different polarity of F1	420	240	2.0	4.5	2.4	4.5	
Reinforced:							
Primary parts (DB1) to outside enclosure	420	240	4.0	8.0	4.8	8.0	
Primary trace to Secondary trace under T1	480	242	4.2	6.5	5.0	6.5	
T1 primay winding to secondary pin	480	242	4.2	5.2	5.0	5.2	
T1 primay winding to secondary winding	480	242	4.2	5.2	5.0	5.2	
Primay pin to secondary pin under CY101	328	240	4.0	6.4	4.8	6.4	
Primay pin to secondary pin under CY201	324	240	4.0	6.4	4.8	6.4	
Primay pin to secondary pin under CY301	340	240	4.0	6.4	4.8	6.4	
Supplementary information: Supply voltage: 240V/50Hz -A force of 10 N is applied to the internal components. -Core of transformer is deeming as primary conductor. - Secondary winding of transformer was used triple insulation wire. -Outside transformer was wrapped two layers insulation tape.							



<b>2.10.5</b>	<b>TABLE: Distance through insulation measurements</b>					<b>P</b>
Distance through insulation (DTI) at/of:		U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Enclosure		420	240	AC 3000	0.4	Min. 2.0
Bobbin		480	242	AC 3000	0.4	Min.0.45
Supplementary information:N.A						

4.3.8	TABLE: Batteries									N
The tests of 4.3.8 are applicable only when appropriate battery data is not available										N
Is it possible to install the battery in a reverse polarity position?										N
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging(mA)		Discharging(mA)		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal operation	--	--	--	--	--	--	--	--	--	
Max. current during fault operation, C1 short	--	--	--	--	--	--	--	--	--	
Test results:										Verdict
- Chemical leaks					After the test, no chemical leaks.					N
- Explosion of the battery					No explosion.					N
- Emission of flame or expulsion of molten metal					No emission of flame or molten metal					N
- Electric strength tests of equipment after completion of tests					--					N
Supplementary information: N/A										

4.5	TABLE: Thermal requirements				P	
	Supply voltage (V) ..... :		See below		—	
	Ambient Tmin (°C) ..... :		See below		—	
	Ambient Tmax (°C) ..... :		See below		—	
Maximum measured temperature T of part/at::		T (°C)			Allowed T <sub>max</sub> (°C)	
Test condition		90V Horizontal	264V Horizontal	90V Vertical	264V Vertical	--
T101 winding		96.7	93.1	97.9	96.6	110
T101 core		90.9	87.5	91.6	89.6	110
PCB near T101		87.7	85.6	89.9	88.3	130
T201 winding		97.3	94.5	98.7	96.9	110
T201 core		91.5	88.7	92.5	90.2	110
PCB near T201		88.2	86.2	90.5	88.9	130





T301 winding	97.7	93.7	98.8	96.7	110
T301 core	91.4	88.4	92.3	89.4	110
PCB near T301	87.1	85.3	90.2	88.6	130
PCB near DB1	95.3	92.1	97.2	93.2	130
PCB near U104	102.5	98.4	107.8	101.5	130
PCB near U204	103.1	100.2	106.9	102.3	130
PCB near U304	102.8	99.7	108.3	102.1	130
PCB near Q101	105.3	104.2	109.5	103.6	130
PCB near Q201	105.9	105.3	108.9	104.0	130
PCB near Q301	104.7	105.0	107.3	105.0	130
CY101 body	76.7	74.5	74.3	75.4	125
CY201 body	74.1	74.9	78.1	75.9	125
CY301 body	75.7	75.1	75.2	76.0	125
EC1 body	80.0	79.8	78.9	79.5	105
EC2 body	83.1	81.4	84.9	81.9	105
EC106 body	60.8	62.3	62.6	64.9	105
EC206 body	61.9	60.3	65.1	65.2	105
EC306 body	61.2	62.0	64.4	64.7	105
AC inlet (CON1)	37.6	33.4	32.4	34.5	70
Enclosure near T101, inside	62.1	60.3	64.7	63.7	120
Enclosure near T101, outside	55.8	56.2	56.1	57.3	95
Ambient	25.0	25.0	25.0	25.0	--

Note(s):

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

Supplementary information:

The maximum ambient temperature permitted by the manufacturer's specification is 25°C.

4.5.5	TABLE: Ball pressure test of thermoplastic parts			P
	Allowed impression diameter (mm) .....:	≤ 2 mm		—
Part		Test temperature (°C)	Impression diameter (mm)	
Enclosure		125	1.5	
Bobbin		125	1.0	
Supplementary information:				

<b>4.7</b>	<b>TABLE: Resistance to fire</b>				P
Part	Manufacture of material	Type of material	Thickness (mm)	Flammability class	Evidence
--	--	--	--	--	--
--	--	--	--	--	--



<b>4.7</b>	<b>TABLE: Resistance to fire</b>					<b>P</b>
Part	Manufacture of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Supplementary information: Please refer to table 1.5.1 for details.						

<b>5.1</b>	<b>TABLE: Touch current</b>				<b>P</b>
Measured between	Measured (mA)	Limit (mA)	Comments/conditions		
Terminal A at Output connector	0.085	0.25	L→terminal A		
Terminal A at Output connector	0.085	0.25	N→terminal A		
Terminal A at enclosure wrapped with foil	0.022	0.25	L→terminal A		
Terminal A at enclosure wrapped with foil	0.022	0.25	N→terminal A		
Supplementary information: Test voltage: 264/50Hz					

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:--				
--	--	--	--	
--	--	--	--	
Basic/supplementary:				
L to N (fuse resistor disconnect)	AC	1500	No	
Reinforced:				
L/N Input to output terminals	AC	3000	No	
L/N Input to plastic enclosure	AC	3000	No	
T101: primary and secondary	AC	3000	No	
T101: secondary and core (core considered as primary)	AC	3000	No	
T201: primary and secondary	AC	3000	No	
T201: secondary and core (core considered as primary)	AC	3000	No	
T301: primary and secondary	AC	3000	No	
T301: secondary and core (core considered as primary)	AC	3000	No	
One layers insulation type of T101	AC	3000	No	
Supplementary information:--				

<b>5.3</b>	<b>TABLE: Fault condition tests</b>						<b>P</b>
	Ambient temperature (°C) .....: 25°C						—
	Power source for EUT: Manufacturer, model/type, output rating .....: -						—
Component No.	Fault	Supply voltage (V)	Test time	Fuse(Ye s/No)	Fuse current (A)	Observation	



EC1	S-C	264V/50Hz	1 S	F1	0	Fuse resistor (F1) opened immediately and repeat ten times, no hazard.
DB1 pin1-2	S-C	264V/50Hz	1 S	F1	0	Fuse resistor (F1) opened immediately and repeat ten times, no hazard.
U104 pin4-8	S-C	264V/50Hz	1 S	F1	0	Unit shutdown immediately and recoverable, no hazard, no damage.
U204 pin4-8	S-C	264V/50Hz	1 S	F1	0	Unit shutdown immediately and recoverable, no hazard, no damage.
U304 pin4-8	S-C	264V/50Hz	1 S	F1	0	Unit shutdown immediately and recoverable, no hazard, no damage.
T101 secondary	S-C	264V/50Hz	30 min.	F1	0	Unit USB5 and USB6 shutdown immediately and recoverable, no hazard, no damage.
T201 secondary	S-C	264V/50Hz	30 min.	F1	0	Unit USB3 and USB4 shutdown immediately and recoverable, no hazard, no damage.
T301 secondary	S-C	264V/50Hz	30 min.	F1	0	Unit USB1 and USB2 shutdown immediately and recoverable, no hazard, no damage.
D101	S-C	264V/50Hz	30 min.	F1	0	Unit USB5 and USB6 shutdown immediately and recoverable, no hazard, no damage.
D201	S-C	264V/50Hz	30 min.	F1	0	Unit USB3 and USB4 shutdown immediately and recoverable, no hazard, no damage.
D301	S-C	264V/50Hz	30 min.	F1	0	Unit USB1 and USB2 shutdown immediately and recoverable, no hazard, no damage.
Output	S-C	264V/50Hz	30 min.	F1	0	Unit shutdown immediately and recoverable, no hazard, no damage.
Output	O-L	90V/50Hz	6 h	F1	1.613 to 1.635 to 1.651 to 0	Max. output current increased to 5.66A shutdown, no hazards, no damaged. T1 winding: 110.3°C T1 core: 103.6°C Enclosure: 72.9°C Ambient: 25.0°C

Supplementary information:

S/C: short circuit, O/C: open-circuited, O/L: overload.

Each fault where F1 opened was repeated 10 times with each fuse source and with same result.

The unit passed 3000V hi-pot test between primary and accessible output connector after single fault test above.



C.2	TABLE: Transformers							P
Loc.	Test insulation	Working voltage peak/V 2.10.2	Working voltage rem/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.	
T1 primary winding/core to secondary	Reinforced	480	242	3000V AC	4.2	5.0	Min 0.45mm	
Loc.	Test insulation			Test voltage/V	Measured clearance/mm	Measured creepage distance/mm	Measured distance thr. Insul./mm; number of layers	
T1 primary winding/core to secondary	Reinforced			3000V AC	5.2	5.2	Triple insulated wire used as sec. winding	
Supplementary information: Two layers insulation tape wrapped the outside of transformer. mackabler.dk								



### Photos

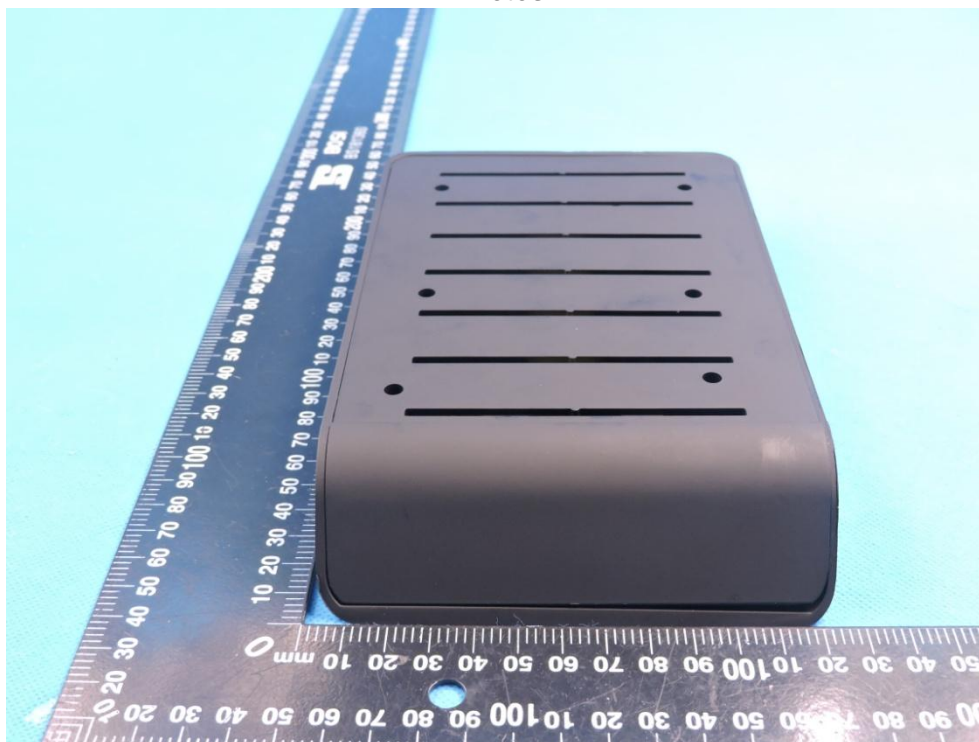


Fig. 1 Overview

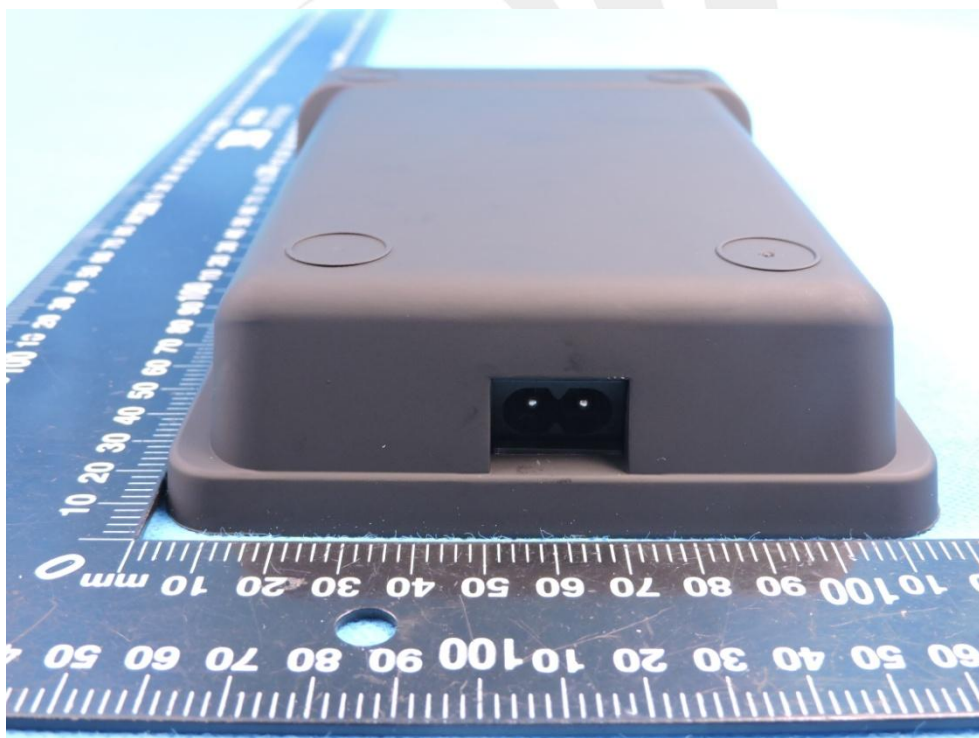


Fig. 2 Overview





Fig. 3 Overview

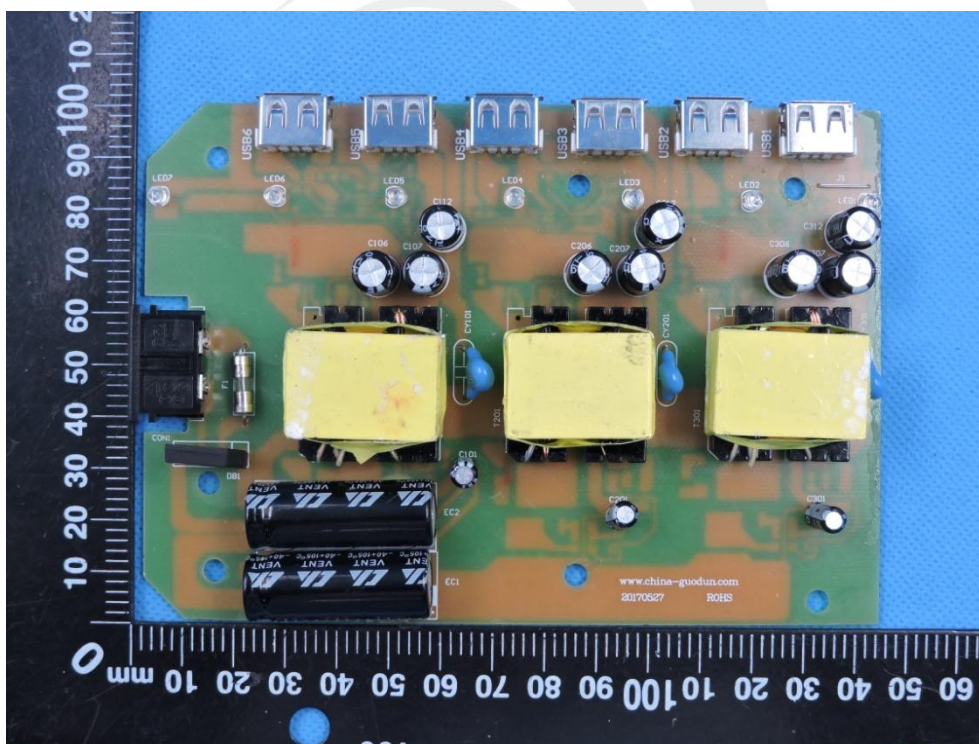


Fig. 4 Internal view



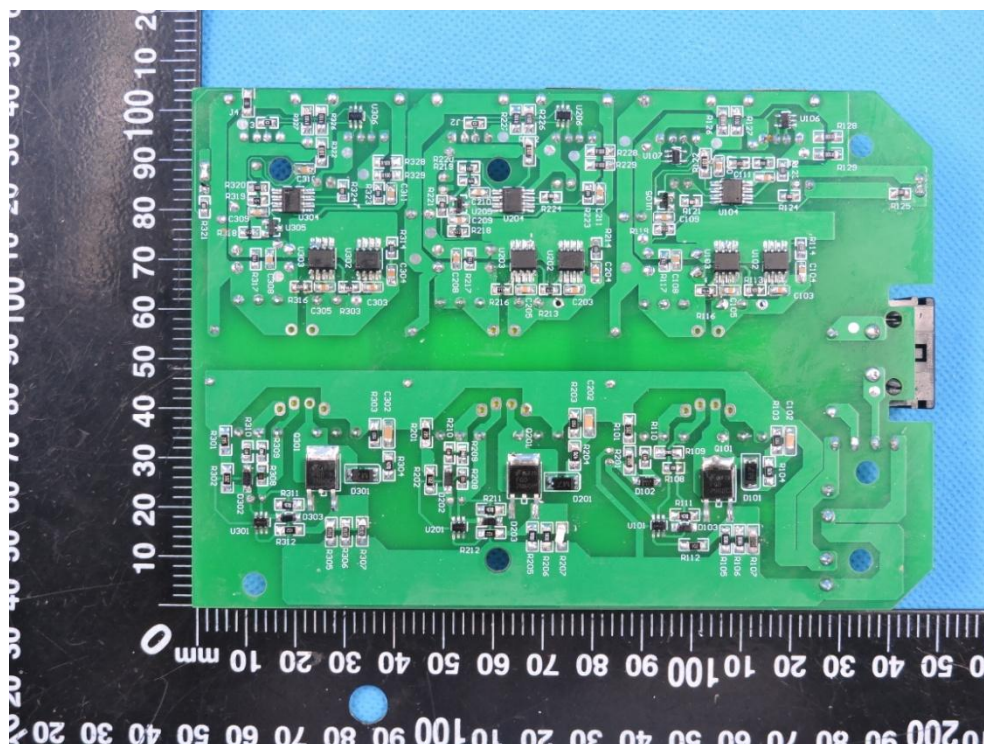


Fig. 5 Internal view

==== End of Test Report ====