



STC (Dongguan) Company Limited
EC DECLARATION OF CONFORMITY

Reference Number: LVD-D161915DOC

Intracom Asia Co., Ltd.
4F., No.77, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan

declare the product

Description: 24-Port PoE+ Web-Managed Gigabit Ethernet Switch with 2SFP Ports
Brand Name: Intellinet
Model: 560559

complies with the requirements of the
EC Low Voltage Directive 2006/95/EC (until April 19th, 2016) and
EC Low Voltage Directive 2014/35/EU (from April 20th, 2016)

Applicable Standard(s) with amendments:

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

General Remarks:

This declaration is only valid when used in conjunction with the technical file(s) refers to DE115901
This declaration applies specifically to the sample(s) investigated in the technical report mentioned above and not to the bulk.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives.

Manufacturer/Importer



Test Laboratory

Signature

LI Chang Jun, Ricky
Authorized Signatory
Electrical Safety Department
For and on behalf of
STC (Dongguan) Company Limited

www.dgstc.org

Date of Issue: 2016-04-13



Deutsche
Akkreditierungsstelle
D-PL-12121-01-00

TEST REPORT	
IEC/EN 60950-1	
Information technology equipment – Safety –	
Part 1: General requirements	
Report Number.....	DE115901
Date of issue.....	2016-04-13
Total number of pages	Page 1 to 61 for test report Appendix 1 to 6 for product photographs
Testing Laboratory	STC (Dongguan) Company Limited
Address.....	68 Fumin Nan Road, Dalang , Dongguan City, Guangdong Province, P.R. China
Applicant's name	Intracom Asia Co., Ltd.
Address.....	4F., No.77, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan
Test specification:	
Standard	<input type="checkbox"/> IEC 60950-1:2005 (2nd Edition); Am 1:2009; Am 2: 2013 <input checked="" type="checkbox"/> EN 60950-1:2006+A11:2009+A1:2010+A12: 2011+A2:2013
Test procedure	N/A
Non-standard test method.....	N/A
Test Report Form No.	IEC60950_1B_M2
Test Report Form(s) Originator	SGS Fimko Ltd
Master TRF	Dated 2010-04
Modified by	STC
Modified Date	2013-12
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Test item description.....	24-Port PoE+ Web-Managed Gigabit Ethernet Switch with 2SFP Ports
Trade Mark.....	Intellinet
Manufacturer	Intracom Asia Co., Ltd.
Address.....	4F., No.77, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan
Model/Type reference	560559
Ratings.....	100-240V~ 50/60Hz, 3.5A






Testing procedure and testing location:	
<input checked="" type="checkbox"/> Testing Laboratory:	STC (Dongguan) Company Limited
Testing location/ address	68 Fumin Nan Road, Dalang, Dongguan City, Guangdong Province, P.R. China
<input type="checkbox"/> Associated Laboratory:	
Testing location/ address	
Tested by (name + signature)	Amy Lin
Approved by (+ signature)	Ricky Lee
<input type="checkbox"/> Testing procedure: TMP	
Tested by (name + signature)	
Approved by (+ signature)	
Testing location/ address	
<input type="checkbox"/> Testing procedure: WMT	
Tested by (name + signature)	
Witnessed by (+ signature)	
Approved by (+ signature)	
Testing location/ address	
<input type="checkbox"/> Testing procedure: SMT	
Tested by (name + signature)	
Approved by (+ signature)	
Supervised by (+ signature)	
Testing location/ address	
<input type="checkbox"/> Testing procedure: RMT	
Tested by (name + signature)	
Approved by (+ signature)	
Supervised by (+ signature)	
Testing location/ address	



Amy Lin



List of Attachments (including a total number of pages in each attachment): Appendix 1 to 6 for product photographs	
Summary of testing: The sample(s) tested complies with the requirements of EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011 +A2:2013	
Tests performed (name of test and test clause): EN 60950-1:2006+ A11:2009+ A1:2010+A12:2011 + A2:2013	Testing location: STC (Dongguan) Company Limited 68 Fumin Nan Road, Dalang, Dongguan City, Guangdong Province, P.R. China
Summary of compliance with National Differences List of countries addressed: Europe <input checked="" type="checkbox"/> The product fulfils the requirements of <u>EN 60950-1:2006+ A11:2009+ A1:2010+A12:2011+A2:2013</u>	
Copy of marking plate: <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"><p>Brand:Intellinet </p><p>Model:560559</p><p>Product Name:24-Port PoE+ Web-Managed Gigabit Ethernet Switch with 2SFP Ports</p><p>Rated Input Voltage: 100-240V~ 50-60Hz</p><p>Rated Input Current:MAX 3.5A</p><p>POE Power Rating:30W</p><p>  Made in China</p></div>	



Test item particulars	: 24-Port PoE+ Web-Managed Gigabit Ethernet Switch with 2SFP Ports
Equipment mobility	: <input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable [] stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains	: <input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord [] non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains for main unit
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	:
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 checked="" type="checkbox"/> Class I <input 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)	: N/A
Pollution degree (PD)	: <input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	: IPX0
Altitude during operation (m)	: 2000
Altitude of test laboratory (m)	: < 2000
Mass of equipment (kg)	: 2.88kg
Possible test case verdicts:	
- test case does not apply to the test object.....	: N (N/A)
- test object does meet the requirement	: P (Pass)
- test object does not meet the requirement.....	: F (Fail)
Testing	
Date of receipt of test item	: 2014-08-04, 2014-11-14
Date(s) of performance of tests	: 2014-08-06 to 2014-08-21, 2014-11-14 to 2014-11-20
General remarks:	
<p>The test results presented in this report relate only to the object tested. This report shall not be reproduced, 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.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p> <p>This report shall not be reproduced unless prior written approval from STC (Dongguan) Company Limited For Conditions of issuance of this test report, please refer to the below Homepage.</p> <p>Appendix 1 to 6 for product photographs</p>	

**Manufacturer's Declaration per sub-clause 6.2.5 of IEC 60950-1:****When differences exist; they shall be identified in the General product information section.****General product information:**

The submitted unit is Class I 24-Port PoE+ Web-Managed Gigabit Ethernet Switch with 2SFP Ports, Which including POE function and net function, total 24 Ports, two SFP port and one console port. Which supplied by a approved supply cord with main plug and appliance coupler.

The max operated temperature is 25°C which is specified by manufacturer.

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/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		P

1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	see appended table	P
1.5.2	Evaluation and testing of components		P
1.5.3	Thermal controls	Not used	N
1.5.4	Transformers		P
1.5.5	Interconnecting cables	No such cables	N
1.5.6	Capacitors bridging insulation	Approved capacitors used	P
1.5.7	Resistors bridging insulation	No such resistors	N
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N
1.5.8	Components in equipment for IT power systems		N
1.5.9	Surge suppressors		P
1.5.9.1	General		P
1.5.9.2	Protection of VDRs	Approved VDR used	P
1.5.9.3	Bridging of functional insulation by a VDR		P
1.5.9.4	Bridging of basic insulation by a VDR		N
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N

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

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings	See below	P
1.7.1.1	Power rating marking		P
	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	AC nature	N
	Rated frequency or rated frequency range (Hz)	50/60Hz	P



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (mA or A)	3.5A	P
1.7.1.2	Identification markings	See copy of marking plate	P
	Manufacturer's name or trade-mark or identification mark	Manufacturer's trade-mark: Intellinet	P
	Model identification or type reference	Model number: 560559	P
	Symbol for Class II equipment only	Class I equipment	N
	Other markings and symbols	Additional symbol or marking does not give rise to misunderstanding.	P
1.7.1.3	Use of graphical symbols		N
1.7.2	Safety instructions and marking		P
1.7.2.1	General		P
1.7.2.2	Disconnect devices	Appliance coupler	P
1.7.2.3	Overcurrent protective device	Pluggable Equipment Type A	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 radiation	N
1.7.3	Short duty cycles	Continuous operation	N
1.7.4	Supply voltage adjustment	Not such equipment	N
	Methods and means of adjustment; reference to installation instructions		N
1.7.5	Power outlets on the equipment	No such power outlets	N
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	T6.3A 250V	P
1.7.7	Wiring terminals		P
1.7.7.1	Protective earthing and bonding terminals	On appliance inlet	P
1.7.7.2	Terminals for a.c. mains supply conductors	No such terminal provided	N
1.7.7.3	Terminals for d.c. mains supply conductors	No d.c. mains	N
1.7.8	Controls and indicators		P
1.7.8.1	Identification, location and marking		P
1.7.8.2	Colours	No colour impairs safety	P
1.7.8.3	Symbols according to IEC 60417		N
1.7.8.4	Markings using figures		N
1.7.9	Isolation of multiple power sources		N
1.7.10	Thermostats and other regulating devices	No such adjustable devices	N
1.7.11	Durability	Legible after test	P
1.7.12	Removable parts	No such parts	N
1.7.13	Replaceable batteries	No Battery used	N
	Language(s)		—



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.14	Equipment for restricted access locations	Not for installation in restricted access locations	N

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts		P
	Test by inspection		P
	Test with test finger (Figure 2A)	contacts of connect cannot be touched	P
	Test with test pin (Figure 2B)	contacts of connect cannot be touched	P
	Test with test probe (Figure 2C)		N
2.1.1.2	Battery compartments	No battery	N
2.1.1.3	Access to ELV wiring		N
	Working voltage (V _{peak} or V _{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No such wires	N
2.1.1.5	Energy hazards	No hazardous energy	P
2.1.1.6	Manual controls	No manual control	N
2.1.1.7	Discharge of capacitors in equipment		P
	Measured voltage (V); time-constant (s)	4V after 1s	—
2.1.1.8	Energy hazards – d.c. mains supply		N
	a) Capacitor connected to the d.c. mains supply		N
	b) Internal battery connected to the d.c. mains supply		N
2.1.1.9	Audio amplifiers	Not Audio amplifiers	N
2.1.2	Protection in service access areas	No service access area	N
2.1.3	Protection in restricted access locations	Equipment not intended for installation in restricted access locations	N

2.2	SELV circuits		P
2.2.1	General requirements		P
2.2.2	Voltages under normal conditions (V)	51.3V max	P
2.2.3	Voltages under fault conditions (V)	Single fault did not cause excessive voltage in accessible SELV circuits.	P
2.2.4	Connection of SELV circuits to other circuits	In compliance with sub-clause 2.2.2; 2.2.3	P



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.3	TNV circuits		P
2.3.1	Limits		P
	Type of TNV circuits	TNV1	—
2.3.2	Separation from other circuits and from accessible parts		P
2.3.2.1	General requirements		P
2.3.2.2	Protection by basic insulation		P
2.3.2.3	Protection by earthing		P
2.3.2.4	Protection by other constructions :		N
2.3.3	Separation from hazardous voltages		P
	Insulation employed	Main protective earthing terminal used	—
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed		—
2.3.5	Test for operating voltages generated externally		N

2.4	Limited current circuits		P
2.4.1	General requirements		P
2.4.2	Limit values	70mA	P
	Frequency (Hz)	1.773MHz	—
	Measured current (mA).....	0.008	—
	Measured voltage (V)	16.3 Peak	—
	Measured circuit capacitance (nF or μF)	3300pF	—
2.4.3	Connection of limited current circuits to other circuits		P

2.5	Limited power sources		P
	a) Inherently limited output		P
	b) Impedance limited output		N
	c) Regulating network limited output under normal operating and single fault condition		N
	d) Overcurrent protective device limited output		P
	Max. output voltage (V), max. output current (A), max. apparent power (VA).....	See appended tabel	—
	Current rating of overcurrent protective device (A) ..		—
	Use of integrated circuit (IC) current limiters		—

2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing		P
2.6.2	Functional earthing		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3	Protective earthing and protective bonding conductors		P
2.6.3.1	General		N
2.6.3.2	Size of protective earthing conductors		N
	Rated current (A), cross-sectional area (mm ²), AWG	Rated current: 3.5A	—
2.6.3.3	Size of protective bonding conductors		N
	Rated current (A), cross-sectional area (mm ²), AWG		—
	Protective current rating (A), cross-sectional area (mm ²), AWG		
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)	0.014Ω 32A, 1mins	P
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		P
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment		P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N
2.6.5.3	Disconnection of protective earth		P
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		P
2.6.5.7	Screws for protective bonding		P
2.6.5.8	Reliance on telecommunication network or cable distribution system		N

2.7	Overcurrent and earth fault protection in primary circuits		P
2.7.1	Basic requirements		P
	Instructions when protection relies on building installation		N
2.7.2	Faults not simulated in 5.3.7		P
2.7.3	Short-circuit backup protection		P
2.7.4	Number and location of protective devices	Fuse F1 used	P



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel		N

2.8	Safety interlocks		N
2.8.1	General principles	No safety interlocks	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		N
2.8.8	Mechanical actuators		N

2.9	Electrical insulation		P
2.9.1	Properties of insulating materials		P
2.9.2	Humidity conditioning		P
	Relative humidity (%), temperature (°C)	93%, 25°C	—
2.9.3	Grade of insulation		P
2.9.4	Separation from hazardous voltages		P
	Method(s) used		—

2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General		P
2.10.1.1	Frequency		P
2.10.1.2	Pollution degrees	2	P
2.10.1.3	Reduced values for functional insulation		P
2.10.1.4	Intervening unconnected conductive parts		P
2.10.1.5	Insulation with varying dimensions		N
2.10.1.6	Special separation requirements		N
2.10.1.7	Insulation in circuits generating starting pulses		N
2.10.2	Determination of working voltage		P
2.10.2.1	General		P



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.2.2	RMS working voltage		P
2.10.2.3	Peak working voltage		P
2.10.3	Clearances		P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply		P
	b) Earthed d.c. mains supplies		P
	c) Unearthed d.c. mains supplies		N
	d) Battery operation		N
2.10.3.3	Clearances in primary circuits		P
2.10.3.4	Clearances in secondary circuits		N
2.10.3.5	Clearances in circuits having starting pulses		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		P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests	IIIb	—
2.10.4.3	Minimum creepage distances		P
2.10.5	Solid insulation		P
2.10.5.1	General		P
2.10.5.2	Distances through insulation		P
2.10.5.3	Insulating compound as solid insulation		N
2.10.5.4	Semiconductor devices		P
2.10.5.5	Cemented joints		N
2.10.5.6	Thin sheet material – General		P
2.10.5.7	Separable thin sheet material		P
	Number of layers (pcs)	2	—
2.10.5.8	Non-separable thin sheet material		N
2.10.5.9	Thin sheet material – standard test procedure		N
	Electric strength test		—



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.10	Thin sheet material – alternative test procedure		P
	Electric strength test		—
2.10.5.11	Insulation in wound components		P
2.10.5.12	Wire in wound components		P
	Working voltage		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°		N
2.10.5.13	Wire with solvent-based enamel in wound components		N
	Electric strength test		—
	Routine test		N
2.10.5.14	Additional insulation in wound components		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		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		N
2.10.6.4	Insulation between conductors on different layers of a printed board		N
	Distance through insulation		N
	Number of insulation layers (pcs)		N
2.10.7	Component external terminations		P
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		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



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

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection		P
3.1.2	Protection against mechanical damage		P
3.1.3	Securing of internal wiring		P
3.1.4	Insulation of conductors		P
3.1.5	Beads and ceramic insulators	No such parts	N
3.1.6	Screws for electrical contact pressure	No such screw	N
3.1.7	Insulating materials in electrical connections		N
3.1.8	Self-tapping and spaced thread screws	No such screw	N
3.1.9	Termination of conductors		P
	10 N pull test		P
3.1.10	Sleeving on wiring		P

3.2	Connection to a mains supply		P
3.2.1	Means of connection.....:	Appliance coupler	P
3.2.1.1	Connection to an a.c. mains supply		P
3.2.1.2	Connection to a d.c. mains supply		N
3.2.2	Multiple supply connections		N
3.2.3	Permanently connected equipment	Not such equipment	N
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets		P
3.2.5	Power supply cords		P
3.2.5.1	AC power supply cords		P
	Type	H03VV-F	—
	Rated current (A), cross-sectional area (mm ²), AWG	Rated current 3.5A, 0.75 mm ²	—
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



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

3.3	Wiring terminals for connection of external conductors		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 ²)..... :		—
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
3.4	Disconnection from the mains supply		P
3.4.1	General requirement		P
3.4.2	Disconnect devices	Appliance coupler	P
3.4.3	Permanently connected equipment		N
3.4.4	Parts which remain energized		N
3.4.5	Switches in flexible cords		N
3.4.6	Number of poles - single-phase and d.c. equipment		N
3.4.7	Number of poles - three-phase equipment		N
3.4.8	Switches as disconnect devices		N
3.4.9	Plugs as disconnect devices		P
3.4.10	Interconnected equipment		P
3.4.11	Multiple power sources		N

3.5	Interconnection of equipment		P
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits	SELV circuits to SELV circuits	P
3.5.3	ELV circuits as interconnection circuits		N
3.5.4	Data ports for additional equipment	No such data ports	N

4	PHYSICAL REQUIREMENTS		N
4.1	Stability		N
	Angle of 10°		N
	Test force (N)	< 7kg	N

4.2	Mechanical strength		P
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Clause	Requirement + Test	Result - Remark	Verdict
4.2.1	General		P
	Rack-mounted equipment.		N
4.2.2	Steady force test, 10 N		P
4.2.3	Steady force test, 30 N		P
4.2.4	Steady force test, 250 N		P
4.2.5	Impact test		P
	Fall test		P
	Swing test		P
4.2.6	Drop test; height (mm)	Not suhc appliance	N
4.2.7	Stress relief test		N
4.2.8	Cathode ray tubes		N
	Picture tube separately certified		N
4.2.9	High pressure lamps		N
4.2.10	Wall or ceiling mounted equipment; force (N)		N

4.3	Design and construction		P
4.3.1	Edges and corners	Edges and corners are rounded or smoothed.	P
4.3.2	Handles and manual controls; force (N)		N
4.3.3	Adjustable controls		N
4.3.4	Securing of parts		P
4.3.5	Connection by plugs and sockets		P
4.3.6	Direct plug-in equipment		N
	Torque		—
	Compliance with the relevant mains plug standard		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 or grease.	N
4.3.10	Dust, powders, liquids and gases		N
4.3.11	Containers for liquids or gases	No container for liquid or gas.	N
4.3.12	Flammable liquids	No flammable liquid.	N
	Quantity of liquid (l)		N
	Flash point (°C)		N



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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13	Radiation		P
4.3.13.1	General		N
4.3.13.2	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		N
	Part, property, retention after test, flammability classification		N
4.3.13.4	Human exposure to ultraviolet (UV) radiation		N
4.3.13.5	Lasers (including laser diodes) and LEDs		P
4.3.13.5.1	Lasers (including laser laser diodes)		N
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)	LENs is just for indication function	—
4.3.13.6	Other types		N

4.4	Protection against hazardous moving parts		N
4.4.1	General		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

4.5	Thermal requirements		P
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per Annex L		—



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Clause	Requirement + Test	Result - Remark	Verdict
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 :		P

4.6	Openings in enclosures		P
4.6.1	Top and side openings		P
	Dimensions (mm) :		—
4.6.2	Bottoms of fire enclosures		N
	Construction of the bottom, dimensions (mm) . :		—
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		P
4.6.5	Adhesives for constructional purposes		N
	Conditioning temperature (°C), time (weeks) :		—

4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame		P
	Method 1, selection and application of components wiring and materials	(see appended table 5.3)	P
	Method 2, application of all of simulated fault condition tests		N
4.7.2	Conditions for a fire enclosure		N
4.7.2.1	Parts requiring a fire enclosure		N
4.7.2.2	Parts not requiring a fire enclosure		P
4.7.3	Materials		P
4.7.3.1	General	See appended table 1.5.1.	P
4.7.3.2	Materials for fire enclosures		N
4.7.3.3	Materials for components and other parts outside fire enclosures	Not require fire enclosure	N
4.7.3.4	Materials for components and other parts inside fire enclosures		N
4.7.3.5	Materials for air filter assemblies	No air filter assemblies	N
4.7.3.6	Materials used in high-voltage components	No high-voltage component	N

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General		P



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Clause	Requirement + Test	Result - Remark	Verdict
5.1.2	Configuration of equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply		P
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N
5.1.3	Test circuit		P
5.1.4	Application of measuring instrument		N
5.1.5	Test procedure		N
5.1.6	Test measurements		P
	Supply voltage (V)	254.4V 60Hz	—
	Measured touch current (mA)	1.22mA max	—
	Max. allowed touch current (mA)	3.5 mA max	—
	Measured protective conductor current (mA)	1.25 mA max	—
	Max. allowed protective conductor current (mA) ...	3.5 mA max	—
5.1.7	Equipment with touch current exceeding 3.5 mA		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

5.2	Electric strength		P
5.2.1	General		P
5.2.2	Test procedure		P

5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	(see appended Annex B)	P
5.3.3	Transformers		P



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Clause	Requirement + Test	Result - Remark	Verdict
5.3.4	Functional insulation	Result see appened table 5.3	P
5.3.5	Electromechanical components	No such component	N
5.3.6	Audio amplifiers in ITE	No such component	N
5.3.7	Simulation of faults	(see appened table 5.3)	P
5.3.8	Unattended equipment	No such equipment	N
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests	No fire, no molten metal, no enclosure deformation and no temperature exceeding those in table 5D	P
5.3.9.2	After the tests	No any hazards	P

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

6.2	Protection of equipment users from overvoltages on telecommunication networks		N
6.2.1	Separation requirements		N
6.2.2	Electric strength test procedure		N
6.2.2.1	Impulse test		N
6.2.2.2	Steady-state test		N
6.2.2.3	Compliance criteria		N

6.3	Protection of the telecommunication wiring system from overheating		N
	Max. output current (A)	No telecommunication wiring system	—
	Current limiting method		—

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N
7.1	General	No cable distribution system	N



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Clause	Requirement + Test	Result - Remark	Verdict
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		N
7.4.3	Impulse test		N

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



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Clause	Requirement + Test	Result - Remark	Verdict
	Sample 3 burning time (s)		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.3	Hot flaming oil test (see 4.6.2)		N
A.3.1	Mounting of samples		N
A.3.2	Test procedure		N
A.3.3	Compliance criterion		N

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N
B.1	General requirements	No motor used	N
	Position	--	—
	Manufacturer	--	—
	Type	--	—
	Rated values	--	—
B.2	Test conditions		N
B.3	Maximum temperatures		N
B.4	Running overload test		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	(see appended table 5.3)	P
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		N
B.9	Test for three-phase motors		N
B.10	Test for series motors		N



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Clause	Requirement + Test	Result - Remark	Verdict
	Operating voltage (V)		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
	Method of protection		—
C.1	Overload test		N
C.2	Insulation		P
	Protection from displacement of windings		P

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		P
D.1	Measuring instrument		P
D.2	Alternative measuring instrument		P

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		P
G.1	Clearances		P
G.1.1	General		P
G.1.2	Summary of the procedure for determining minimum clearances		P
G.2	Determination of mains transient voltage (V)		P
G.2.1	AC mains supply		P
G.2.2	Earthed d.c. mains supplies		P
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)		P
G.4.1	Mains transients and internal repetitive peaks		P
G.4.2	Transients from telecommunication networks		N
G.4.3	Combination of transients		N



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Clause	Requirement + Test	Result - Remark	Verdict
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		P

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

K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		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		N

L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		N
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		N

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N
M.1	Introduction		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringling signal		N



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Clause	Requirement + Test	Result - Remark	Verdict
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
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N
N.1	ITU-T impulse test generators		N
N.2	IEC 60065 impulse test generator		N
P	ANNEX P, NORMATIVE REFERENCES		—
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N
	- Preferred climatic categories		N
	- Maximum continuous voltage		N
	- 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
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		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
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N
S.1	Test equipment		N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N



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Clause	Requirement + Test	Result - Remark	Verdict
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N
			—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		N
V.1	Introduction		N
V.2	TN power distribution systems		N
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N
W.1	Touch current from electronic circuits		N
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
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N
X.1	Determination of maximum input current		N
X.2	Overload test procedure		N
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		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
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		N
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		N
CC.1	General		N



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Clause	Requirement + Test	Result - Remark	Verdict
CC.2	Test program 1		N
CC.3	Test program 2		N
CC.4	Test program 3		N
CC.5	Compliance		N

DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		Verdict
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

EE	ANNEX EE, Household and home/office document/media shredders		Verdict
EE.1	General		N
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



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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾	
Main plug	Shenzhen HongPu Electron Co., Ltd.	XTH-005	AC250V 16A	VDE 0620-1	VDE 40026370	
	Various	Various	AC250V 16A	VDE 0620-1	VDE 40026370	
Appliance connector	Shenzhen HongPu Electron Co., Ltd.	XTH-021	AC250V 10A	EN 60320-1	VDE 40025516	
	Various	Various	AC250V 10A	EN 60320-1	VDE or equal	
Supply cord	Shenzhen Baohing Electric Wire & Cable Manufacture Co., Ltd.	H03VV-F	3G0.75mm ²	HD 21.5 S3+A1+A2	VDE 103727	
	Shenzhen Yuxin Wire & Cable Co., Ltd.	H03VV-F	3G0.75mm ²	HD 21.5 S3+A1+A2	VDE 40012386	
	Various	Various	3G0.75mm ²	HD 21.5 S3+A1+A2	VDE or equal	
Appliance inlet	Zhe Jiang Bei Er Jia Electronic Co., Ltd.	ST-A01-001L	AC250V 10A	EN 60320-1	VDE 40013388	
	TECX-UNIONS Technology Corporation	TU-301-AL	AC250V 10A	EN 60320-1	VDE 40014528	
Fuse (F1)	Dongguan Better Electronic Technology Co., Ltd.	932	T6.3A, 250VAC	IEC 60127-1 IEC 60127-3	VDE 40033369	
	Shenzhen Lanson Electronics Co., Ltd.	SMT	T6.3A 250VAC	IEC 60127-1 IEC 60127-3	VDE 40013102	
	Dongguan Hongda Electronic Technology Co., Ltd.	2009	T6.3A 250VAC	IEC 60127-1 IEC 60127-3	VDE 40028260	
	Various	Various	T6.3A 250VAC	IEC 60127-1 IEC 60127-3	VDE or equal	
Varistor (V1)	Centra Science Corp.	CNR- 14D471K	470VAC 85°C	IEC 61051-1 IEC 61051-2	VDE 40008220	
	Lien Shun Electronics Co., Ltd.	14D471K	470VAC 85°C	IEC 61051-1 IEC 61051-2	VDE 40005858	
	Thinking Electronic Industrial Co., Ltd.	TVR14471-D	470VAC 85°C	IEC 61051-1 IEC 61051-2	VDE 40021243	
	Thinking Electronic Industrial Co., Ltd.	TVR14471	470VAC 85°C	IEC 61051-1 IEC 61051-2	VDE 005944	
	Brightking (Shenzhen) Co., Ltd.	471KD14	470AC 85°C	IEC 61051-1 IEC 61051-2	VDE 40027827	



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Clause	Requirement + Test			Result - Remark	Verdict
	Shaanxi Huaxing electronic group Co., Ltd.	MYG20G14K 471	470VAC 85°C	IEC 61051-1 IEC 61051-2	VDE 40018747
	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	STE-14D471K	470VAC 85°C	IEC 61051-1 IEC 61051-2	VDE 40023049
Y1 capacitor (CY3,CY4)	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	3300pF 400Vac 125°C	IEC 60384-14	VDE 40036393
	Shantou High-new Technology Dev. Zone Songtian Enterprise Co., Ltd	CD-Series	3300pF 400Vac 125°C	IEC 60384-14	VDE 40025754
	Shaanxi Huaxing Electronic Development Co., Ltd.	CT7Y1	3300pF 400Vac 125°C	IEC 60384-14	VDE 40015542
	Dongguan Easy-gather Electronic Co., Ltd.	DCF	3300pF 400Vac 125°C	IEC 60384-14	VDE 40022942
	Jya-nay Co., Ltd.	JN	3300pF 400Vac 125°C	IEC 60384-14	TÜV R50232059
	Various	Various	3300pF 400Vac 125°C	IEC 60384-14	VDE or equal
Y2 capacitor (CY1,CY2)	Shaanxi Huaxing Electronic Development Co., Ltd	CT7Y2	3300pF 250Vac 125°C	IEC 60384-14	VDE 40032125
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	3300pF 250Vac 125°C	IEC 60384-14	VDE 40036246
	Shantou High-new Technology Dev. Zone Songtian Enterprise Co., Ltd	CE-Series	3300pF 250Vac 125°C	IEC 60384-14	VDE 40025748
	Dongguan Easy-gather Electronic Co., Ltd.	DCF	3300pF 250Vac 125°C	IEC 60384-14	VDE 40015758
	Jya-nay Co., Ltd.	JN	3300pF 250Vac 125°C	IEC 60384-14	TÜV R 50232060
	Various	Various	3300pF 250Vac 125°C	IEC 60384-14	VDE or equal
Y2 capacitor (CY5,CY6,CY7, CY8)	Shaanxi Huaxing Electronic Development Co., Ltd	CT7Y2	2200pF 250Vac 125°C	IEC 60384-14	VDE 40032125



IEC/EN 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	2200pF 250Vac 125°C	IEC 60384-14	VDE 40036246
	Shantou High-new Technology Dev. Zone Songtian Enterprise Co., Ltd	CE-Series	2200pF 250Vac 125°C	IEC 60384-14	VDE 40025748
	Dongguan Easy-gather Electronic Co., Ltd.	DCF	2200pF 250Vac 125°C	IEC 60384-14	VDE 40015758
	Jya-nay Co., Ltd.	JN	2200pF 250Vac 125°C	IEC 60384-14	TÜV R 50232060
	Various	Various	2200pF 250Vac 125°C	IEC 60384-14	VDE or equal
X2 capacitor (CX1,CX2)	Shantou High-new Technology Development Zone Songtian	MPX	1µF 275Vac 110°C	IEC 60384-14	TÜV R 50136379
	Tenta Electric Industrial Co. Ltd.	MEX	1µF 275Vac 100°C	IEC 60384-14	VDE 119119
	Dain Electronics Co., Ltd.	MPX/NPX/MEX	1µF 275Vac 110°C	IEC 60384-14	VDE 40018798
	Dongguan Easy-gather Electronic Co., Ltd.	MKP-X2	1µF 300Vac 105°C	IEC 60384-14	VDE 40022258
	Various	Various	1µF 275Vac 100°C	IEC 60384-14	VDE or equal
Inductance (LF1,LF2)	Jia Dian Bao Shenzhen Plastics Electronics Co., Ltd	T22*14*8	24mH±20% Class B	IEC 60950-1	Tested within appliance
Winding of Inductance (LF1,LF2)	Pacific Electric Wire & Cable (Shenzhen) Co., Ltd.	UEW/U	130°C	UL 1446	UL E201757
Inductance (L1)	Jia Dian Bao Shenzhen Plastics Electronics Co., Ltd	T68-26A	180uH±10% Class B	EN 60950-1	Tested within appliance
Winding of Inductance (L1)	Pacific Electric Wire & Cable (Shenzhen) Co., Ltd.	UEW/U	130°C	UL 1446	UL E201757
Heat shrinkable Tube (For L1)	Dongguan Quantai Electronics Co., Ltd.	T-2	600V 125°C	UL 224	UL E227336
	Shenzhen Woer Heat-Shrinkable Material Co., Ltd.	RSFR,RSFR-H, RSFR(CB)	300V 125°C	UL 224	UL E203950
	Various	Various	300V 125°C	U L224	UL Approved
NTC (TR1)	Nanjing Shiheng Electronics Co., Ltd.	MF72-5D13	5Ω 5A	EN60539-1	TÜV R 50245892



IEC/EN 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
	Thinking Electronic Industrial Co., Ltd.	SCK-055	5Ω 5A	EN60539-1 EN60730-1	TÜV R 50050155
	Various	Various	5Ω 5A	EN60539-1 EN60730-1	TÜV or equal
Optocoupler (U1,U2,U3)	Everlight Electronics Co., Ltd.	EL817(blank; V)	Dti≥0.4mm, CI≥6.0mm, Cr≥7.5mm, 110°C	EN 60747-5-2	VDE 132249
	Bright Led Electronics Corp.	BPC-817(A; B; C; D; L)	Dti≥0.4mm, Cr=8.0mm, CI=7.6mm, 100°C	EN 60747-5-2	VDE 40007240
	Various	Various	Dti≥0.4mm, Cr=8.0mm, CI=7.6mm, 100°C	EN 60747-5-2	VDE or equal
Transformer T1	Shenzhen Topow Electronics Co., Ltd.	PQ2625/TPT 260A	N1:0.10mmx45T N2 :0.25mmx5T 150uH, Class B	EN 60950-1	Tested within appliance
Bobbin of Transformer T1	Chang Chun Plastics Co., Ltd.	T375J,T357	150°C	UL 94 UL 746	UL E59481
Insulation tape of Transformer T1	Suzhou Mailaduona Electric Material Co., Ltd.	JY312#	130°C	UL 510	UL E188295
Magnet wire of Transformer T1	Dong Guan Yida Industrial Co., Ltd.	QA-1/130	130°C	UL 1446	UL E344055
Insulating tubing of Transformer T1	Great Holding Industrial Co., Ltd.	TFL	200°C	UL 224	UL E156256
Transformer T2	Shenzhen Topow Electronics Co., Ltd	ETD39/TPT2 60A	Primary winding: N1:0.10mmx37T Secondary winding: N2:0.10mmx10T N3:0.10mm10T Class B	EN 60950-1	Tested within appliance
Bobbin of Transformer T2	Chang Chun Plastics Co., Ltd.	T375J,T357	150°C	UL 94 UL 746	UL E59481
Insulation tape of Transformer T2	Suzhou Mailaduona Electric Material Co., Ltd.	JY312#	130°C	UL 510	UL E188295
Magnet wire of Transformer T2	Dong Guan Yida Industrial Co., Ltd.	QA-1/130	130°C	UL 1446	UL E344055
Transformer T3	Shenzhen Topow Electronics Co., Ltd.	EF2525/TPT2 60A	Primary winding: N1:0.40mmx46T N4:0.40mmx34T N5:0.30mmx17T Secondary winding: N2 :0.50mmx5T N3 :0.50mmx5T Class B	EN 60950-1	Tested within appliance



IEC/EN 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Bobbin of Transformer T3	Chang Chun Plastics Co., Ltd.	T375J,T35	150°C	UL94	UL E59481
Insulation tape of Transformer T3	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	PZ/CT	130°C	UL510	UL E165111
Margin tape of Transformer T3	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	WF	130°C	UL510	UL E165111
TIW wire of Transformer T3	Furukawa Electric Co., Ltd.	TEX-E	130°C	UL 2353	UL E206440
Magnet wire of Transformer T3	Pacific Electric Wire&Cable (Shenzhen) Co., Ltd.	UEW/U	130°C	UL1446	UL E201757
Insulating tubing of Transformer T3	Great Holding Industrial Co., Ltd.	TFL	200°C	UL224	UL E156256
PCB	Huizhou Fangzhong Electronic Technology Co., Ltd.	FZ-M FZ-4 FZ-D	V-0, Min130°C	UL 94 UL 746	UL E322072
	Sources Merge Industrial Ltd.	TCL1008FCI TCL1008FR TCL1008FCD TCL1008PCI TCL1008SM TCL1008FRD	V-0, Min105°C	UL 94 UL 746	UL E74729
	Various	Various	V-0 Min.105°C	UL 94 UL 746	UL
PVC Insulation Sheet	Mianyang Longhua Film Co Ltd	PC-770, PC-770F, PC-770F-A	PC, V-0 80°C	UL 94 UL 746	UL E254551
	Suzhou Omay Optical Material Co Ltd	SE42, SE42B	PC, V-0 80°C	UL 94 UL 746	UL E249605
Internal Wire	Various	1007	20-18AWG 60°C	UL 758	UL
Supplementary information: /					

1.6.2 TABLE: Electrical data (in normal conditions)								P
Cond.	U (V)	Hz	I (A)	I rated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
01	100	50	2.11	3.5	211.6	F1	2.11	Normal operation
02	100	60	2.13	3.5	210.9	F1	2.13	Normal operation
03	240	50	0.93	3.5	215.5	F1	0.93	Normal operation
04	240	60	0.93	3.5	214.3	F1	0.93	Normal operation
Supplementary information:								



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

2.1.1.5 c) 1)	TABLE: max. V, A, VA test			P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
5.0	--	5.11	5.83	30.2
supplementary information:				

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

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			P
Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components	
	V peak	V d.c.		
Transformer T2 output after D18	--	51.3	--	
Transformer T2 output pin 9,10 to pin 13, 14	166			
Transformer T2 output pin 9,10 to pin 11, 12	164			
Transformer T3 output after D20	--	5.1		
Transformer T3 output after 7,8 to pin 10,9	192			
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)			
Short circuit of Transformer T2 output after D18	Output terminal is 0V			
Short circuit of Transformer T3 output after D20	Output terminal is 0V			
Remark:				

2.4.2	TABLE: limited current circuit measurement					P
Location	Voltage (V)	Current (mA)	Freq. (MHz)	Limit (mA)	Comments	
PE to CY3 capacitor secondary pin	16.3	0.006	1.773	70	254.4V 60Hz input	
Remark: 254.4V 60Hz input						



IEC/EN 60950-1					
Clause	Requirement + Test	Result - Remark		Verdict	
2.5	TABLE: limited power sources			P	
Circuit output tested:					
Measured Uoc (V) with all load circuits disconnected:					
		I _{sc} (A)		VA	
		Meas.	Limit	Meas.	Limit
Output of Transformer 3 after D23		5.83	8.0	30.2	100
supplementary information:					

2.10.2	Table: working voltage measurement			P
Location	RMS voltage (V)	Peak voltage (V)	Comments	
Pin 1-3 of T2	166	260		
Pin 1-5 of T2	164	252		
Pin 1-7 of T2	147	208		
Pin 2-3 of T2	214	352		
Pin 2-5 of T2	280	420		
Pin 2-7 of T2	365	430		
Pin 1-4 of T3	188	348		
Pin 1-6 of T3	192	357		
Pin 2-4 of T3	129	244		
Pin 2-6 of T3	128	240		
Pin 3-4 of T3	127	224		
Pin 3-6 of T3	126	220		
Pin 1-3 of U3	139	182		
Pin 1-4 of U3	133	178		
Pin 2-3 of U3	137	178		
Pin 2-4 of U3	139	180		
Pin 1-3 of U2	219	352		
Pin 1-4 of U2	220	344		
Pin 2-3 of U2	213	348		
Pin 2-4 of U2	217	348		
Pin 1-3 of U1	226	364		
Pin 1-4 of U1	224	372		
Pin 2-3 of U1	232	368		



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Clause	Requirement + Test	Result - Remark	Verdict
Pin 2-4 of U1	215	372	
Pin 1-2 of CY3	221	352	
supplementary information:			
Tested at 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)	
L and N on PCB tracking	339	240	2.0	3.08	2.5	3.08	
L and E on PCB tracking	339	240	2.0	2.67	2.5	3.34	
N and E on PCB tracking	339	240	2.0	2.28	2.5	3.26	
Winding of T2 and metal cover	339	240	2.0	4.06	2.5	>10	
Capacitor C27 and metal cover	339	240	2.0	3.26	2.5	>10	
Live part and metal enclosure	339	240	2.0	2.31	2.5	>10	
Primary and secondary of T2 on PCB tracking	430	365	4.1	11.52	7.3	11.52	
Primary winding and secondary winding of T2	430	365	4.1	9.3	7.3	9.3	
Primary and secondary of T3 on PCB tracking	357	192	4.0	9.04	5.0	9.04	
Primary winding and secondary winding of T3	357	192	4.0	14.05	5.0	16.55	
Pins of fuse F1 on PCB	339	240	2.0	2.78	2.5	4.97	
Pins of CY3 primary and secondary	352	221	4.0	7.62	5.0	7.62	
Pins of CY4 primary and secondary	352	221	4.0	7.60	5.0	7.60	
Pins of U1 U2 U3 primary and secondary	372	232	4.0	7.62	5.0	7.62	
Supplementary information: --							



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Clause	Requirement + Test	Result - Remark	Verdict

2.10.5	TABLE: Distance through insulation measurements				P	
Distance through insulation (DTI) at/of:		U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Optocoupler (U1,U2,U3)		339	240	--	0.4	>0.4
Bobbin of transformer T2		430	365	--	0.4	1.02
Bobbin of transformer T3		357	192	--	0.4	1.15
Supplementary information: --						

4.3.8	TABLE: Batteries								N
The tests of 4.3.8 are applicable only when appropriate battery data is not available						No battery		N	
Is it possible to install the battery in a reverse polarity position?								N	
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	--	--	--	--	--	--	--	--	--
Max. current during fault condition	--	--	--	--	--	--	--	--	--
Test results:									
- Chemical leaks						--		Verdict	
- Explosion of the battery						--			
- Emission of flame or expulsion of molten metal						--			
- Electric strength tests of equipment after completion of tests						--			
Remark:									



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.8	TABLE: Batteries		N
Battery category..... :			
Manufacturer			
Type / model..... :			
Voltage			
Capacity..... :			
Tested and Certified by (incl. Ref. No.)			
Circuit protection diagram:			
MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)			
Location of replaceable battery		--	
Language(s)		--	
Close to the battery		--	
In the servicing instructions		--	
In the operating instructions		--	



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Clause	Requirement + Test	Result - Remark	Verdict

4.5.1	TABLE: maximum temperatures			P
	Supply voltage (V)	90V 60Hz	254.4V 50Hz	—
	Ambient T _{min} (°C)	22.8	24.3	—
	Ambient T _{max} (°C)	24.3	25.2	—
Maximum measured temperature T of part/at:		T (°C)		Allowed T _{max} (°C)
		90V 60Hz	254.4V 50Hz	
Inlet		45.4	36.8	70+22.8-25=67.8
Varistor V1 T85		43.0	35.0	85+22.8-25=62.8
X capacitor CX1 T100		53.0	38.8	100+22.8-25=97.8
Inductor LF1 Class B		58.7	38.2	120-10=110
Y capacitor CY1 T125		47.5	34.4	125+22.8-25=122.8
Inductor LF2 Class B		58.6	36.6	120-10=110
X capacitor CX2 T100		53.1	36.9	100+22.8-25=97.8
Inductor L1 Class B		76.1	47.6	120-10=110
PCB near Q4 T105		76.9	56.0	105+22.8-25=102.8
PCB near BD1		60.8	41.7	105+22.8-25=102.8
Winding of T1 Class B		86.2	58.8	120-10=110
Bobbin of T1		81.2	56.9	Reference
Capacitor C35 T105		53.3	42.2	105+22.8-25=102.8
Capacitor C27 T105		47.9	40.6	105+22.8-25=102.8
Primary winding of T2 Class B		78.6	67.6	120-10=110
Secondary winding of T2 Class B		72.7	61.8	120-10=110
Bobbin of T2		78.3	68.0	Referenc
PCB near D18		56.3	51.3	105+22.8-25=102.8
Capacitor C37 T105		58.6	53.8	105+22.8-25=102.8
PCB near Q7		57.3	51.9	105+22.8-25=102.8
X capacitor CX3 T100		54.5	49.5	100+22.8-25=97.8
Winding of T3		45.9	44.1	120-10=110
Optocoupler U1 T100		55.3	51.3	100+22.8-25=97.8
Optocoupler U3 T100		43.8	43.2	100+22.8-25=97.8
Y capacitor CY4 T125		41.9	41.7	125+22.8-25=122.8
Internal wire T60		35.4	33.8	60+22.8-25=57.8
Capacitor C7 (signal) T105		40.6	40.6	105+22.8-25=102.8
PCB (signal) T105		39.6	39.3	105+22.8-25=102.8
Heat sink		71.8	52.9	Reference



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Clause	Requirement + Test				Result - Remark		Verdict
Enclosure					36.4	34.9	70+22.8-25=67.8
Power supply cord					28.0	26.7	75+22.8-25=72.8
DC Fan1					38.7	36.1	100-10=90
DC Fan2					32.5	30.7	100-10=90
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	Allowed T _{max} (°C)	Insulation class	
--		--	--	--	--	--	
Supplementary information: Allowed T _{max} =T _{max} +T _{amb} -T _{ma} , T _{amb} =22.8°C, T _{ma} =25°C. The max operated temperature is 25°C which is specified by manufacturer.							

4.5.5	TABLE: Ball pressure test of thermoplastic parts			P
	Allowed impression diameter (mm)	≤ 2 mm		—
Part		Test temperature (°C)	Impression diameter (mm)	
Appliance inlet		125	0.86	
Supplementary information: --				

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

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
Live part and metal enclosure	1.24	3.5		
Live part and console terminal	1.20	3.5		
Live part and signal output terminal	1.20	3.5		
Live part and output terminal	1.21	3.5		
supplementary information: --				



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Clause	Requirement + Test	Result - Remark	Verdict

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Live part and metal enclosure		AC	1500	No
Live part and console terminal		AC	1500	No
Live part and signal output terminal		AC	1500	No
Live part and output terminal		AC	1500	No
Primary and secondary winding of T2		AC	3000	No
Primary and secondary winding of T3		AC	3000	No
Insulation tape of winding of T2 and T3		AC	3000	No
Primary/secondary winding of T2 and core		AC	1500	No
Primary/secondary winding of T3 and core		AC	1500	No
Supplementary information: --				

5.3	TABLE: Fault condition tests					P
Ambient temperature (°C)		--			---	
Power source for EUT: Manufacturer, model/type, output rating		--			---	
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Transformer T2	O-L	254.4.	7 Hours	F1	1.72	When output current increased to 6.8A, EUT steady conditions attained and no hazard, and increased 5% output current, the unit shut down immediately, No hazard, no overheat. Temperature measured: Winding of transformer: 120.0°C Limit value is:150+24.1-25=149.1°C Ambient: 24.1°C
Transformer T3	O-L	254.4.	6.5 Hours	F1	0.46	When output current increased to 5.8A, EUT steady conditions attained and no hazard, and increased 5% output current, the unit shut down immediately, No hazard, no overheat. Temperature measured: Winding of transformer: 54.0°C Limit value is:150+24.7-25=149.7°C Ambient: 24.7°C
Transformer T2	S-C	254.4.	30mins	F1	0.209	Unit shut down immediately, no damage, no hazard.



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Clause	Requirement + Test					Result - Remark	Verdict
Transformer T3	S-C	254.4.	30mins	F1	0.33	Unit shut down immediately, no damage, no hazard.	
Capacitor C7	S-C	254.4	30mins	F1	0.197	Unit shut down immediately, no damage, no hazard.	
Capacitor C37	S-C	254.4	30mins	F1	0.213	Unit shut down immediately, no damage, no hazard.	
D10 pin 1-3	S-C	254.4	30mins	F1	0.202	Unit shut down immediately, no damage, no hazard.	
D10 pin 1-2	S-C	254.4	30mins	F1	0.218	Unit shut down immediately, no damage, no hazard.	
Capacitor C42	S-C	254.4	30mins	F1	0.166	Unit shut down immediately, no damage, no hazard.	
Photocoupler U3 pin 3-4	S-C	254.4	30mins	F1	0.165	Unit shut down immediately, no damage, no hazard.	
Photocoupler U1 pin 1-2	S-C	254.4	30mins	F1	0.153	Unit shut down immediately, no damage, no hazard.	
Photocoupler U1 pin 3-4	S-C	254.4	30mins	F1	0.162	Unit shut down immediately, no damage, no hazard.	
Q7 pin 1-2	S-C	254.4	1S	F1	0	Fuse F1 opened, unit stop working, no damage, no hazard.	
Q8 pin 1-2	S-C	254.4	1S	F1	0	Fuse F1 opened, unit stop working, no damage, no hazard.	
Capacitor C41	S-C	254.4	1S	F1	0	Fuse F1 opened, unit stop working, no damage, no hazard.	
Rectifier bridge BD1+ and -	S-C	254.4	1S	F1	0	Fuse F1 opened, unit stop working, no damage, no hazard.	
Q4 pin 1-2	S-C	254.4	1S	F1	0	Fuse F1 opened, unit stop working, no damage, no hazard.	
DC fan	Locked Fan	254.4	2.5 Hours	F1	0.932	No overheating, No hazards	
Supplementary information: S-C is abbreviation of shorted- circuit. O-L is abbreviation of over loading							



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Clause	Requirement + Test	Result - Remark					Verdict
C.2	TABLE: transformers						P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
Pri. and Sec. for T2	Reinforced insulation	430V	365V	3000VAC	4.1mm	7.3mm	0.4
Pri. and Sec. for T3	Reinforced insulation	357V	192V	3000VAC	4.0mm	5.0mm	0.4
Loc.	Tested insulation			Test voltage / V	Measured clearance / mm	Measured creepage dist. / mm	Measured distance thr. insul. / mm; number of layers
Pri. and Sec. for T2	Reinforced insulation			3000VAC	9.3mm	9.3mm	1.02mm
Pri. and Sec. for T3	Reinforced insulation			3000VAC	9.04mm	9.04mm	1.15mm
supplementary information:							



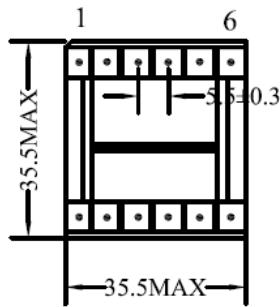
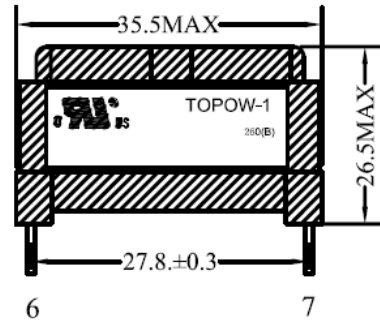
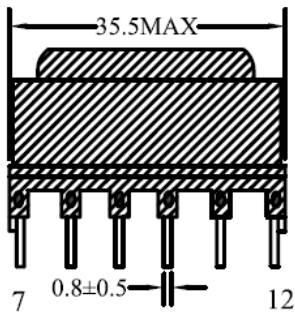
IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
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C.2	TABLE: transformers		P
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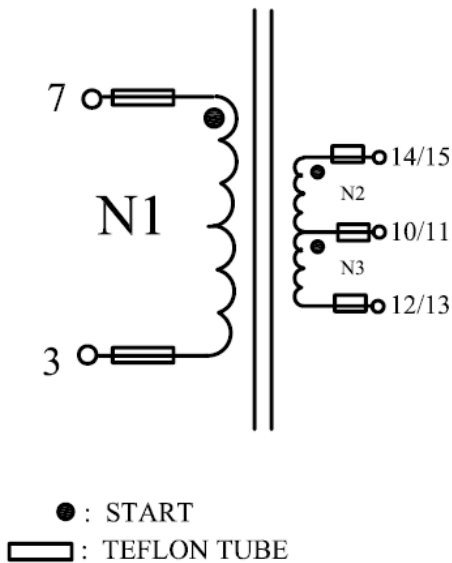
Transformer T2

OUTLINE DIMENSION(UNIT:mm):

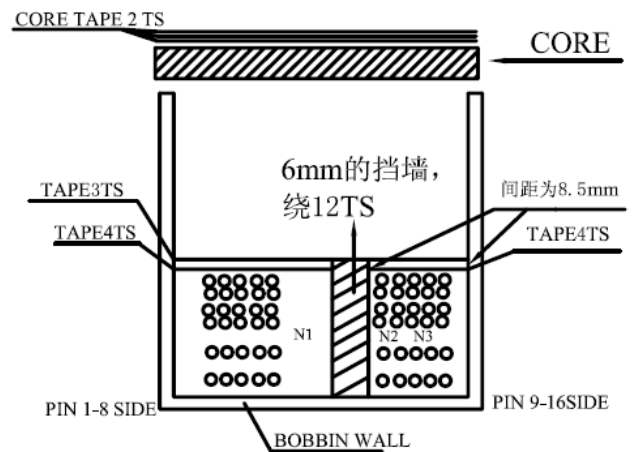


备注：剪除Pin 1 2 4 5 6 8 9 16

SCHEMATIC:



WINDING CONSTRUCTION:



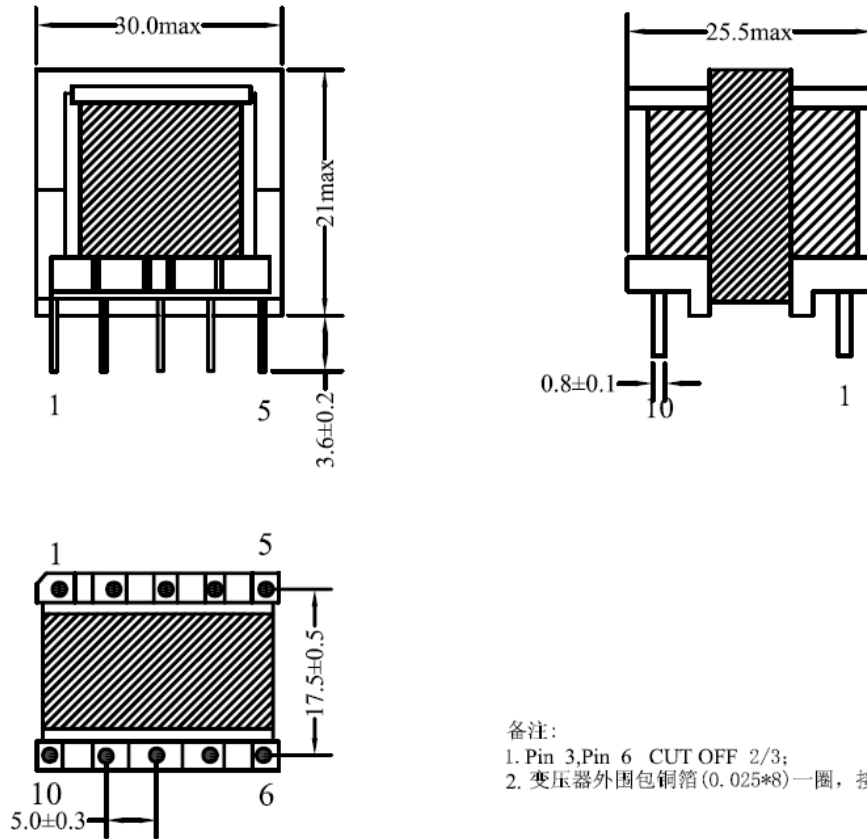


IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
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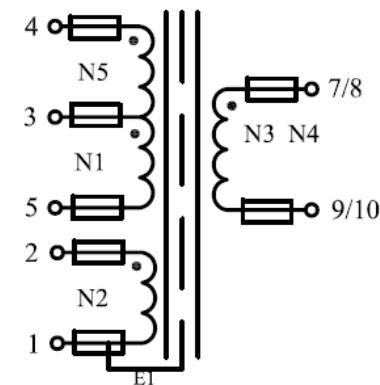
Transformer T3

OUTLINE DIMENSION(UNIT:mm):



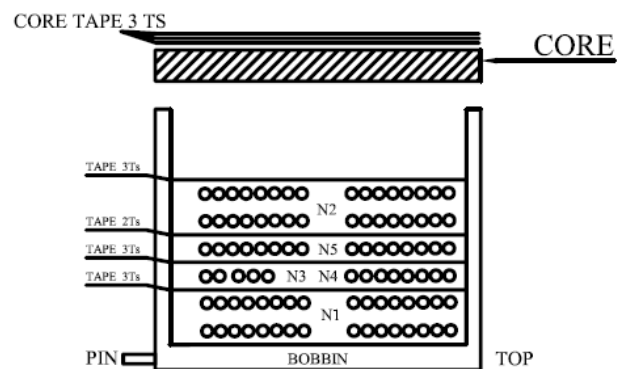
- 备注:
1. Pin 3, Pin 6 CUT OFF 2/3;
 2. 变压器外围包铜箔(0.025*8)一圈, 接Pin2

SCHEMATIC:



● : START
 □ : TEFLON TUBE

WINDING CONSTRUCTION:





IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS			

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it's amendmets are prefixed "Z"		P
Contents (A2:2013)	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
General	Delete all the "country" notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 21.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		P
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note		P
General (A2:2013)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged.		P
1.1.1 (A1:2010)	Replace the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		P



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.Z1	<p>Add the following subclause:</p> <p>1.3.Z1 Exposure to excessive sound pressure</p> <p>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.</p> <p>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.</p>	Not such equipment.	N
(A12:2011)	<p>In EN 60950-1:2006/A12:2011</p> <p>Delete the addition of 1.3.Z1 / EN 60950-1:2006</p> <p>Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010</p>		N
1.5.1 (Added info*)	<p>Add the following NOTE:</p> <p>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 *</p>	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.		N
1.7.2.1 (A12.2011)	<p>In EN 60950-1:2006/A12:2011</p> <p>Delete NOTE Z1 and the addition for Portable Sound System.</p> <p>Add the following clause and annex to the existing standard and amendments.</p>		N
	Zx Protection against excessive sound pressure from personal music players		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.</p> <p>A personal music player is a portable equipment for personal use, that: is designed to allow the user to listen to recorded or broadcast sound or video; and primarily uses headphones or earphones that can be worn in or on or around the ears; and allows the user to walk around while in use.</p> <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: while the personal music player is connected to an external amplifier; or while the headphones or earphones are not used.</p> <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: hearing aid equipment and professional equipment;</p> <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>		N
	<p>analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015.</p> <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>		N




IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx.</p>		N
	All other equipment shall:		N
	a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and		N
	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		N
	<p>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. 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>		N
	d) have a warning as specified in Zx.3; and		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	e) not exceed the following: 1) equipment provided as a package (player with its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1.		N
	For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. 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.		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: the symbol of Figure 1 with a minimum height of 5 mm; and the following wording, or similar: "To prevent possible hearing damage, do not listen at high volume levels for long periods."</p> <div style="text-align: center;">  </div> <p style="text-align: center;">Figure 1 – Warning label (IEC 60417-6044)</p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>		N
	Zx.4 Requirements for listening devices (headphones and earphones)		N
	<p>Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be ≥ 75 mV. 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). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p>		N
	<p>Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. 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.</p>		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.4.3 Wireless listening devices 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 $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA.</p> <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>		N
	<p>Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>		N
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p>		N



IEC/EN 60950-1									
Clause	Requirement + Test	Result - Remark	Verdict						
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)									
Clause	Requirement + Test	Result - Remark	Verdict						
	<p>c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>	Not such equipment	N						
2.7.2	This subclause has been declared 'void'.		N						
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N						
3.2.5.1	<p>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".</p> <p>In Table 3B, replace the first four lines by the following:</p> <table style="margin-left: 20px;"> <tr> <td>Up to and including 6 </td> <td>0,75^{a)} </td> </tr> <tr> <td>Over 6 up to and including 10 </td> <td>(0,75)^{b)} 1,0 </td> </tr> <tr> <td>Over 10 up to and including 16 </td> <td>(1,0)^{c)} 1,5 </td> </tr> </table> <p>In the conditions applicable to Table 3B delete the words "in some countries" in condition^{a)}.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	Up to and including 6	0,75 ^{a)}	Over 6 up to and including 10	(0,75) ^{b)} 1,0	Over 10 up to and including 16	(1,0) ^{c)} 1,5		N
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								
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	<p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:</p> <table style="margin-left: 20px;"> <tr> <td>Over 10 up to and including 16 </td> <td>1,5 to 2,5 </td> <td>1,5 to 4</td> </tr> <tr> <td style="text-align: center;"> </td> <td></td> <td></td> </tr> </table> <p>Delete the fifth line: conductor sizes for 13 to 16 A</p>	Over 10 up to and including 16	1,5 to 2,5	1,5 to 4					N
Over 10 up to and including 16	1,5 to 2,5	1,5 to 4							
4.3.13.6 (A1:2010)	<p>Replace the existing NOTE by the following:</p> <p>NOTE Z1 Attention is drawn to:</p> <p>1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and</p> <p>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).</p>	Added	N						



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	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 μ Sv/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.		—

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—
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ZB ANNEX (normative)			
SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		N
1.2.13.14 (A11:2009)	In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.		N
1.5.7.1 (A11:2009)	In Finland, Norway and Sweden , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N
1.5.9.4	In Finland, Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>In Finland, Norway and Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>		N
1.7.2.1 (A11:2009)	<p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway): "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>		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1 (A2:2013)	In Denmark , CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in Denmark shall be as follows: In Denmark : "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord."		N
1.7.5 1.7.5 (A11:2009)	In Denmark , socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.		N
1.7.5 (A2:2013)	In Denmark , 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 Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV	N
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	No TNV	N
2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV	N
2.6.3.3	In the United Kingdom , the current rating of the circuit shall be taken as 13 A, not 16 A.		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative)			
SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		P
2.10.5.13	In Finland, Norway and Sweden , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N

3.2.1.1	<p>In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A</p> <p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>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:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A</p>		N
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IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>		N
3.2.1.1 (A2:2013)	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Justification the Heavy Current Regulations, 6c</p>		N
3.2.1.1	<p>In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In the United Kingdom, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N
3.2.1.1	<p>In Ireland, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.</p>		N
3.2.4	<p>In Switzerland, for requirements see 3.2.1.1 of this annex.</p>		N
3.2.5.1	<p>In the United Kingdom, a power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>		N
3.3.4	<p>In the United Kingdom, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is:</p> <ul style="list-style-type: none">• 1,25 mm² to 1,5 mm² nominal cross-sectional area.		N
4.3.6	<p>In the United Kingdom, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.</p>		N
4.3.6	<p>In Ireland, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.</p>		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	<p>In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none">• STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON;• STATIONARY PLUGGABLE EQUIPMENT TYPE B;• STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		N
6.1.2.1 (A1:2010)	<p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none">- two layers of thin sheet material, each of which shall pass the electric strength test below, or- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none">- passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.		N



IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none">- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1;- the additional testing shall be performed on all the test specimens as described in EN 60384-14:- the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N
6.1.2.2	<p>In Finland, Norway and Sweden, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.</p>		N
7.2	<p>In Finland, Norway and Sweden, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>		N
7.3 (A11:2009)	<p>In Norway and Sweden, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.</p>		N



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

**** End of Test Report ****



Product Photographs





Product Photographs



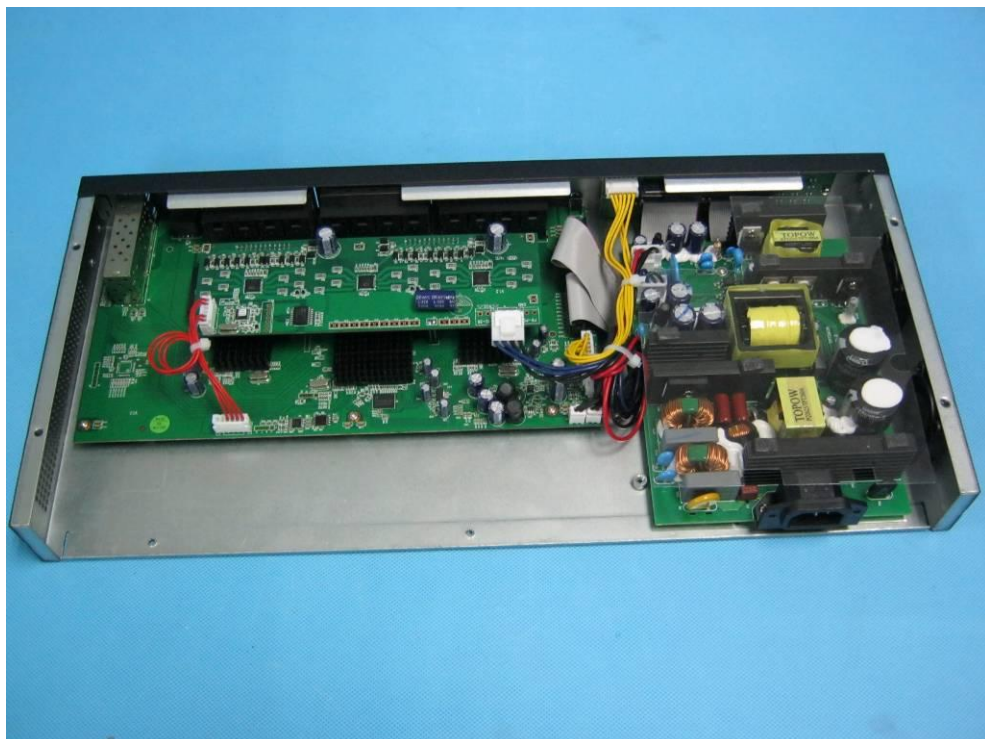


Product Photographs



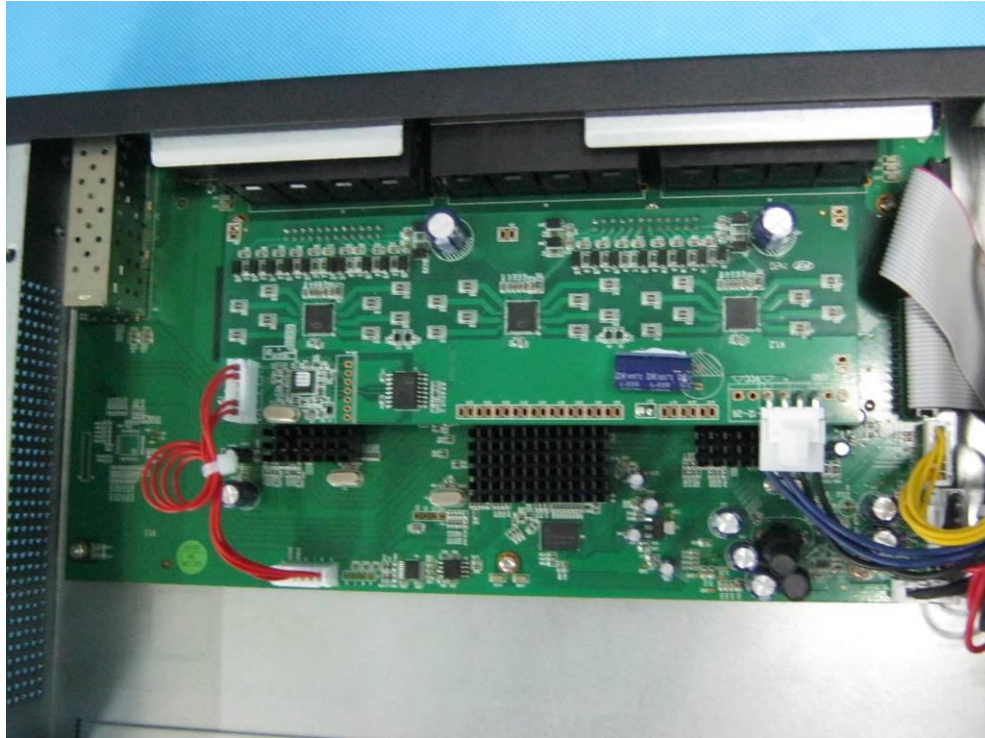


Product Photographs





Product Photographs





Product Photographs

