



Test Report issued under the responsibility of:



TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number.	140501507SHA-001
Date of issue	2014-06-05
Total number of pages	133
CB Testing Laboratory	Intertek Testing Services Shanghai
Address	Building No. 86, 1198 Qinzhou Road (North), 200233 Shanghai, China
Applicant's name	GlobTek, Inc.
Address	186 Veterans Dr. Northvale, NJ 07647 USA
Manufacturer's name	GlobTek, Inc.
Address	186 Veterans Dr. Northvale, NJ 07647 USA
Test specification:	
Standard	IEC 60950-1:2005 (Second Edition) + A1:2009
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No.	IEC60950_1C
Test Report Form(s) Originator	SGS Fimko Ltd
Master TRF	Dated 2012-08
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Test item description	ITE Power Supply
Trade Mark	GlobTek
Manufacturer	GlobTek, Inc.
Model/Type reference	GT-43004P***-T* (Refer to page 6 for details.)
Ratings	Input: 100-240V~, 50-60Hz, 2.0A; Output: Refer to page 7 for details.

Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	Intertek Testing Services Shanghai
Testing location/ address		Building No. 86, 1198 Qinzhou Road (North), 200233 Shanghai, China
<input type="checkbox"/>	Associated CB Laboratory:	
Testing location/ address		
Tested by (name + signature).....:		Jamie Wu
Approved by (name + signature)		Jenny Zheng
<input type="checkbox"/>	Testing procedure: TMP	
Testing location/ address		
Tested by (name + signature).....:		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: WMT	
Testing location/ address		
Tested by (name + signature).....:		
Witnessed by (name + signature).....:		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: SMT	
Testing location/ address		
Tested by (name + signature).....:		
Approved by (name + signature)		
Supervised by (name + signature).....:		
<input type="checkbox"/>	Testing procedure: RMT	
Testing location/ address		
Tested by (name + signature).....:		
Approved by (name + signature)		
Supervised by (name + signature).....:		

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

Page 73-79:	Photograph
Page 80-84:	Circuit diagram & PCB Layout
Page 85-97:	European group differences and national differences
Page 98-99:	National differences for Singapore
Page 100-108:	National differences for Japan
Page 109-114:	National differences for China
Page 115-122:	National differences for Australia and New Zealand
Page 123-127:	National differences for USA
Page 128-132:	National differences for Canada
Page 133:	National differences for Korea

Summary of testing:
Tests performed (name of test and test clause):

1.6.2 Input test
 1.7.11 Marking test
 2.1.1.1 b) Finger test
 2.1.1.1 c) Pin test
 2.1.1.5 Energy hazards test
 2.1.1.7 Stored Discharge on Capacitors Test
 2.2.2 Voltage under normal conditions test
 2.2.3 Voltage under fault conditions test
 2.4 Limited current circuits
 2.6.3 Earthing resistance test
 2.9.2 Humidity test
 2.10.2 Working voltage measurement
 2.10.3/2.10.4 Clearances and creepage distances
 2.10.5 Distance through insulation measurements
 4.2.2 Mechanical strength - steady force test, 10 N
 4.2.4 Mechanical strength - steady force test, 250 N
 4.2.6 Mechanical strength - drop test
 4.2.7 Mechanical strength - stress relief test
 4.5.1 Temperature rise test
 4.5.5 Ball pressure test of thermoplastic parts
 5.1 Touch current & protective conductor current test
 5.2 Electric strength test
 5.3 Abnormal test

From the result of our examination and tests in the submitted samples, conclude they comply with the requirements of the standard IEC 60950-1:2005 (Second Edition) + A1: 2009 and EN 60950-1:2006 + A11:2009 + A1:2010+A12:2011.

Testing location:

Intertek Testing Services Shanghai
 Building No. 86, 1198 Qinzhou Road (North),
 200233 Shanghai, China

Summary of compliance with National Differences

List of countries addressed:

The test report covers group- and national differences for the CENELEC countries.

The national differences for Singapore and Japan have been checked according to IEC 60950-1 1st ed.

The national differences for China and Australia/New Zealand have been checked according to IEC 60950-1 2nd ed.

The national differences for Korea, Canada and USA have been checked according to IEC 60950-1 2nd ed. + am.1.

☒ The product fulfils the requirements of IEC 60950-1:2005+A1:2009 and EN 60950-1:2006+A11:2009 +A1:2010+A12:2011.

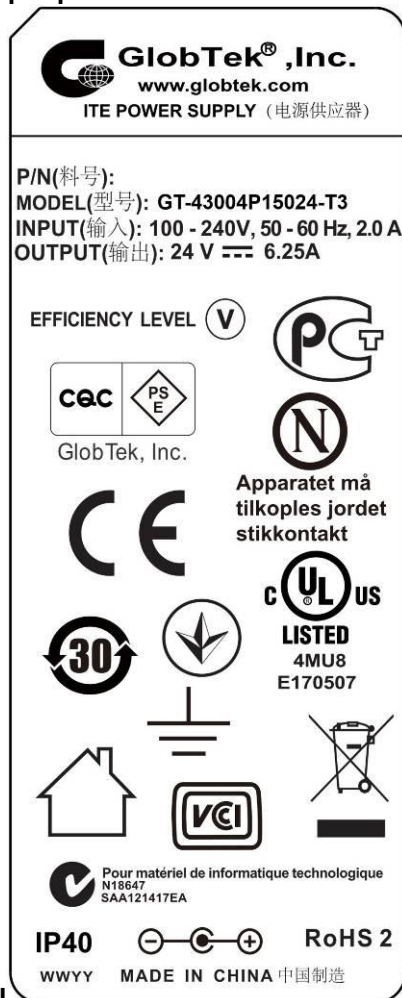
Copy of marking plate(representative):

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

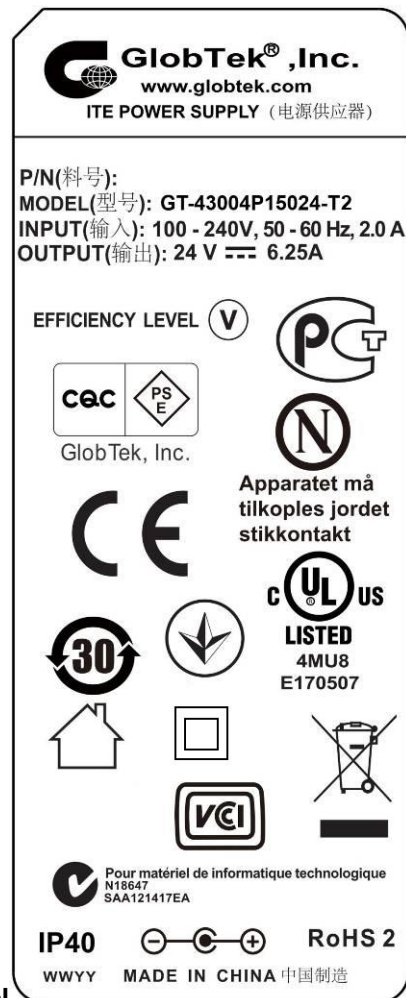
(Additional requirements for markings. See 1.7 NOTE)

Note:

The marking plates of the other models listed in this report are identical with below except model name and output parameter.



Class I model



Class II model

Test item particulars:	
Equipment mobility	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input checked="" type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition.....:	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values	+10%, -10%
Tested for IT power systems	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
IT testing, phase-phase voltage (V)	230V
Class of equipment	<input checked="" type="checkbox"/> Class I or <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A)	16A or 20A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IP20
Altitude during operation (m)	Max. 4000m
Altitude of test laboratory (m)	Max. 50m
Mass of equipment (kg)	Approx. 0.21kg
Possible test case verdicts:	
- test case does not apply to the test object	N/A (or N)
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement	F (Fail)
Testing	
Date of receipt of test item	2014-05-26
Date(s) of performance of tests.....	2014-05-26~2014-06-05

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

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

Determination of the test result includes consideration of measurement uncertainty from the test equipment and methods.

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Manufacturer's Declaration per sub-clause 6.2.5 of IEC 60950-1:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided: ☒ Yes ☐ Not applicable

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

Name and address of factory (ies) : Factory 1
GlobTek, Inc.
186 Veterans Dr. Northvale, NJ 07647 USA
Factory 2
GlobTek (Suzhou) Co., Ltd
Building 4, No. 76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou, JiangSu 215121, China

General product information:

The equipment is a switching power adaptor for ITE and indoor use only. The appliance coupler is considered as the disconnect device, and the equipment is considered as movable (transportable) equipment.

The equipment was submitted and evaluated for maximum manufacturer's recommended ambient of 40 °C.

The equipment intended to be used in tropical conditions.

The enclosures fixed together by four screws. All the types are designed for continuous operation.

Model Similarity:

GT-43004P***-T*

The 1st "*" part denotes the rated output wattage designation, which can be "001" to "150", with interval of 1.

The 2nd "*" part denotes the standard rated output voltage designation, which can be "12", "16", "19", "24".

The 3rd "*" part is optional, which can be "-0.1" to "-4.9" with interval of 0.1 to denote voltage deviation or blank to indicate no voltage different. The result by subtracting the deviation value from the standard rated output voltage denotes the rated output voltage, with a range of 12-24volts.

The 4th "*" part can be '2' to denote Class II model with standard sheet C8 appliance inlet, or '3' and '3A' to denote two types of Class I models with standard sheet C14 or standard sheet C6 appliance inlets.

All tests are performed on models GT-43004P12012-T3, GT-43004P12016-1.0-T3, GT-43004P12019-T3 and GT-43004P15024-T3.

Model list

Model	Rated output voltage range	Max. rated output current	Max. rated output power
GT-43004P*12-T*	12V	10A	120W
GT-43004P*16*-T*	12.1-16V	10A	120W
GT-43004P*19*-T*	16.1-19V	7.45A	120W
GT-43004P*24*-T*	19.1-24V	7.85A	150W

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		
1.5	Components		
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers	See Annex C – Transformer	P
1.5.5	Interconnecting cables	The output is evaluated at the relevant parts of this report	P
1.5.6	Capacitors bridging insulation	Comply with IEC 60384-14	P
1.5.7	Resistors bridging insulation	See below.	P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Only bridging functional is considered.	P
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems		P
1.5.9	Surge suppressors	(see appended table 1.5.1)	P
1.5.9.1	General	Approved Varistor comply with Annex Q used in primary circuit (see appended table 1.5.1)	P
1.5.9.2	Protection of VDRs	A fuse is connected in series with VDR	P
1.5.9.3	Bridging of functional insulation by a VDR	Approved Varistor locate between mains	P
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A
1.6	Power interface		
1.6.1	AC power distribution systems	TN, TT or IT (only for Norway)	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	This equipment is not handheld equipment.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6.4	Neutral conductor	Basic insulation for rated voltage between earthed parts and primary phases.	P
1.7	Marking and instructions		
1.7.1	Power rating and identification markings		P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:		N/A
	Rated voltage(s) or voltage range(s) (V) :	100-240Vac	P
	Symbol for nature of supply, for d.c. only..... :	The equipment is for a.c. supply.	N/A
	Rated frequency or rated frequency range (Hz) ... :	50-60Hz	P
	Rated current (mA or A) :	2.0A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark :	(see copy of the marking plate on page 5)	P
	Model identification or type reference :	(see copy of the marking plate on page 5)	P
	Symbol for Class II equipment only :	Symbol IEC 60417-5172 (DB: 2003-02) is used for Class II model.	P
	Other markings and symbols :	Additional symbols or marking do not give rise to misunderstanding.	P
1.7.2	Safety instructions and marking	The user's manual contains information for operation, installation, servicing, transport, storage and technical data.	P
1.7.2.1	General		P
1.7.2.2	Disconnect devices	Approved appliance coupler is provided.	P
1.7.2.3	Overcurrent protective device		N/A
1.7.2.4	IT power distribution systems		P
1.7.2.5	Operator access with a tool	No need.	N/A
1.2.7.6	Ozone		N/A
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	N/A
1.7.4	Supply voltage adjustment :	No voltage/frequency setting.	N/A
	Methods and means of adjustment; reference to installation instructions :		N/A
1.7.5	Power outlets on the equipment :	No outlet provided.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	FS1, "T4AL/250V" is marked adjacent to it.	P
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals		N/A
1.7.7.2	Terminals for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators		N/A
1.7.8.1	Identification, location and marking	No controls and switches within the EUT	N/A
1.7.8.2	Colours		N/A
1.7.8.3	Symbols according to IEC 60417.....		N/A
1.7.8.4	Markings using figures	No figures used as marking	N/A
1.7.9	Isolation of multiple power sources	Only one power supply	N/A
1.7.10	Thermostats and other regulating devices	No such device within the EUT.	N/A
1.7.11	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth for 15 s and then again for 15 s with the cloth soaked with HEXANE. After this test there was no damage to the label. The marking on the label did not fade. There was no curling or lifting of the label edge.	P
1.7.12	Removable parts	Marking is not placed on removable parts.	P
1.7.13	Replaceable batteries	No battery used.	N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations	Not for installation in restricted access location.	N/A

2	PROTECTION FROM HAZARDS		
2.1	Protection from electric shock and energy hazards		
2.1.1	Protection in operator access areas	No hazards inside	P
2.1.1.1	Access to energized parts		P
	Test by inspection	Operator can not contact with any parts with only basic insulation to ELV or hazardous voltage.	P
	Test with test finger (Figure 2A)	No access with test finger to any parts with only basic insulation to ELV or hazardous voltage.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test with test pin (Figure 2B)	No access with test pin to any parts with only basic insulation to ELV or hazardous voltage.	P
	Test with test probe (Figure 2C)	No TNV present.	N/A
2.1.1.2	Battery compartments	No battery compartments used.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N/A
	Working voltage (V_{peak} or V_{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage circuit wiring.	N/A
2.1.1.5	Energy hazards	See table 2.1.1.5.	P
2.1.1.6	Manual controls	No conductive handles, knobs.	N/A
2.1.1.7	Discharge of capacitors in equipment		P
	Measured voltage (V); time-constant (s).....	$V_{37\%V_r} = 126.4V$; $\tau = 0.94s$. $CX1 = 0.47\mu F$, $RS1 = RS2 = 1.8M\Omega$.	—
2.1.1.8	Energy hazards – d.c. mains supply	Not direct connected to the d.c. mains.	N/A
	a) Capacitor connected to the d.c. mains supply ..		N/A
	b) Internal battery connected to the d.c. mains supply		N/A
2.1.1.9	Audio amplifiers	No such audio amplifiers circuit provided.	N/A
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations	The unit is not intended to be used in restricted locations.	N/A

2.2	SELV circuits		
2.2.1	General requirements	SELV circuit does not exceed 42.4 V peak or 60 V dc under normal operation or single fault condition.	P
2.2.2	Voltages under normal conditions (V)	Between any SELV circuits 42.4V peak or 60VDC are not exceeded. (see appended table)	P
2.2.3	Voltages under fault conditions (V)	Limits of 71V peak and 120V DC were not exceed and SELV limits not for longer than 0.2 seconds. (see appended table)	P
2.2.4	Connection of SELV circuits to other circuits	SELV circuits are only connected to other SELV	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
		circuits.	
2.3	TNV circuits		
2.3.1	Limits	No TNV circuits.	N/A
	Type of TNV circuits..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions :		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed :		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	Limited current circuits		
2.4.1	General requirements		P
2.4.2	Limit values	0.7 mA / 35mA	P
	Frequency (Hz) :	60Hz / 50 kHz	—
	Measured current (mA)..... :	0.206mA / 2.52mA	—
	Measured voltage (V)..... :	0.412Vpeak / 5.04Vpeak	—
	Measured circuit capacitance (nF or μ F) :	CY1: 1000pF, CY2: 3300pF.	—
2.4.3	Connection of limited current circuits to other circuits	Limited current circuits are only connected to other SELV circuits.	P
2.5	Limited power sources		
	a) Inherently limited output	Not LPS.	N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA) :		—
	Current rating of overcurrent protective device (A) ..		—
	Use of integrated circuit (IC) current limiters		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6	Provisions for earthing and bonding		
2.6.1	Protective earthing	Appliance inlet used	P
2.6.2	Functional earthing		P
2.6.3	Protective earthing and protective bonding conductors	Protective earthing conductor only in approved appliance inlet.	P
2.6.3.1	General		P
2.6.3.2	Size of protective earthing conductors	Provided by separate approved detachable power supply cord.	N/A
	Rated current (A), cross-sectional area (mm ²), AWG :		—
2.6.3.3	Size of protective bonding conductors		P
	Rated current (A), cross-sectional area (mm ²), AWG :	Complying with the test in 2.6.3.4	—
	Protective current rating (A), cross-sectional area (mm ²), AWG :	Resistance from the earth pin of appliance inlet to earthed GND was measured (see appended table 2.6.3.4)	—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)..... :	Earth pin of appliance inlet to earthed GND resistance measured: 22mΩ, test current: 40A, duration: 2mins.	P
2.6.3.5	Colour of insulation :	After appliance inlet, the insulation of protective bonding conductor is green-and-yellow.	N/A
2.6.4	Terminals		P
2.6.4.1	General	The earthing terminal in the appliance inlet is considered as protective earthing terminal.	P
2.6.4.2	Protective earthing and bonding terminals		P
	Rated current (A), type, nominal thread diameter (mm) :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switches or overcurrent protective devices in protective earthing / bonding conductors.	P
2.6.5.3	Disconnection of protective earth	Approved appliance coupler is provided.	P
2.6.5.4	Parts that can be removed by an operator	No user servicing area.	P
2.6.5.5	Parts removed during servicing		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.6	Corrosion resistance	No screws used for portective bonding.	P
2.6.5.7	Screws for protective bonding	No TNV circuits	N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

2.7	Overcurrent and earth fault protection in primary circuits		
2.7.1	Basic requirements	Integral part of equipment	P
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection	Building installation is considered as the short-circuit backup protection.	P
2.7.4	Number and location of protective devices :	One current fuse (FS1) is located in the Line pole of primary circuit.	P
2.7.5	Protection by several devices	Only one protection device	N/A
2.7.6	Warning to service personnel :	The EUT is not such kinds of design.	N/A

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

2.9	Electrical insulation		
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.2	Humidity conditioning	Humidity treatment performed for 120 h. (Considered the tropical conditions)	P
	Relative humidity (%), temperature (°C) :	93%, 40°C	—
2.9.3	Grade of insulation	The adequate level of safety insulation is provided and maintained to comply with the requirements of this standard.	P
2.9.4	Separation from hazardous voltages		P
	Method(s) used :	Method 1.	—

2.10	Clearances, creepage distances and distances through insulation		
2.10.1	General		P
2.10.1.1	Frequency :	more than 30kHz	P
2.10.1.2	Pollution degrees :	Pollution degree 2	P
2.10.1.3	Reduced values for functional insulation	Refer sub-clause 5.3.4	P
2.10.1.4	Intervening unconnected conductive parts		P
2.10.1.5	Insulation with varying dimensions	No such transformer.	N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		P
2.10.2.1	General		P
2.10.2.2	RMS working voltage	(see appended table 2.10.2)	P
2.10.2.3	Peak working voltage	(see appended table 2.10.2)	P
2.10.3	Clearances		P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply :	100-240Vrms. Overvoltage Category II	P
	b) Earthed d.c. mains supplies :		N/A
	c) Unearthed d.c. mains supplies :		N/A
	d) Battery operation :		N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	Comply with clause 5.3.4 a)	P
2.10.3.5	Clearances in circuits having starting pulses	No such device within the EUT.	N/A
2.10.3.6	Transients from a.c. mains supply :	2500 V _{peak}	P
2.10.3.7	Transients from d.c. mains supply :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.8	Transients from telecommunication networks and cable distribution systems		N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network :		N/A
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.....	Material group IIIb is used	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation		P
2.10.5.1	General		P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation	No insulation compound	N/A
2.10.5.4	Semiconductor devices	Approved optocoupler.	P
2.10.5.5.	Cemented joints		N/A
2.10.5.6	Thin sheet material – General	The thin sheet materials of polyester tape used in transformers.	P
2.10.5.7	Separable thin sheet material		P
	Number of layers (pcs)	(see appended table 2.10.5)	—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure	See sub-clause 2.10.5.10	N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		P
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components	(see Annex U)	P
2.10.5.12	Wire in wound components	Approved triple insulation wire for T1 secondary winding	P
	Working voltage	(see appended table 2.10.2)	P
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation	(see Annex U)	N/A
	c) Compliance with Annex U	Approved triple insulated winding wire used.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Two wires in contact inside wound component; angle between 45° and 90°	Additional insulation tape is used.	P
2.10.5.13	Wire with solvent-based enamel in wound components	No such device within the EUT	N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage		N/A
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		N/A
2.10.6	Construction of printed boards		P
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.2	Coated printed boards	No coated printed board is used.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	Not multi-layer printed board.	N/A
2.10.6.4	Insulation between conductors on different layers of a printed board	No such printed board use.	N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components	No coated printed boards and coated components.	N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints	Approved optocouplers (U1) (see also appended table 1.5.1)	P
2.10.12	Enclosed and sealed parts		N/A
3	WIRING, CONNECTIONS AND SUPPLY		
3.1	General		
3.1.1	Current rating and overcurrent protection	(see appended table 1.5.1)	P
3.1.2	Protection against mechanical damage	Smooth wireways.	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.3	Securing of internal wiring	All internal wirings are suitable fixed.	P
3.1.4	Insulation of conductors	Only SELV wiring.	N/A
3.1.5	Beads and ceramic insulators	Not used.	N/A
3.1.6	Screws for electrical contact pressure	No such screws.	N/A
3.1.7	Insulating materials in electrical connections	No such construction.	N/A
3.1.8	Self-tapping and spaced thread screws	No spaced threaded or self-tapping screws are used.	N/A
3.1.9	Termination of conductors	All conductors are reliably secured by use of solder-pins or glue or other mechanical fixing means.	P
	10 N pull test		P
3.1.10	Sleeving on wiring	No sleeving is used as the supplementary insulation on internal wiring.	N/A

3.2	Connection to a mains supply		
3.2.1	Means of connection	Approved appliance inlet is provided.	P
3.2.1.1	Connection to an a.c. mains supply	An appliance inlet for connection of a detachable power supply cord.	P
3.2.1.2	Connection to a d.c. mains supply	No connection to d.c. mains supply.	N/A
3.2.2	Multiple supply connections	Only one supply connection.	N/A
3.2.3	Permanently connected equipment	The unit is not permanent connected equipment.	N/A
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets	Approved appliance inlet is provided. (see appended table 1.5.1)	P
3.2.5	Power supply cords	No power supply cord.	N/A
3.2.5.1	AC power supply cords		N/A
	Type		—
	Rated current (A), cross-sectional area (mm ²), AWG		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief	No such construction.	N/A
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—

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

3.3	Wiring terminals for connection of external conductors		
3.3.1	Wiring terminals	No wiring terminal	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²) :		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm) :		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

3.4	Disconnection from the mains supply		
3.4.1	General requirement		P
3.4.2	Disconnect devices	The appliance coupler is considered as the disconnect devices.	P
3.4.3	Permanently connected equipment	The unit is not permanently connected equipment.	N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment	The disconnect device disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment	Single phrase	N/A
3.4.8	Switches as disconnect devices	No switch.	N/A
3.4.9	Plugs as disconnect devices	No power supply cord.	N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A

3.5	Interconnection of equipment		
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Clause	Requirement + Test	Result - Remark	Verdict
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits :	Interconnection circuits of SELV through the output connectors. No ELV interconnection circuits.	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection circuits.	N/A
3.5.4	Data ports for additional equipment		N/A
4	PHYSICAL REQUIREMENTS		
4.1	Stability		
	Angle of 10°	The mass of EUT is less than 7 kg.	N/A
	Test force (N) :	Not floor standing unit.	N/A
4.2	Mechanical strength		
4.2.1	General		P
	Rack-mounted equipment.	The EUT is not such type equipment.	N/A
4.2.2	Steady force test, 10 N	10N applied to components. No hazard.	P
4.2.3	Steady force test, 30 N	No such part needs test.	N/A
4.2.4	Steady force test, 250 N	250N applied to all sources of plastic enclosure. No hazard.	P
4.2.5	Impact test	The EUT is still complying with relevant requirements of this standard.	P
	Fall test	The EUT is still complying with relevant requirements of this standard.	P
	Swing test		N/A
4.2.6	Drop test; height (mm) :	1000 mm height.	P
4.2.7	Stress relief test	After 7h at 75 °C and cooling down to room temperature, no shrinkage, distortion or loosening of enclosure parts was noticeable on the equipment.	P
4.2.8	Cathode ray tubes	No such devices within the EUT.	N/A
	Picture tube separately certified :		N/A
4.2.9	High pressure lamps	No such devices within the EUT.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.10	Wall or ceiling mounted equipment; force (N) :	No such construction.	N/A
4.2.11	Rotating solid media	No such construction.	N/A
	Test to cover on the door.....:		N/A

4.3	Design and construction		
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	P
4.3.2	Handles and manual controls; force (N) :	No such construction.	N/A
4.3.3	Adjustable controls	No hazardous adjustments accessible to the operator.	N/A
4.3.4	Securing of parts	The enclosures are fixed together by ultrasonic welding	P
4.3.5	Connection by plugs and sockets	No such devices within the EUT	N/A
4.3.6	Direct plug-in equipment		N/A
	Torque :		—
	Compliance with the relevant mains plug standard :		N/A
4.3.7	Heating elements in earthed equipment	No heating elements.	N/A
4.3.8	Batteries	No lithium battery.	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	Insulation is not exposed to oil, grease etc.	N/A
4.3.10	Dust, powders, liquids and gases	Equipment in intended use not considered to be exposed to dust, powders, liquids or gases.	N/A
4.3.11	Containers for liquids or gases	The equipment does not contain liquid.	N/A
4.3.12	Flammable liquids :	No flammable liquids in this unit.	N/A
	Quantity of liquid (l) :		N/A
	Flash point (°C) :		N/A
4.3.13	Radiation		N/A
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation	The EUT does not generate ionizing radiation.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	The EUT does not produce UV radiation.	N/A
	Part, property, retention after test, flammability classification		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation		N/A
4.3.13.5	Laser (including LEDs)	LEDs	P
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)	The LEDs are considered to comply with the requirements of Class 1 LED product.	P
4.3.13.6	Other types		N/A
4.4	Protection against hazardous moving parts		
4.4.1	General	No hazardous moving parts within the EUT.	N/A
4.4.2	Protection in operator access areas		N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a).....		N/A
	Is considered to cause pain, not injury. b)		N/A
	Considered to cause injury. c)		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning		N/A
4.5	Thermal requirements		
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per Annex L	L7	—

IEC 60950-1			
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 :	(see appended table 4.5.5)	P

4.6	Openings in enclosures		
4.6.1	Top and side openings		P
	Dimensions (mm) :	No top and side opening.	—
4.6.2	Bottoms of fire enclosures		P
	Construction of the bottom, dimensions (mm) .. :	No bottom opening.	—
4.6.3	Doors or covers in fire enclosures	No door or cover is provided.	N/A
4.6.4	Openings in transportable equipment	No opening at all.	N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) :		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes	No barrier or screen secured with adhesive.	N/A
	Conditioning temperature (°C), time (weeks)..... :		—

4.7	Resistance to fire		
4.7.1	Reducing the risk of ignition and spread of flame	Method 1 used.	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	Fire enclosure is provided.	P
4.7.2.1	Parts requiring a fire enclosure		P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P
4.7.3.1	General		P
4.7.3.2	Materials for fire enclosures	Min. V-1 material is used.	P
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Bobbin: V-0; PCB: V-1 min.	P
4.7.3.5	Materials for air filter assemblies	No air filters assemblies.	N/A
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	N/A

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1	Touch current and protective conductor current		
5.1.1	General	(see appended Table 5.1)	P
5.1.2	Configuration of equipment under test (EUT)	Equipment designed for connection to only one power source.	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	Single connection to a.c. mains supply.	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	Single connection to a.c. mains supply.	N/A
5.1.3	Test circuit	Test circuit as in figure 5A is used.	P
5.1.4	Application of measuring instrument	Measuring instrument as in annex D.1 is used.	P
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Supply voltage (V)	See appended table 5.1	—
	Measured touch current (mA)	See appended table 5.1	—
	Max. allowed touch current (mA)	See appended table 5.1	—
	Measured protective conductor current (mA)	See appended table 5.1	—
	Max. allowed protective conductor current (mA) ..	See appended table 5.1	—
5.1.7	Equipment with touch current exceeding 3,5 mA	The EUT is not such equipment.	N/A
5.1.7.1	General		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	Not connected to a telecommunication network or a cable distribution system.	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.2	Electric strength		
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure	(see appended table 5.2)	P
5.3	Abnormal operating and fault conditions		
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	No motor.	N/A
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation..... :	Method a) & c). Short Circuit tests, result see appended table 5.3.	P
5.3.5	Electromechanical components	No electromechanical components.	N/A
5.3.6	Audio amplifiers in ITE :	No such component.	N/A
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment	There are no thermostats and similar components within the EUT.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	No fire propagated beyond the equipment, no molten metal was emitted and the enclosures no deformed.	P
5.3.9.1	During the tests		P
5.3.9.2	After the tests	After test, the EUT still complies with relevant requirements of this standard.	P
6	CONNECTION TO TELECOMMUNICATION NETWORKS		
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements	No TNV circuits.	N/A
	Supply voltage (V) :		—
	Current in the test circuit (mA) :		—
6.1.2.2	Exclusions :		N/A
6.2	Protection of equipment users from overvoltages on telecommunication networks		
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A

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

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		
7.1	General	The equipment doesn't intend to be connected to cable distribution system.	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples		—
	Wall thickness (mm)		—
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—

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Clause	Requirement + Test	Result - Remark	Verdict
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material		—
	Wall thickness (mm)		—
A.2.2	Conditioning of samples; temperature (°C)		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N/A
B.1	General requirements		N/A
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days)		—
	Electric strength test: test voltage (V)		—

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Clause	Requirement + Test	Result - Remark	Verdict
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) :		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V):		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) :		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		P
	Position :	Soldered on PCB	—
	Manufacturer :	See the table 1.5.1.	—
	Type :	See the table 1.5.1.	—
	Rated values :	Class B.	—
	Method of protection :	Protective circuits.	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	(see appended table 5.3)	P
	Protection from displacement of windings :	The end turns are reliably fixed by tape, the whole transformer varnished (See appended table 1.5.1)	P

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

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P
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Clause	Requirement + Test	Result - Remark	Verdict
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances		N/A
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N/A
	Metal(s) used		—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)		N/A
K.3	Thermostat endurance test; operating voltage (V)		N/A
K.4	Temperature limiter endurance; operating voltage (V)		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—
M.3.1.4	Single fault current (mA)		—
M.3.2	Tripping device and monitoring voltage		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)		N/A
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	ANNEX P, NORMATIVE REFERENCES		—
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		P
	a) Preferred climatic categories	See table 1.5.1	P
	b) Maximum continuous voltage	See table 1.5.1	P
	c) Pulse current	See table 1.5.1	P

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Clause	Requirement + Test	Result - Remark	Verdict
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		P
		Approved triple insulated winding wire used.	—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction		P
V.2	TN power distribution systems		P
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		P
X.1	Determination of maximum input current		P
X.2	Overload test procedure		P
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Y.2	Mounting of test samples		N/A
Y.3	Carbon-arc light-exposure apparatus		N/A
Y.4	Xenon-arc light exposure apparatus		N/A
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		P
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		N/A
CC.1	General	No such device within the EUT.	N/A
CC.2	Test program 1.....		N/A
CC.3	Test program 2.....		N/A
DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		N/A
DD.1	General	The EUT is not such equipment.	N/A
DD.2	Mechanical strength test, variable N.....		N/A
DD.3	Mechanical strength test, 250N, including end stops.....		N/A
DD.4	Compliance.....		N/A
EE	ANNEX EE, Household and home/office document/media shredders		N/A
EE.1	General	The EUT is not such equipment.	N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols.....		N/A
	Information of user instructions, maintenance and/or servicing instructions.....		N/A
EE.3	Inadvertent reactivation test.....		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols.....		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A)		N/A
	Test with wedge probe (Figure EE1 and EE2)		N/A

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ Trademark	Type No./ model No./	Technical data	Standard No./, Edition	Mark(s) & Certificates of conformity ¹
AC inlet for Class I model	Zhejiang LECI Electronics Co., Ltd.	DB-6	2.5A, 250Vac Standard sheet: C6	IEC/EN 60320-1 UL 498	VDE 40032465 UL E302229
Alt.	Rich Bay Co., Ltd.	R-30790	2.5A, 250Vac Standard sheet: C6	IEC/EN 60320-1 UL 498	VDE 40030381 UL E184638
Alt.	Sun Fair Electric Wire & Cable (HK)Co. Ltd.	S-02	2.5A, 250Vac Standard sheet: C6	IEC/EN 60320-1 UL 498	VDE 40034448 UL E226643
Alt.	TECX-UNIONS Technology Corporation	TU-333 series	2.5A, 250Vac Standard sheet: C6	IEC/EN 60320-1 UL 498	VDE 40005430 UL E100004
Alt.	Rong Feng Industrial Co., Ltd.	RF-190	2.5A, 250Vac Standard sheet: C6	IEC/EN 60320-1 UL 498	VDE 40030379 UL E102641
Alt.	Inalways Corporation	0724	2.5A, 250Vac Standard sheet: C6	IEC/EN 60320-1 UL 498	ENEC 2010080 UL E94191
Alt.	Kunshan Dlk Electronics Technology Co., Ltd	CDJ-2	2.5A, 250Vac Standard sheet: C6	IEC/EN 60320-1 UL 498	VDE 40022871 UL E317189
Alt.	Zhejiang LECI Electronics Co., Ltd.	DB-14	10A, 250Vac Standard sheet: C14	IEC/EN 60320-1 UL 498	VDE 40032137 UL E302229
Alt.	Rich Bay Co., Ltd.	R-301SN	10A, 250Vac Standard sheet: C14	IEC/EN 60320-1 UL 498	VDE 40030228 UL E184638
Alt.	Sun Fair Electric Wire & Cable (HK)Co. Ltd.	S-03	10A, 250Vac Standard sheet: C14	IEC/EN 60320-1 UL 498	VDE 40034447 UL E226643
Alt.	TECX-UNIONS Technology Corporation	TU-301-S TU-301-SP	10A, 250Vac Standard sheet: C14	IEC/EN 60320-1 UL 498	VDE 40025582 UL E220004
Alt.	Rong Feng Industrial Co., Ltd.	SS-120	10A, 250Vac Standard sheet: C14	IEC/EN 60320-1 UL 498	VDE 40028101 UL E102641
Alt.	Inalways Corporation	0711 series	10A, 250Vac Standard sheet: C14	IEC/EN 60320-1 UL 498	ENEC 2010084 UL E94191

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Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ Trademark	Type No./ model No./	Technical data	Standard No./, Edition	Mark(s) & Certificates of conformity ¹
Appliance inlet for Class II model	Zhejiang LECI Electronics Co., Ltd.	DB-8	2.5A, 250Vac Standard sheet: C8	IEC/EN 60320-1 UL 498	VDE 40032028 UL E302229
Alt.	Rich Bay Co., Ltd.	R-201SN90	2.5A, 250Vac Standard sheet: C8	IEC/EN 60320-1 UL 498	VDE 40030384 UL E184638
Alt.	Sun Fair Electric Wire & Cable (HK)Co. Ltd.	S-01	2.5A, 250Vac Standard sheet: C8	IEC/EN 60320-1 UL 498	VDE 40034449 UL E226643
Alt.	TECX-UNIONS Technology Corporation	SO-222 series	2.5A, 250Vac Standard sheet: C8	IEC/EN 60320-1 UL 498	VDE 40020337 UL E220004
Alt.	Rong Feng Industrial Co., Ltd.	RF-180	2.5A, 250Vac Standard sheet: C8	IEC/EN 60320-1 UL 498	VDE 40030168 UL E102641
Alt.	Inalways Corporation	0721 series	2.5A, 250Vac Standard sheet: C8	IEC/EN 60320-1 UL 498	ENEC 2010087 UL E94191
PCB	TECHNI TECHNOLOGY LTD	T2A T2B T4	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	Tested with appliance UL E154355
Alt.	DONGGUAN HE TONG ELECTRONICS CO LTD	CEM1 2V0 FR4	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	Tested with appliance UL E243157
Alt.	CHEERFUL ELECTRONIC	03 03A	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	Tested with appliance UL E199724
Alt.	DONGGUAN DAYSUN ELECTRONIC CO LTD	DS2	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	Tested with appliance UL E251754
Alt.	SUZHOU CITY YILIHUA ELECTRONICS CO LTD	YLH-1	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	Tested with appliance UL E251781
Alt.	SHANGHAI AREX PRECISION ELECTRONIC CO LTD	02V0 04V0	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	Tested with appliance UL E186016

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ Trademark	Type No./ model No./	Technical data	Standard No./, Edition	Mark(s) & Certificates of conformity ¹
Alt.	BRITE PLUS ELECTRONICS (SUZHOU) CO LTD	DKV0-3A DGV0-3A	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	Tested with appliance UL E177671
Alt.	KUOTIANG ENT LTD	C-2 C-2A	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	Tested with appliance UL E227299
Alt.	SHENZHEN TONGCHUANG XIN ELECTRONICS CO LTD	TCX	Min 1.6 mm thickness, min.V-0, 130°C	IEC/EN 60950-1 UL 796	Tested with appliance UL E250336
Alt.	Interchangeable	Interchangeable	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950-1 UL 796	Tested with appliance UL Approved.
Insulating tape wrapping around the heatsink	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 1350T-1	Min.130°C	IEC/EN 60950-1 UL 510	Tested with appliance UL E17385
Alt.	BONDTEC PACIFIC CO LTD	370S	Min.130°C	IEC/EN 60950-1 UL 510	Tested with appliance UL E175868
Alt.	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ CT	Min.130°C	IEC/EN 60950-1 UL 510	Tested with appliance UL E165111
Alt.	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	Min.130°C	IEC/EN 60950-1 UL 510	Tested with appliance UL E246950
Alt.	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	Min.130°C	IEC/EN 60950-1 UL 510	Tested with appliance UL E246820
Fuse (FS1)	Conquer Electronics Co., Ltd.	MST	T4A, 250V, Rated breaking capacity 100A	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40017118 UL E82636
Alt.	Ever Island Electric Co., Ltd. and Walter Electric	2010	T4A, 250V, Rated breaking capacity 130A	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40018781 UL E220181

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Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ Trademark	Type No./ model No./	Technical data	Standard No./, Edition	Mark(s) & Certificates of conformity ¹
Alt.	Bel Fuse Ltd.	RST	T4A, 250V, Rated breaking capacity 100A	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40011144 UL E20624
Alt.	Cooper Bussmann LLC	SS-5	T4A, 250V, Rated breaking capacity 35A	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40015513 UL E19180
Alt.	Das & Sons International Ltd.	385T series	T4A, 250V, Rated breaking capacity 35A	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40008524 UL E205718
Alt.	Shenzhen Lanson Electronics Co. Ltd.	SMT	T4A, 250V, Rated breaking capacity 35A	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40012592 UL E221465
Alt.	Walter Electronic Co. Ltd.	ICP series	T4A, 250V, Rated breaking capacity 50A.	IEC/EN 60127-2 UL 248-1 UL 248-14	VDE 40012824 UL E56092
X capacitor (CX1) (optional)	Cheng Tung Industrial Co., Ltd.	CTX	X1 or X2, AC310V, Max. 0.47μF, 40/110/21/C	IEC/EN 60384-14 UL 1414	VDE 40022642 UL E193049
Alt.	Tenta Electric Industrial Co. Ltd.	MEX	X1 or X2, AC275V, Max. 0.47μF, 40/100/21/C	IEC/EN 60384-14 UL 1414	VDE 119119 UL E222911
Alt.	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	X1 or X2, AC275V, Max. 0.47μF, 40/100/21/C	IEC/EN 60384-14 UL 1414	VDE 40015608 UL E183780
Alt.	Okaya Electric Industries	RE series	X1 or X2, AC275V, Max. 0.47μF, 55/100/56/C	IEC/EN 60384-14 UL 1414	VDE 40028657 UL E47474
Alt.	VISHAY Capacitors Belgium NV	F1772	X1 or X2, AC310V, Max. 0.47μF, 40/100/56/C	IEC/EN 60384-14 UL 1414	VDE 40005079 UL E354331
Alt.	Dain Electronics Co., Ltd.	MPX, MEX and NPX	X1 or X2, AC275V, Max. 0.47μF, 40/100/21/C	IEC/EN 60384-14 UL 1414	VDE 40018798 UL E147776
Alt.	Sinhua Electronics (Huzhou) Co., Ltd.	MPX	X1 or X2, AC300V, Max. 0.47μF, 40/100/21/C	IEC/EN 60384-14 UL 1414	VDE 40014686 UL E237560
Alt.	Shunde Da Hua Electric Co., Ltd.	HD-MKP	X1 or X2, AC275V, Max. 0.47μF, 40/105/21/C	IEC/EN 60384-14 UL 1414	VDE 40001126 UL E227157

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Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ Trademark	Type No./ model No./	Technical data	Standard No./, Edition	Mark(s) & Certificates of conformity ¹
Alt.	Foshan Shunde Chuang Ge	MKP-X2	X1 or X2, AC275V, Max. 0.47μF, 40/105/21/C	IEC/EN 60384-14 UL 1414	VDE 40008922 UL E308832
Alt.	Hongzhi Enterprises Ltd.	MPX	X1 or X2, AC275V, Max. 0.47μF, 40/100/56/C	IEC/EN 60384-14 UL 1414	VDE 40023936 UL E192572
Alt.	Jiangsu Xinghua Huayu Co., Ltd.	MPX	X1 or X2, AC275V, Max. 0.47μF, 40/100/21/C	IEC/EN 60384-14	VDE 40022417
Y-Capacitor (CY1) (CY2 for Class I) (optional)	SUCCESS ELECTRONICS CO LTD	Type Y1: SE, SB Type Y2: SF, SE, SB	CY1: max. 2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40020001 VDE 40037221 ENEC 40037211 ENEC 40037213 ENEC 40037217 ENEC 40037218 ENEC 40037221 UL E114280
Alt.	MURATA MFG CO LTD	Type Y1: KX Type Y2: KH	CY1: max. 2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40002831 VDE 40002790 UL E37921
Alt.	WALSIN TECHNOLOGY CORP	Type Y1: AH Type Y2: AC	CY1: max. 2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001804 VDE 40001829 UL E146544
Alt.	JYA-NAY CO LTD	Type Y1: JN Type Y2: JY	CY1: max. 2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384-14 UL 60384-14 UL 1414	ENEC18/HN 69242987 ENEC 18/HN 69242983 UL E201384
Alt.	HAOHUA ELECTRONIC CO	Type Y1: CT7 Type Y2: CT7	CY1: max. 2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40003902 VDE 40013601 UL E233106
Alt.	JERRO ELECTRONICS CORP	Type Y1: JX Type Y2: JL	CY1: max. 2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40032158 VDE 40032160 UL E333001

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Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ Trademark	Type No./ model No./	Technical data	Standard No./, Edition	Mark(s) & Certificates of conformity ¹
Alt.	TDK CORP	Type Y1: CD Type Y2: CS	CY1: max. 2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40029780 VDE 40029781 UL E37861
Alt.	JYH CHUNG ELECTRONICS CO LTD	Type Y1: JD Type Y2: JY	CY1: max. 2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 137027 VDE 123326 UL E187963
Varistor (MOV1) (optional)	JOYIN CO LTD	10N471K 14N471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56	IEC 61051-2 UL 1449	VDE 005937 UL E325508
Alt.	CENTRA SCIENCE CORP	10D471K 14D471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56	IEC 61051-2 UL 1449	VDE 40008220 UL E316325
Alt.	THINKING ELECTRONIC INDUSTRIAL CO LTD	TVR10471K TVR14471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56	IEC 61051-2 UL 1449	VDE 005944 UL E314979
Alt.	SUCCESS ELECTRONICS CO LTD	SVR10D471K SVR14D471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56	IEC 61051-2 UL 1449	VDE 40030401 UL E330256
Alt.	CERAMATE TECHNICAL CO LTD	GNR10D471K GND14D471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56	IEC 61051-2 UL 1449	VDE 40031745 UL E315429
Alt.	BRIGHTKING (SHENZHEN) CO LTD	10D471K 14D471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56	IEC 61051-2 UL 1449	VDE 40027827 UL E327997
Alt.	LIEN SHUN ELECTRONICS CO LTD	10D471K 14D471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56	IEC 61051-2 UL 1449	VDE 40005858 UL E315524
Alt.	HONGZHI ENTERPRISES LTD	HEL-10D471K HEL-14D471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56	IEC 61051-2 UL 1449	VDE 40008621 UL E324904
Alt.	GUANGXI NEW FUTURE INFORMATION INDUSTRY CO LTD	10D471K 14D471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56	IEC 61051-2 UL 1449	VDE 40030322 UL E323753

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ Trademark	Type No./ model No./	Technical data	Standard No./, Edition	Mark(s) & Certificates of conformity ¹
Optocoupler (U1)	LITE-ON Technology Corporation	LTV-817 LTV-817M LTV-817S	Ext. Cr: min. 8.0 mm; DTI: min. 0.6 mm; Thermal cycling test. Max. operating temp.: 115°C	IEC/EN 60747-5-2 IEC/EN 60950-1 UL 1577	VDE 40015248 Semko No. 1119078 UL E113898
Alt.	Everlight Electronics Co., Ltd.	EL817	Ext. Cr: min. 7.7 mm; DTI: min. 0.5 mm; Thermal cycling test. Max. operating temp.: 110°C	IEC/EN 60747-5-2 IEC/EN 60950-1 UL 1577	VDE 132249 Nemko No. P11214765/A1 UL E214129
Alt.	Bright Led Electronics Corp.	BPC-817 BPC-817 M BPC-817 S	Ext. Cr: min. 7.0 mm; DTI: min. 0.4 mm; Thermal cycling test. Max. operating temp.: 100°C	IEC/EN 60747-5-2 IEC/EN 60950-1 UL 1577	VDE 40007240 Semko No. 813247 UL E236324
Alt.	Fairchild Semiconductor Pte. Ltd.	FOD817B H11A817B	Ext. Cr: min. 7.8 mm; DTI: min. 0.6 mm; Thermal cycling test. Max. operating temp.: 115°C	IEC/EN 60747-5-2 IEC/EN 60950-1 UL 1577	VDE 40026857 Semko No. 1024922 UL E90700
Inductor (LF1) (Optional)	GlobTek/HAOPU WEI/HEJIA/BOA M	NF00109 RC00088	130°C	IEC/EN 60950-1	Tested with appliance
Choke (LF2) (Optional)	GlobTek/HAOPU WEI/HEJIA/BOA M	RC00150	130°C	IEC/EN 60950-1	Tested with appliance
Choke (L1)	GlobTek/HAOPU WEI/HEJIA/BOA M	RC00085	130°C	IEC/EN 60950-1	Tested with appliance
Choke (L2)	GlobTek/HAOPU WEI/HEJIA/BOA M	XF00730	130°C, with bobbin material as T1 transformer.	IEC/EN 60950-1	Tested with appliance
Transformer (T1)	GlobTek/HAOPU WEI/HEJIA/BOA M	XF00735 for 12-14.9V XF00734 for 15-17.9V XF00738 for 18-20V XF00722 for 20.1-24V	Class B, with insulation system and critical component listed below	IEC/EN 60950-1	Tested with appliance

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ Trademark	Type No./ model No./	Technical data	Standard No./, Edition	Mark(s) & Certificates of conformity ¹
-Insulation system	GLOBTEK INC	GTX-130-TM	Class 130(B)	IEC/EN 60601-1 UL 1446	Tested with appliance UL E243347
-Alt.	WUXI HAOPUWEI ELECTRONICS CO LTD	ZT-130	Class 130(B)	IEC/EN 60601-1 UL 1446	Tested with appliance UL E315275
-Alt.	SHAN DONG BOAM ELECTRIC CO LTD	BOAM-01	Class 130(B)	IEC/EN 60601-1 UL 1446	Tested with appliance UL E252329
-Alt.		ENG130-1	Class 130(B)	IEC/EN 60601-1 UL 1446	Tested with appliance UL E308897
-Magnet wire (Primary)	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWN/U	130°C	IEC/EN 60950-1 UL 1446	Tested with appliance UL E201757
-Alt.	JUNG SHING WIRE CO LTD	UEW-4 UEY-2	130°C	IEC/EN 60950-1 UL 1446	Tested with appliance UL E174837
-Alt.	JIANGSU HONGLIU MAGNET WIRE TECHNOLOGY CO LTD	2UEW/130	130°C	IEC/EN 60950-1 UL 1446	Tested with appliance UL E335065
-Alt.	CHANGZHOU DAYANG WIRE & CABLE CO LTD	2UEW/130	130°C	IEC/EN 60950-1 UL 1446	Tested with appliance UL E158909
-Alt.	WUXI JUFENG COMPOUND LINE CO LTD	2UEWB	130°C	IEC/EN 60950-1 UL 1446	Tested with appliance UL E206882
-Alt.	JIANGSU DARTONG M & E CO LTD	UEW	130°C	IEC/EN 60950-1 UL 1446	Tested with appliance UL E237377
-Alt.	SHANDONG SAINT ELECTRIC CO LTD	UEW/130	130°C	IEC/EN 60950-1 UL 1446	Tested with appliance UL E194410

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ Trademark	Type No./ model No./	Technical data	Standard No./, Edition	Mark(s) & Certificates of conformity ¹
-Alt.	ZHEJIANG LANGLI ELECTRIC EQUIPMENTS CO LTD	UEW	130°C	IEC/EN 60950-1 UL 1446	Tested with appliance UL E222214
-Triple-insulated wire (Secondary)	GREAT LEOFLOX INDUSTRIAL CO LTD	TRW(B)	Min.130°C	IEC/EN 60950-1 UL 2353	Tested with appliance UL E211989
-Alt.	COSMOLINK CO LTD	TIW-M	Min.130°C	IEC/EN 60950-1 UL 2353	Tested with appliance UL E213764
-Alt.	FURUKAWA ELECTRIC CO LTD	TEX-E	Min.130°C	IEC/EN 60950-1 UL 2353	Tested with appliance UL E206440
-Alt.	TOTOKU ELECTRIC CO LTD	TIW-2	Min.130°C	IEC/EN 60950-1 UL 2353	Tested with appliance UL E166483
-Alt.	E&B TECHNOLOGY CO LTD	E&B-XXXB E&B-XXXB-1	Min.130°C	IEC/EN 60950-1 UL 2353	Tested with appliance UL E315265
-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J T375HF	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E59481
-Alt.	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E41429
-Alt.	HITACHI CHEMICAL CO LTD	CP-J-8800	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E42956
-Insulating tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 1350T-1 44	Min.130°C	IEC/EN 60950-1 UL 510	Tested with appliance UL E17385
-Alt.	BONDTEC PACIFIC CO LTD	370S	Min.130°C	IEC/EN 60950-1 UL 510	Tested with appliance UL E175868
-Alt.	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ CT WF	Min.130°C	IEC/EN 60950-1 UL 510	Tested with appliance UL E165111

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ Trademark	Type No./ model No./	Technical data	Standard No./, Edition	Mark(s) & Certificates of conformity ¹
-Alt.	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	Min.130°C	IEC/EN 60950-1 UL 510	Tested with appliance UL E246950
-Alt.	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	Min.130°C	IEC/EN 60950-1 UL 510	Tested with appliance UL E246820
Insulating tube for HS3, HS4 alternate wrapping material	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR RSFR-H RSFR-HPF	600V, 125°C	IEC/EN 60950-1 UL 224	Tested within appliance UL E203950
Alt.	QIFURUI ELECTRONICS CO	QFR-h	600V, 125°C	IEC/EN 60950-1 UL 224	Tested within appliance UL E225897
Alt.	DONGGUAN SALIPT CO LTD	SALIPT S-901-300 SALIPT S-901-600	Min. 300V, 125°C	IEC/EN 60950-1 UL 224	Tested within appliance UL E209436
Alt.	GUANGZHOU KAIHENG ENTERPRISE GROUP	K-2 (+) K-2 (CB)	Min. 300V, 125°C	IEC/EN 60950-1 UL 224	Tested within appliance UL E214175
Alt.	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-HFT	Min. 300V, 125°C	IEC/EN 60950-1 UL 224	Tested within appliance UL E180908
Insulating sheet	FORMEX,DIV OF IL TOOL WORKS INC, FRMRLY FASTEX, DIV OF IL TOOL WORKS INC	FORMEX GK series	V-0, min. 0.4 mm thickness, 115°C	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested within appliance UL E121855
Alt.	SKC CO LTD	SH71S	VTM-2, min. 0.4 mm thickness, 105°C	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested within appliance UL E74359
Alt.	TORAY INDUSTRIES INC	Lumirror H10	VTM-2, min. 0.4 mm thickness, 105°C	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested within appliance UL E86511

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ Trademark	Type No./ model No./	Technical data	Standard No./, Edition	Mark(s) & Certificates of conformity ¹
Alt.	SABIC INNOVATIVE PLASTICS US L L C	FR60 series FR63 series FR65 series FR7 series FR700 series	V-0, min. 0.4 mm thickness, 130°C	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested within appliance UL E121562
Alt.	MIANYANG LONGHUA FILM CO LTD	PP-BK-20 PP-BK-17 PP-BK-18	VTM-0, min. 0.4 mm thickness, 80°C	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested within appliance UL E254551
Alt.	ITW ELECTRONICS COMPONENTS/ PRODUCTS (SHANGHAI) CO LTD	FORMEX-18 FORMEX-17	V-0, min. 0.4 mm thickness, 100°C	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested within appliance UL E256266
Enclosure	SABIC INNOVATIVE PLASTICS B V	SE1X SE1	Min. V-1 at 1.5 mm thickness	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt.	SABIC INNOVATIVE PLASTICS B V	SE100	Min. V-1 at 1.5 mm thickness	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt.	SABIC INNOVATIVE PLASTICS B V	C2950	Min. V-0 at 1.5 mm thickness	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt.	SABIC INNOVATIVE PLASTICS B V	CX7211 EXCY0098	Min. V-0 at 1.5 mm thickness	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt.	TEIJIN CHEMICALS LTD	LN-1250P LN-1250G	Min. V-0 at 1.5 mm thickness	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E50075
Alt.	CHI MEI Corporation	PA-765A	Min. V-1 at 1.5 mm thickness	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E56070
Alt.	CHI MEI Corporation	PC-540	Min. V-0 at 1.5 mm thickness	IEC/EN 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E56070
Earthing wire for Class I model	KUNSHAN NEW ZHICHENG ELECTRONICS TECHNOLOGIE S CO LTD	1815 1015 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1 UL 758	Tested within appliance UL E237831

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ Trademark	Type No./ model No./	Technical data	Standard No./, Edition	Mark(s) & Certificates of conformity ¹
Alt.	ZHUANG SHAN CHUAN ELECTRICAL PRODUCTS (KUNSHAN) CO LTD	1815 1015 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1 UL 758	Tested within appliance UL E333601
Alt.	DONGGUAN CHUANTAI WIRE PRODUCTS CO LTD	1815 1015 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1 UL 758	Tested within appliance UL E315628
Alt.	YONG HAO ELECTRICAL INDUSTRY CO LTD	1815 1015 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1 UL 758	Tested within appliance UL E240426
Alt.	DONGGUAN GUNEETAL WIRE & CABLE CO LTD	1815 1015 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1 UL 758	Tested within appliance UL E204204
Alt.	SHENG YU ENTERPRISE CO LTD	1815 1015 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1 UL 758	Tested within appliance UL E219726
Alt.	SUZHOU HONGMENG ELECTRONIC CO LTD	1815 1015 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1 UL 758	Tested within appliance UL E315421
Alt.	SUZHOU YEMAO ELECTRONIC CO LTD	1815 1015 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1 UL 758	Tested within appliance UL E353532
Non-critical component list					
Output cord	Interchangeable	Interchangeable	Min. 24AWG, min. 300Vac, min. 80°C	IEC/EN 60950-1 UL 758	Tested with appliance UL approved
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

1.5.1	TABLE: Opto Electronic Devices	P
Manufacturer.....	Lite-on / Everlight / Bright Led / Fairchild	
Type	LTV-817, LTV-817M, LTV-817S / EL817 / BPC-817, BPC-817 M, BPC-817 S / FOD817B, H11A817B	
Separately tested	Certified by VDE, Nemko, Semko & UL	
Bridging insulation.....	Reinforced insulation	
TRF No. IEC60950_1C		

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
External creepage distance: 8.01/ 7.7/ 7.0/ 7.8 Internal creepage distance: -* Distance through insulation.....: 0.6/ 0.5/ 0.4/ 0.6 Tested under the following conditions: R			
Input.....: -			
Output.....: -			
supplementary information			
* Compliance with thermal cycling test was checked on these parts.			

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
Tested on model: GT-43004P12012-T3						
90V / 50Hz	1.539	--	136	FS1	1.539	Normal operation with 12Vdc / 10.0A output.
90V / 60Hz	1.535	--	136	FS1	1.535	
100 V / 50 Hz	1.372	2.0	135	FS1	1.372	
100 V / 60 Hz	1.372	2.0	135	FS1	1.372	
240 V / 50 Hz	0.598	2.0	132	FS1	0.598	
240 V / 60 Hz	0.602	2.0	132	FS1	0.602	
264 V / 50 Hz	0.548	--	132	FS1	0.548	
264 V / 60 Hz	0.554	--	132	FS1	0.554	
Tested on model: GT-43004P12016-1.0-T3						
90V / 50Hz	1.494	--	132	FS1	1.494	Normal operation with 15Vdc / 8A output.
90V / 60Hz	1.496	--	132	FS1	1.496	
100 V / 50 Hz	1.337	2.0	131	FS1	1.337	
100 V / 60 Hz	1.337	2.0	131	FS1	1.337	
240 V / 50 Hz	0.586	2.0	129	FS1	0.586	
240 V / 60 Hz	0.590	2.0	129	FS1	0.590	
264 V / 50 Hz	0.537	--	129	FS1	0.537	
264 V / 60 Hz	0.543	--	129	FS1	0.543	
Tested on model: GT-43004P12019-T3						
90 V / 50 Hz	1.507	--	133	FS1	1.507	Normal operation with 19Vdc / 6.31A output.
90 V / 60 Hz	1.507	--	133	FS1	1.507	
100 V / 50Hz	1.347	2.0	132	FS1	1.347	
100 V / 60Hz	1.347	2.0	133	FS1	1.347	
240 V / 50Hz	0.587	2.0	130	FS1	0.587	
240 V / 60Hz	0.592	2.0	130	FS1	0.592	

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
264 V / 50 Hz	0.539	--	130	FS1	0.539	
264 V / 60 Hz	0.544	--	130	FS1	0.544	
Tested on model: GT-43004P15024-T3						
90 V / 50 Hz	1.680	--	163	FS1	1.680	Normal operation with 24Vdc / 6.25A output.
90 V / 60 Hz	1.679	--	163	FS1	1.679	
100 V / 50Hz	1.500	2.0	162	FS1	1.500	
100 V / 60Hz	1.499	2.0	162	FS1	1.499	
240 V / 50Hz	0.708	2.0	159	FS1	0.708	
240 V / 60Hz	0.712	2.0	159	FS1	0.712	
264 V / 50 Hz	0.651	--	159	FS1	0.651	
264 V / 60 Hz	0.655	--	159	FS1	0.655	
Supplementary information:						
The measured input current at rated voltage shall be ≤ 110 % of rated current.						

2.1.1.5	TABLE: max. V, A, VA test				P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
For model GT-43004P12012-T3					
12Vdc	10.0	12.07Vdc	13.85	149.38	
For model GT-43004P12016-1.0-T3					
15Vdc	8.0	14.89Vdc	12.23	164.10	
Model: Model GT-43004P12019-T3					
19Vdc	6.31	19.08Vdc	10.88	187.08	
Model: Model GT-43004P15024-T3					
24Vdc	6.25	23.54Vdc	9.66	219.57	
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.	
Test with model GT-43004P12012-T3				
Pin P1 to Pin P2		51.6	--	--
Pin 7 to Pin 10		68.8	--	--
Pin P2 to C9 Pin (+)		--	12.1	Q6
Test with model GT-43004P12016-1.0-T3				

IEC 60950-1				
Clause	Requirement + Test	Result - Remark		Verdict
Pin P1 to Pin P2		59.6	--	--
Pin 7 to Pin 10		50.4	--	--
Pin P2 to C9 Pin (+)		--	15.1	Q6
Test with model GT-43004P12019-T3				
Pin P1 to Pin P2		63.2	--	--
Pin 7 to Pin 10		51.6	--	--
Pin P2 to C9 Pin (+)		--	19.1	Q6
Test with model GT-43004P15024-T3				
Pin P1 to Pin P2		71.2	--	--
Pin 7 to Pin 10		51.6	--	--
Pin P2 to C9 Pin (+)		--	23.6	Q6
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)		
Test with model GT-43004P12012-T3, GT-43004P12016-1.0-T3, GT-43004P12019-T3 and GT-43004P15024-T3				
Q6 shorted		0 Vdc (shorted)		
Supplementary information:				
Test voltage: 264 Vac, 60 Hz				

2.5	TABLE: Limited power sources					N/A
			I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
Circuit output tested: --						
Condition	Model No.	Uoc (V)	I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
--	--	--	--	8.0	--	100
S.F.C.	See the note below					
Supplementary information:						
--						

2.10.2	Table: working voltage measurement			P
Location	Peak voltage (V)	RMS voltage (V)	Comments	
T1 pin 1 / pin P1	500	345		
T1 pin 1 / pin P2	572	368	Max. Vp / Vrms	
T1 pin 1 / pin 10	556	334		
T1 pin 2 / pin P1	400	294		

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Clause	Requirement + Test	Result - Remark	Verdict
T1 pin 2 / pin P2	476	302	
T1 pin 2 / pin 10	496	300	
T1 pin 3 / pin P1	448	291	
T1 pin 3 / pin P2	468	301	
T1 pin 3 / pin 10	400	290	
T1 pin 4 / pin P1	504	297	
T1 pin 4 / pin P2	360	174	
T1 pin 4 / pin P10	432	185	
T1 pin 5 / pin P1	380	179	
T1 pin 5 / pin P2	368	182	
T1 pin 5 / pin P10	444	193	
US3 Pin 3 to Pin 1	392	199	
US3 Pin 3 to Pin 2	392	198	
US3 Pin 4 to Pin 1	392	198	
US3 Pin 4 to Pin 2	392	197	
CY1	360	176	
Supplementary information:			
The maximum working voltage is measured when Model GT-43004P15024-T3 is chosen as EUT.			
Test voltage: 240 Vac, 60 V			

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
Functional:							
On PCB solder side:							
Line and Neutral before and after current fuse (FS1)	340	240	2.0	3.1	2.4	3.1	
Two ends of the current fuse (FS1)	340	240	2.0	9.9	2.4	9.9	
On PCB component side:							
Line and Neutral before current fuse (FS1)	340	240	2.0	9.1	2.4	9.1	
Two ends of the current fuse (FS1)	340	240	2.0	2.8	2.4	2.8	

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Clause	Requirement + Test			Result - Remark		Verdict
Basic:						
On PCB solder side:						
Line and Earthed	340	240	2.6	5.6	2.6	5.6
On PCB component side:						
Two ends of CY2	392	240	2.6	3.4	2.6	3.4
Reinforced:						
On PCB solder side:						
Primary and secondary (two sides of CY1)	360	240	5.2	6.5	5.2	6.5
Primary and secondary (two sides of U1)	392	240	5.2	5.3	5.2	7.0 ²
On PCB component side:						
Primary circuits to accessible enclosure	340	240	5.2	8.0	5.2	8.0
Primary circuits to accessible screws	340	240	5.2	6.2	5.2	6.2
On PCB solder side of Transformer (T1):						
Primary traces to secondary traces	572	368	6.0	11.1	7.4	11.1
Supplementary information:						
FI: Function insulation; BI: Basic insulation; SI: Supplementary insulation; RI: Reinforced insulation						
1. With the equipment to be operated at 4000m above sea level max. the minimum clearances shall be multiplied by the factor 1.29.						
2. There is a slot wide > 1 mm under components.						
3. Two layers of insulating tape wrap around the heatsink.						
4. A force of 10 N is applied to the internal components and 30 N is applied to the enclosure when measuring the distances.						
5. Other functional insulation according to subclause 5.3.4 c).						
6. Only minimum distance recorded (same as clearance) and the actual distance is much larger.						
7. For the clearances and creepage distances which no described above are larger than the limit above.						

2.10.5	TABLE: Distance through insulation measurements				P
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (Vac)	Required DTI (mm)	DTI (mm)
T1 transformer bobbin (RI)	572	368	3000	0.4	0.6
Insulating sheet around the internal circuit board (RI)	340	240	3000	0.4	Min. 2.0
Insulating tape around the outer side of transformer T1 (RI)	572	368	3000/2 layer	3 layers	3 layers

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

FI: functional insulation; BI: basic insulation; RI: reinforced insulation.

4.5 a)	TABLE: Thermal requirements					P
	Supply voltage (V) :	90Vac / 50Hz	264V / 50Hz	90Vac / 50Hz	264V / 50Hz	—
	Ambient Tmin (°C) :	40.0	40.0	40.0	40.0	—
	Ambient Tmax (°C) :	40.0	40.0	40.0	40.0	—
Maximum measured temperature T of part/at:		T (°C)				Allowed Tmax (°C)

Test with model GT-43004P12012-T3

Test position:	Label on top		Label on bottom		--
T1 coil	100.7	92.5	103.2	94.6	110*
T1 core	94.0	85.9	96.7	88.4	120
LF1 coil	82.2	68.7	82.8	69.4	130
LF2 coil	86.9	69.4	89.1	71.2	130
L1 coil	89.1	73.6	91.6	75.7	130
L2 coil	91.1	75.7	93.3	77.5	130
MOV1 body	81.1	69.0	82.6	70.2	85
CX1 body	80.9	69.0	82.9	70.7	100
CY1 body	89.8	81.4	91.9	82.8	125
CY2 body	82.6	68.4	83.2	69.8	125
THR1 body	71.9	62.7	70.4	61.8	130
TRH2 body	87.8	80.1	90.8	82.4	130
U1 body	94.6	86.8	97.6	89.0	100
BD1 body	86.5	72.6	89.4	74.7	130
PWB under D1	84.9	73.7	87.7	75.6	130
PWB under Q5	87.6	80.2	91.0	82.7	130
PWB under Q6	84.3	77.6	87.8	80.1	130
PWB under Q1	86.4	74.6	89.2	76.6	130
PWB under Q2	85.2	75.9	88.2	78.1	130
C1 body	85.8	71.7	88.6	73.7	105
C2body	86.6	74.0	89.3	76.0	105
C4 body	89.6	79.9	92.3	82.1	105
C6 body	92.0	83.9	94.6	86.0	105

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Clause	Requirement + Test			Result - Remark	Verdict
Maximum measured temperature T of part/at:		T (°C)			Allowed Tmax (°C)
C9 body	89.9	81.8	92.4	83.9	105
C10 body	89.2	81.3	92.0	83.6	105
C11 body	87.9	80.0	90.6	82.2	105
AC inlet	60.8	54.4	61.1	54.8	70
Internal wire	76.1	65.6	78.4	67.3	80
Output wire	79.8	75.0	82.1	77.0	90
NF1 coil	77.9	73.4	80.8	75.7	130
Enclosure inside above T1	57.1	54.3	62.5	58.4	-
Enclosure outside above T1	67.3	61.9	61.6	56.9	95
Test with model GT-43004P12019-T3					
Test position:	Label on top		Label on bottom		--
T1 coil	98.3	87.5	96.6	88.7	110*
T1 core	91.5	81.8	91.5	83.0	120
LF1 coil	85.7	70.8	83.1	70.7	130
LF2 coil	91.5	72.2	91.0	73.1	130
L1 coil	92.4	75.4	91.9	76.5	130
L2 coil	94.1	77.2	93.7	78.3	130
MOV1 body	81.4	71.3	81.0	71.9	85
CX1 body	85.5	71.4	84.9	72.3	100
CY1 body	90.6	80.2	89.7	81.0	125
CY2 body	89.1	71.5	86.6	71.8	125
THR1 body	77.5	66.1	72.8	63.7	130
TRH2 body	89.1	80.5	87.8	80.7	130
U1 body	95.4	86.5	94.1	86.7	100
BD1 body	94.6	76.7	93.5	76.7	130
PWB under D1	89.6	76.5	88.4	76.6	130
PWB under Q5	89.5	81.4	88.1	81.6	130
PWB under Q6	86.5	79.0	84.4	78.4	130
PWB under Q1	91.4	77.8	90.3	77.9	130
PWB under Q2	88.8	78.1	88.1	78.4	130
C1 body	90.6	74.4	89.7	74.6	105
C2body	90.7	75.9	90.3	76.7	105

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Maximum measured temperature T of part/at:		T (°C)			Allowed Tmax (°C)
C4 body	90.2	79.4	89.9	80.3	105
C6 body	92.9	83.5	92.6	84.5	105
C9 body	89.7	81.5	89.7	83.0	105
C10 body	90.4	82.3	90.5	83.7	105
C11 body	87.4	78.9	87.2	80.0	105
AC inlet	60.5	53.3	57.7	52.9	70
Internal wire	76.3	67.4	76.0	68.1	80
Output wire	76.8	70.6	75.2	70.8	90
NF1 coil	83.4	76.3	81.6	76.3	130
Enclosure inside above T1	64.0	59.8	64.5	60.3	-
Enclosure outside above T1	71.3	64.8	68.8	63.3	95
Test with model GT-43004P12016-1.0-T3					
Test position:	Label on top		Label on bottom		--
T1 coil	96.6	87.9	97.3	88.5	110*
T1 core	90.8	82.0	91.5	82.7	120
LF1 coil	83.3	69.9	82.1	69.2	130
LF2 coil	89.6	70.9	90.3	71.3	130
L1 coil	90.8	74.3	91.9	74.9	130
L2 coil	91.4	76.1	92.4	76.7	130
MOV1 body	80.8	70.2	81.1	70.3	85
CX1 body	82.7	69.9	83.5	70.5	100
CY1 body	88.6	79.3	89.5	79.8	125
CY2 body	81.8	68.7	82.1	68.4	125
THR1 body	75.1	65.0	73.3	63.7	130
TRH2 body	86.5	79.1	87.9	79.8	130
U1 body	91.2	83.4	92.5	84.2	100
BD1 body	88.4	74.5	90.0	75.3	130
PWB under D1	86.0	75.4	87.4	76.2	130
PWB under Q5	87.3	80.4	88.6	81.0	130
PWB under Q6	83.3	77.2	84.2	77.4	130
PWB under Q1	88.8	76.9	90.2	77.4	130
PWB under Q2	85.6	76.3	87.0	76.9	130

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Maximum measured temperature T of part/at:		T (°C)			Allowed Tmax (°C)
C1 body	87.6	73.6	88.9	74.1	105
C2body	88.0	75.1	88.8	75.6	105
C4 body	90.0	79.8	90.5	80.2	105
C6 body	90.3	81.8	91.0	82.2	105
C9 body	87.5	79.3	88.1	79.6	105
C10 body	87.1	78.6	87.6	79.1	105
C11 body	86.8	78.5	87.2	78.7	105
AC inlet	58.3	52.7	56.8	51.4	70
Internal wire	76.9	66.5	76.7	66.8	80
Output wire	75.4	70.4	74.0	69.2	90
NF1 coil	84.7	78.4	84.1	77.9	130
Enclosure inside above T1	63.6	59.3	64.8	60.1	-
Enclosure outside above T1	69.6	63.5	67.5	61.8	95
Test with model GT-43004P15024-T3					
Test position:	Label on top		Label on bottom		--
T1 coil	108.8	102.2	106.5	100.1	110*
T1 core	92.6	85.2	89.9	82.9	120
LF1 coil	84.3	70.9	81.9	69.2	130
LF2 coil	91.5	72.6	90.1	71.4	130
L1 coil	89.8	76.6	87.7	74.9	130
L2 coil	93.0	78.5	90.5	76.6	130
MOV1 body	81.9	70.8	80.8	69.6	85
CX1 body	82.8	71.3	81.5	70.2	100
CY1 body	93.2	85.8	90.5	83.6	125
CY2 body	79.1	68.1	77.5	67.1	125
THR1 body	72.6	63.8	69.7	61.8	130
TRH2 body	92.6	86.4	90.3	84.8	130
U1 body	95.9	90.2	93.6	88.5	100
BD1 body	88.1	75.5	86.1	73.8	130
PWB under D1	86.4	76.8	84.1	74.9	130
PWB under Q5	94.3	89.2	90.8	86.5	130
PWB under Q6	91.2	86.5	87.1	83.2	130

IEC 60950-1							
Clause	Requirement + Test				Result - Remark		Verdict
Maximum measured temperature T of part/at:		T (°C)				Allowed Tmax (°C)	
PWB under Q1		89.0	79.5	86.9	77.7	130	
PWB under Q2		85.4	76.8	83.0	74.9	130	
C1 body		88.8	75.5	87.2	74.0	105	
C2body		88.0	76.8	85.8	75.0	105	
C4 body		94.9	86.1	92.5	84.2	105	
C6 body		96.1	88.9	93.6	87.2	105	
C9 body		91.1	84.7	89.0	83.2	105	
C10 body		88.4	81.7	85.8	79.7	105	
C11 body		82.8	76.9	81.1	75.4	105	
AC inlet		54.0	50.1	56.8	52.0	70	
Internal wire		75.7	66.9	74.9	66.1	80	
Output wire		70.6	66.8	66.0	62.8	90	
Enclosure inside above T1		59.5	56.8	60.9	57.7	-	
Enclosure outside above T1		71.7	66.4	59.1	55.9	95	
Temperature T of winding:	t1 (°C)	R1 (Ω)	t2 (°C)	R2 (Ω)	T (°C)	Allowed Tmax (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information: The equipment was submitted and evaluated for maximum manufacturer's recommended ambient (Tmra) of 40 °C. The temperatures were measured by thermal couple method by the worst install method in normal mode as described in 1.6.2 at voltage described in 1.4.5. *: as the temperature of winding was measured by thermocouples, the limit value was reduced by 10°C.							

4.5.5	TABLE: Ball pressure test of thermoplastic parts			P
	Allowed impression diameter (mm)	:	≤ 2 mm	—
Part		Test temperature (°C)	Impression diameter (mm)	
Bobbin of Mains transformer				
T375J		125	1.2	
T375HF		125	1.2	
PM-9820		125	1.1	
CP-J-8800		125	1.2	
Supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict
4.6.1& 4.6.2	TABLE: enclosure openings		P
Location		Size (mm)	Comments
No openings on the enclosure			

4.7	TABLE: Resistance to fire					P
Part		Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Plastic enclosure		SABIC INNOVATIVE PLASTICS B V	SE1X SE1	Min. 2.0mm	V-1	UL
Alt.		SABIC INNOVATIVE PLASTICS B V	SE100	Min. 2.0mm	V-1	UL
Alt.		SABIC INNOVATIVE PLASTICS B V	C2950	Min. 2.0mm	V-0	UL
Alt.		SABIC INNOVATIVE PLASTICS B V	CX7211 EXCY0098	Min. 2.0mm	V-1	UL
Alt.		TEIJIN CHEMICALS LTD	LN-1250P LN-1250G	Min. 2.0mm	V-0	UL
Alt.		CHI MEI Corporation	PA-765A	Min. 2.0mm	V-1	UL
Alt.		CHI MEI Corporation	PC-540	Min. 2.0mm	V-0	UL
PCB		TECHNI TECHNOLOGY LTD	T2A T2B T4	Min. 1.6mm	V-0	UL
Alt.		DONGGUAN HE TONG ELECTRONICS CO LTD	CEM1 2V0 FR4	Min. 1.6mm	V-0	UL
Alt.		CHEERFUL ELECTRONIC	03 03A	Min. 1.6mm	V-0	UL
Alt.		DONGGUAN DAYSUN ELECTRONIC CO LTD	DS2	Min. 1.6mm	V-0	UL
Alt.		SUZHOU CITY YILIHUA ELECTRONICS CO LTD	YLH-1	Min. 1.6mm	V-0	UL
Alt.		SHANGHAI AREX PRECISION ELECTRONIC CO LTD	02V0 04V0	Min. 1.6mm	V-0	UL
Alt.		BRITE PLUS ELECTRONICS (SUZHOU) CO LTD	DKV0-3A DGV0-3A	Min. 1.6mm	V-0	UL

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Clause	Requirement + Test		Result - Remark		Verdict
Alt.	KUOTIANG ENT LTD	C-2 C-2A	Min. 1.6mm	V-0	UL
Alt.	SHENZHEN TONGCHUANGXIN ELECTRONICS CO LTD	TCX	Min. 1.6mm	V-0	UL
Supplementary information:					

5.1	TABLE: touch current measurement				P
Measured between:		Measured (mA)	Limit (mA)	Comments/conditions	
L/N and enclosure		Max. 0.39	3.5	--	
L/N and secondary output		Max. 0.113	0.25	--	
L/N and unearthed enclosure covered with metal foil		Max. 0.002	0.25	--	
Supplementary information:					
Input: 264V / 60Hz					
Overall capacity: CY1: 2200pF, CY2: 3300pF.					

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 (Vac)	Breakdown Yes / No
RI: L/N and secondary circuits		AC	3000	No
RI: L/N and plastic enclosure covered with metal foil		AC	3000	No
RI: Transformer: primary and secondary		AC	3000	No
RI: Transformer: secondary and core		AC	3000	No
FI: Line and Neutral after fuse (FS1) opened		AC	1500	No
BI: Line/Neutral and Earth		AC	1500	No
Supplementary information:				
For all models list in this report.				
FI: Functional insulation; BI: Basic insulation; SI: Supplementary insulation; RI: Reinforced insulation.				

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)		20-25		—	
	Power source for EUT: Manufacturer, model/type, output rating		--		—	
Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
Tested on model: GT-43004P15024-T3						
C1	SC	264	<1s	FS1	0.65→>8.4→0	Observation: Fuse (FS1) opened. No hazards. Damaged: - Temp: - Max. Voltage: -
BD1	SC	264	<1s	FS1	0.65→>8.4→0	Observation: Fuse (FS1) opened. No hazards. Damaged: - Temp: - Max. Voltage: -
R1	SC	264	30 min.	FS1	0.65→0.65	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
R2	SC	264	<1s	FS1	0.65→>8.4→0	Observation: Fuse (FS1) opened. No hazards. Damaged: - Temp: - Max. Voltage: -
Q5	SC	264	30 min.	FS1	0.65→0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
Q6	SC	264	30 min.	FS1	0.65→0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
US1 Pin 1-2	SC	264	30 min.	FS1	0.65→0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
US1 Pin 2-3	SC	264	30 min.	FS1	0.65→0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
US1 Pin 2-16	SC	264	30 min.	FS1	0.65→0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
US1 Pin 3-16	SC	264	30 min.	FS1	0.65→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
US1 Pin 12-13	SC	264	30 min.	FS1	0.65→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
US1 Pin 9-10	SC	264	30 min.	FS1	0.65→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
US2 pin 1-5	SC	264	30 min.	FS1	0.65→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
US2 pin 5-8	SC	264	30 min.	FS1	0.65→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
US2 Pin 1-8	SC	264	10 min.	FS1	0.65	Observation: Unit operated normally. No hazards. Damaged: - Temp: - Max. Voltage: -
US2 Pin 2-5	SC	264	10 min.	FS1	0.65	Observation: Unit operated normally. No hazards. Damaged: - Temp: - Max. Voltage: -
U1 Pin 1-2	SC	264	10 min.	FS1	0.65→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
U1 Pin 3-4	SC	264	10 min.	FS1	0.65→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
U1 Pin 1	OC	264	30 min.	FS1	0.65→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
U1 Pin 3	OC	264	30 min.	FS1	0.65→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
U2 Pin R to A	SC	264	60 min.	FS1	0.65→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
U2 Pin A to C	SC	264	60 min.	FS1	0.65→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
U2 Pin R to C	SC	264	30 min.	FS1	0.65→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
Q1(G-D)	SC	264	< 1 s	FS1	0.65→ >8.4→0	Observation: Fuse (FS1) opened. No hazards. Damaged: - Temp: - Max. Voltage: -
Q1(D-S)	SC	264	< 1 s	FS1	0.65→ >8.4→0	Observation: Fuse (FS1) opened. No hazards. Damaged: - Temp: - Max. Voltage: -
Q1(G-S)	SC	264	30 min.	FS1	0.65→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
Q2(G-D)	SC	264	< 1 s	FS1	0.65→ >8.4→0	Observation: Fuse (FS1) opened. No hazards. Damaged: - Temp: - Max. Voltage: -

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
Q2(D-S)	SC	264	< 1 s	FS1	0.65→>8.4→0	Observation: Fuse (FS1) opened. No hazards. Damaged: - Temp: - Max. Voltage: -
Q2(G-S)	SC	264	30 min.	FS1	0.65→0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
T1 Pin P1 to P2	SC	264	30 min.	FS1	0.65→0.01	Observation: Fuse (FS1) opened. No hazards. Damaged: - Temp: - Max. Voltage: -
T1 Pin 7-10	SC	264	30 min.	FS1	0.65→0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
T1 Pin 1-3	SC	264	30 min.	FS1	0.65→0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
T1 Pin 4-5	SC	264	30 min.	FS1	0.65→0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
Tested on model: GT-43004P12012-T3						
Output	SC	264	30 min.	FS1	0.55→0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
Output	O-L	264	Steady state	FS1	0.55→0.68	Total testing duration: 8.9 hours. No hazard. Normal operation at output overload to max. 12.3 A, then unit shut down. Damaged: - Temp: T1 coil: 118.4°C, T1 core: 101.0°C, U1 body: 107.9°C. Max. Voltage: 12.07 V

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Clause	Requirement + Test				Result - Remark	
Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
T1 Pin P1 to P2 (after Q6)	SC	264	30 min.	FS1	0.55→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
T1 Pin P1 to P2 (after Q6)	O-L	264	Steady state	FS1	0.55→ 0.66	Total testing duration: 8.9 hours. No hazard. Normal operation at output overload to max. 12.5 A, then unit shut down. Damaged: - Temp: T1 coil: 132.0°C, T1 core: 114.9°C, U1 body: 118.3°C. Max. Voltage: 12.07 V
Tested on model: GT-43004P12016-1.0-T3						
Output	SC	264	30 min.	FS1	0.54→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
Output	O-L	264	Steady state	FS1	0.54→ 0.73	Total testing duration: 8.9 hours. No hazard. Normal operation at output overload to max. 11.2 A, then unit shut down. Damaged: - Temp: T1 coil: 103.6°C, T1 core: 95.1°C, U1 body: 98.7°C. Max. Voltage: 14.89 V
T1 Pin P1 to P2 (after Q6)	SC	264	30 min.	FS1	0.54→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
T1 Pin P1 to P2 (after Q6)	O-L	264	Steady state	FS1	0.54→ 0.72	Total testing duration: 8.9 hours. No hazard. Normal operation at output overload to max. 11.1 A, then unit shut down. Damaged: - Temp: T1 coil: 102.3°C, T1 core: 92.1°C, U1 body: 95.0°C. Max. Voltage: 14.89 V
Tested on model: GT-43004P12019-T3						
Output	SC	264	30 min.	FS1	0.54→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	
Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
Output	O-L	264	Steady state	FS1	0.54→ 0.83	Total testing duration: 8.7 hours. No hazard. Normal operation at output overload to max. 10.2 A, then unit shut down. Damaged: - Temp: T1 coil: 120.4°C, T1 core: 113.4°C, U1 body: 113.9°C. Max. Voltage: 19.08 V
T1 Pin P1 to P2 (after Q6)	SC	264	30 min.	FS1	0.54→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
T1 Pin P1 to P2 (after Q6)	O-L	264	Steady state	FS1	0.54→ 0.83	Total testing duration: 8.7 hours. No hazard. Normal operation at output overload to max. 10.3 A, then unit shut down. Damaged: - Temp: T1 coil: 120.6°C, T1 core: 110.8°C, U1 body: 114.4°C. Max. Voltage: 19.08 V
Tested on model: GT-43004P15024-T3						
Output	SC	264	30 min.	FS1	0.54→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -
Output	O-L	264	Steady state	FS1	0.54→ 0.85	Total testing duration: 9.1 hours. No hazard. Normal operation at output overload to max. 7.65 A, then unit shut down. Damaged: - Temp: T1 coil: 134.9°C, T1 core: 118.1°C, U1 body: 125.1°C. Max. Voltage: 23.54 V
T1 Pin P1 to P2 (after Q6)	SC	264	30 min.	FS1	0.54→ 0.01	Observation: Unit shut down. No hazards. Damaged: - Temp: - Max. Voltage: -

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
T1 Pin P1 to P2 (after Q6)	O-L	264	Steady state	FS1	0.54→0.85	Total testing duration: 9.1 hours. No hazard. Normal operation at output overload to max. 7.85 A, then unit shut down. Damaged: - Temp: T1 coil: 135.2°C, T1 core: 116.8°C, U1 body: 124.1°C. Max. Voltage: 23.54 V
<p>Supplementary information:</p> <p>SC: short circuit, OC: open circuit, O/L: overload, Temp: The maximum temperature of transformer (T1) winding, Max. Voltage: The maximum accessible voltage of DC output terminal during the fault condition test.</p> <p>During fault condition where the fuse opened, the test was repeated ten times to ensure no hazard.</p> <p>During fault condition where the fuse did not open, the test was repeated three times.</p> <p>The electric strength test performed after fault condition test and see appended table 5.2 for detailed test conditions.</p>						

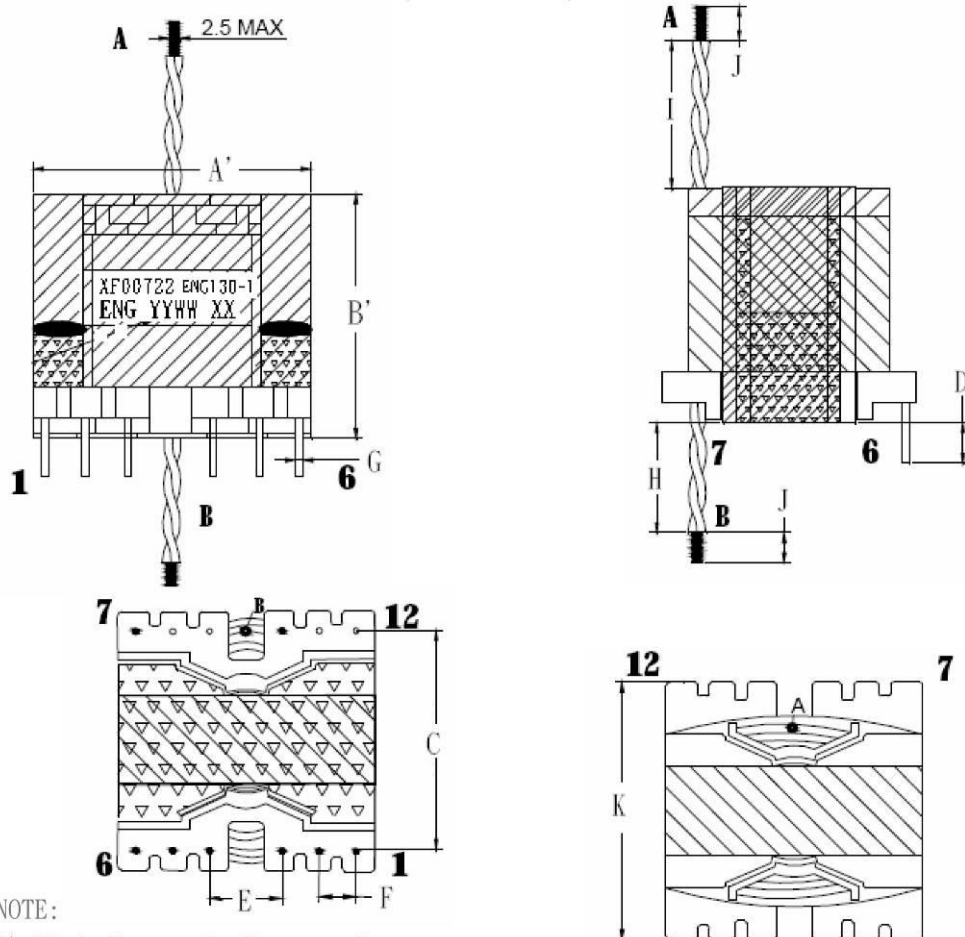
C.2		TABLE: transformers					P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
T1	Primary and secondary (RI)	572	368	3000Vac	6.0	7.4	0.4 mm / 2 layers
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T1	Secondary winding to core			3000Vac	10.2	10.2	--
T1	Primary winding to secondary winding			3000Vac	7.5	7.5	--
T1	Insulating tape around the outer side of transformer			3000Vac/2 layer	--	--	3 layers
Supplementary information:							
1. Each transformer model is identical in insulation construction including clearance and creepage except number of turns per coil.							
2. The core of transformer (T1) is considered as primary winding, the TIW is used in secondary winding of transformer (T1).							
3. The distances are measured along the insulating tape around the core of T1. 3 layers insulating tape are provided between the core of transformer (T1) and secondary winding / components.							
4. All types of transformer from all manufacturers listed in table 1.5.1 are tested.							

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Clause	Requirement + Test	Result - Remark	Verdict
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Specification of mains transformer T1 (XF00722)

1. OUTLINE DIMENSION: (UNIT: mm)



NOTE:

- 1) XX Indicate the Factory ID;
YY Provides production year;
WW Provides production week.
- 2) PIN8, 9, 11, 12 CUT OFF.
- 3) 單片CORE中柱需點膠, 與CORE接合處需點膠, PIN端需加工, CORE TAPE UL(Y) 2TS
包成品線包外圍膠帶2TS.
- 4) 研磨鐵芯裝頂部, 含浸前CORE須往PIN端推.
- 5) A, B均為飛線, TF TUBE長度均從CORE上量起, 成品後A線互絞在一起, B線互絞在一起.
- 6) 標籤貼於PIN1-6側線包上.

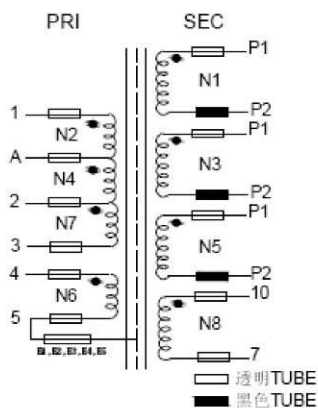
DIM	A'	B'	C	D	E	F	G	H	I	J	K
	MAX	MAX	±0.5	±0.5	±0.5	±0.5	±0.1	±2.0	±2.0	±1.0	
SPEC	34.5	26	30	3.5	7.4	5	0.8	25	35	5	35
DESCRIPTION	TRANSFORMER		Customer P/N				XF00722		DATE	2010/11/17	

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Clause	Requirement + Test	Result - Remark	Verdict
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Specification of mains transformer T1 (XF00722) (Cont.)

2. SCHEMATIC:



3. WINDING SEQUENCE:



4. WINDING TABLE

Winding No (組別)	Margin Tape (檔牆膠帶)	PIN (腳位)	Wire&Wire Copper (線徑X股數)	Turns (圈數)	Winding Tape (繞線方式)	Tape Layer (膠帶層次)	Tube (套管)
N1	0	P1~P2	0.45ΦX3P (三層絕緣線)	6Ts	密繞	1L	
E1	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N2	0	1~A	0.32ΦX3P	12Ts	密繞	1L	
E2	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N3	0	P1~P2	0.45ΦX3P (三層絕緣線)	6Ts	密繞	1L	
E3	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N4	0	A~2	0.32ΦX3P	12Ts	密繞	1L	
E4	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N5	0	P1~P2	0.45ΦX3P (三層絕緣線)	6Ts	密繞	1L	
E5	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N6	0	4~5	0.20ΦX2P	6Ts	疏繞	1L	
N7	0	2~3	0.32ΦX3P	12Ts	密繞	1L	
N8	0	10~7	0.20ΦX1P (三層絕緣線)	4Ts	疏繞	1L	
將A鍍錫互絞後用檔牆包住反折回線包						1L	

NOTE:

- 1.) E1~E5 為內銅箔(背膠). 從無線端起繞, 接引線0.3Φ穿TFL套管接於PIN5.
- 2.) N2, N4為密繞各佔一層, A為中間抽頭由PIN2-3頂部進出線. 待N8繞完互絞鍍錫用檔牆包住反折回線包再包1TS膠帶(注意整體線包不能超出BOBBIN底座)N6/N8為疏繞, N7為密繞一層.
- 3.) N1, N3, N5 均為密繞各佔一層, 且使用三層絕緣線繞制, 須先脫皮再鍍錫, P1, P2均為飛線, P1穿透明TUBE從PIN7-12側頂部進線, P2穿黑色TUBE從PIN8-9間凹槽出線, 飛線長度均從CORE上量起, 成品後P1互絞在一起, P2互絞在一起.

DESCRIPTION	TRANSFORMER	Customer P/N	XF00722	DATE	2010/11/17
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IEC 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
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Specification of mains transformer T1 (XF00722) (Cont.)

5. ELECTRICAL CHARACTERISTIC: (電器特性)

TEST CONDITION : TEMPERATURE AT 25 °C @1KHz, 0.3V

TEST POINT	INDUCTANCE(L)	LK	DCR	TEST INSTRUMENT
1~3	0.37mH±5%	4.0uH Max (short other pin)		WK---4235

1) HI-POT TEST:(WK-7620)

PRI. TO SEC. -----AC 3.00KV/(50/60Hz)/5mA/60sec.

PRI. TO CORE. -----AC 1.5KV/(50/60Hz)/5mA/60sec.

SEC. TO CORE. -----AC 1.5KV/(50/60Hz)/5mA/60sec.

2) AR.C TEST:(WK7620)

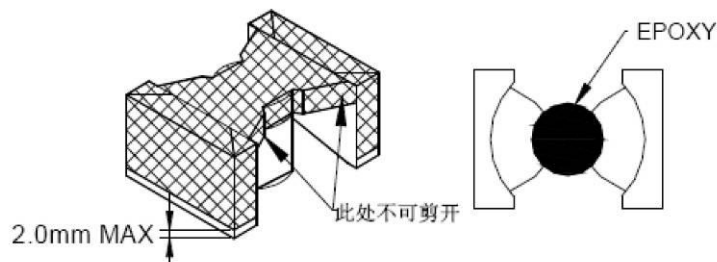
PRI. TO SEC. -----AC 3.00KV/(50/60Hz)/12mA/1sec.

3) INSULATION TEST:(DC 500V)

BETWEEN PRI. TO SEC. & PRI. TO CORE AND SEC. TO CORE THE
RESISTANCE MORE 100M ohm.

4) TERMINAL STRENGTH:

1.0 Kg on terminals for 30seconds.test the breakdown.



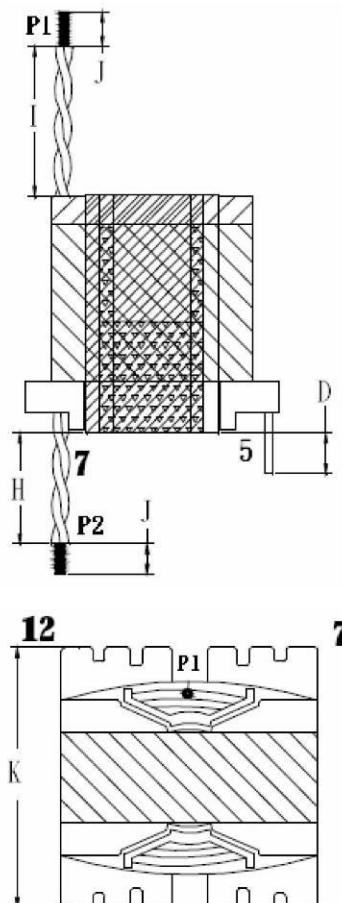
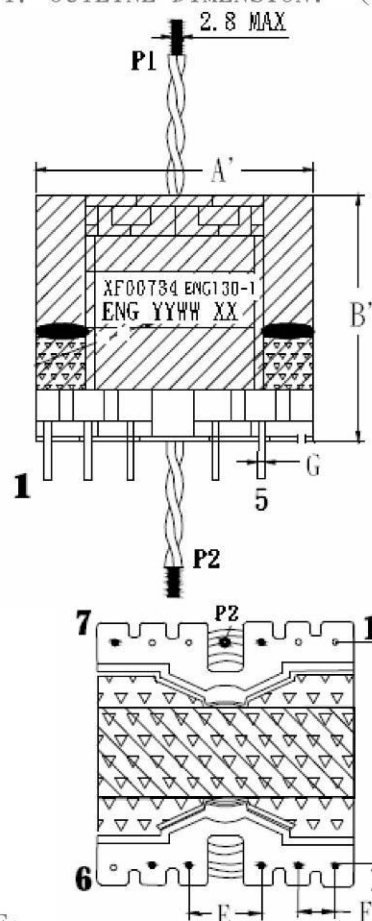
DESCRIPTION	TRANSFORMER	Customer P/N	XF00722	DATE	2010/11/17
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IEC 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
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Specification of mains transformer T1 (XF00734)

1. OUTLINE DIMENSION: (UNIT: mm)



NOTE:

- 1) XX Indicate the Factory ID;
YY Provides production year;
WW Provides production week.
- 2) PIN6, 8, 9, 11, 12 CUT OFF.
- 3) 單片CORE中柱需點膠, 與CORE接合處需點膠, PIN端需加工, CORE TAPE UL(Y) 2TS
包成品線包外圍膠帶2TS.
- 4) 研磨鐵芯裝頂部, 含浸前CORE須往PIN端推.
- 5) P1, P2均為飛線, TF TUBE長度均從CORE上量起, 成品後P1線互絞在一起, P2線互絞在一起.
- 6) 標籤貼於PIN1-6側線包上. (注意:P1和P2根據PCB實際要求整型)

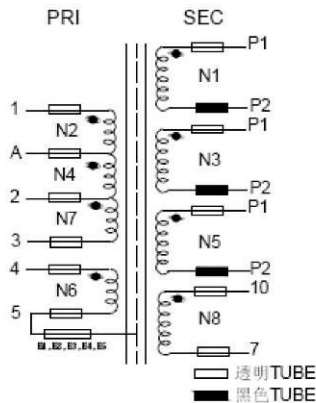
DIM	A'	B'	C	D	E	F	G	H	I	J	K
	MAX	MAX	±0.5	±0.5	±0.5	±0.5	±0.1	±2.0	±2.0	±1.0	MAX
SPEC	34.5	26	30	3.5	7.4	5	0.8	25	35	5	35
DESCRIPTION	TRANSFORMER		Customer P/N		XF00734		DATE		2011/2/10		

IEC 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
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Specification of mains transformer T1 (XF00734) (Cont.)

2. SCHEMATIC:



3. WINDING SEQUENCE:



4. WINDING TABLE

Winding No (組別)	Margin Tape (檔牆膠帶)	PIN (腳位)	Wire&Wire Copper (線徑X股數)	Turns (圈數)	Winding Tape (繞線方式)	Tape Layer (膠帶層次)	Tube (套管)
N1	0	P1~P2	0.40ΦX4P (三層絕緣線)	5Ts	密繞	1L	
E1	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N2	0	1~A	0.32ΦX3P	12Ts	密繞	1L	
E2	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N3	0	P1~P2	0.40ΦX4P (三層絕緣線)	5Ts	密繞	1L	
E3	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N4	0	A~2	0.32ΦX3P	12Ts	密繞	1L	
E4	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N5	0	P1~P2	0.40ΦX4P (三層絕緣線)	5Ts	密繞	1L	
E5	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N6	0	4~5	0.20ΦX2P	7Ts	疏繞	1L	
N7	0	2~3	0.32ΦX3P	12Ts	密繞	1L	
N8	0	10~7	0.20ΦX1P (三層絕緣線)	4Ts	疏繞	1L	
將A鍍錫互絞後用檔牆包住反折回線包						1L	

NOTE:

- E1~E5 為內銅箔(背膠). 從無線端起繞, 接引線0.3\$穿TFL套管接於PIN5.
- N2, N4為密繞各佔一層, A為中間抽頭由PIN2-3頂部進出線. 待N8繞完互絞鍍錫用檔牆包住反折回線包再包1TS膠帶(注意整體線包不能超出BOBBIN底座)N6/N8為疏繞, N7為密繞一層.
- N1, N3, N5 均為密繞各佔一層, 且使用三層絕緣線繞制, 須先脫皮再鍍錫, P1, P2均為飛線, P1穿透明TUBE從PIN7~12側頂部進線, P2穿黑色TUBE從PIN8~9間凹槽出線, 飛線長度均從CORE上量起, 成品後P1互絞在一起, P2互絞在一起.

DESCRIPTION	TRANSFORMER	Customer P/N	XF00734	DATE	2011/2/10
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Clause	Requirement + Test	Result - Remark	Verdict
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Specification of mains transformer T1 (XF00734) (Cont.)

5. ELECTRICAL CHARACTERISTIC: (電器特性)

TEST CONDITION : TEMPERATURE AT 25 °C @10kHz, 0.25V

TEST POINT	INDUCTANCE(L)	LK	DCR	TEST INSTRUMENT
1~3	0.45mH±5%	5.0uH Max (short other pin)		WK---4235

1) HI-POT TEST:(WK-7620)

PRI. TO SEC. -----AC 3.00KV/(50/60Hz)/5mA/60sec.

PRI. TO CORE. -----AC 1.5KV/(50/60Hz)/5mA/60sec.

SEC. TO CORE. -----AC 1.5KV/(50/60Hz)/5mA/60sec.

2) AR. C TEST:(WK7620)

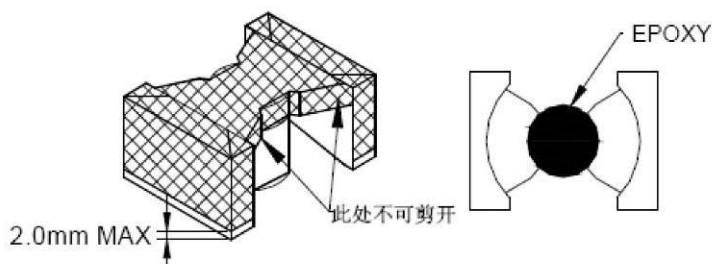
PRI. TO SEC. -----AC 3.00KV/(50/60Hz)/12mA/1sec.

3) INSULATION TEST:(DC 500V)

BETWEEN PRI. TO SEC. & PRI. TO CORE AND SEC. TO CORE THE
RESISTANCE MORE 100M ohm.

4) TERMINAL STRENGTH:

1.0 Kg on terminals for 30seconds.test the breakdown.



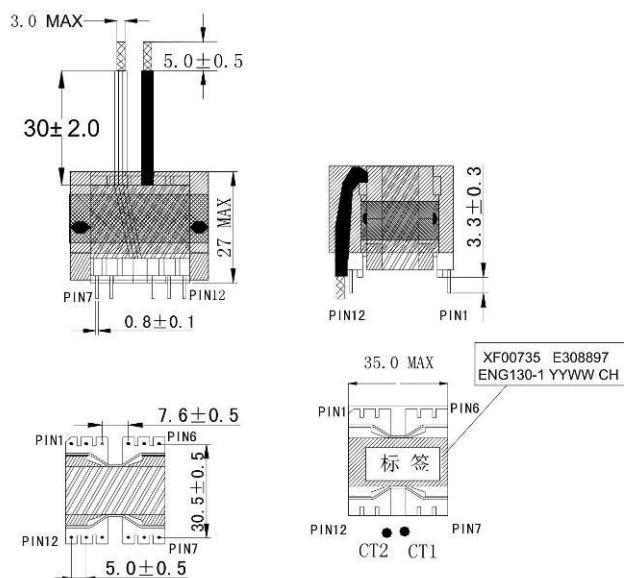
DESCRIPTION	TRANSFORMER	Customer P/N	XF00734	DATE	2011/2/10
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Clause	Requirement + Test	Result - Remark	Verdict
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Specification of mains transformer T1 (XF00735)

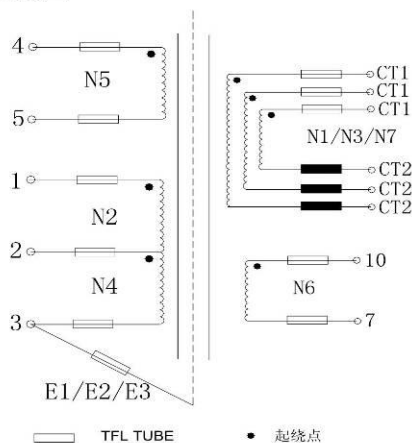
1、DIMENSION 尺寸 (Unit 单位:mm)



注意/NOTE:

- PIN6、8、9、11、12 CUT OFF;
- 气隙磁芯装在骨架顶部，平面磁芯用 29mm 的胶带背胶两层（如图 5/5）；磁芯中柱点 3300ZH，两磁芯接合处要点 3300A/B 黑胶，共 4 点（如图所示）；
- 用 12.5mm 胶带包 3TS 固定磁芯，组装后沿线包方向包 0.025T*5W*1.1TS 自粘铜箔，用 0.3mm 的引线加 TFL TUBE 接于 PIN5 脚，且包完铜箔后需沿线包用 20mm 胶带包 2TS；
(注：外铜箔与产品 PIN 端挡板的距离必须大于 5.0mm)
- 含浸后，将飞线成型折于 PIN 端（注：将飞线套管平齐折向 PIN 端时，不可拧绞，弯折处不可超出顶部磁芯），最后在飞线外面用 20mm 的胶带平齐顶部磁芯包 2TS 固定飞线；
- CT1/CT2 均为飞线，套管长度从顶部骨架处量起，飞线具体成型尺寸以 PCB 为准；
- 标签字尾朝 PIN1-6，喷印或贴于产品顶部“YY”代表年份，“WW”代表周期，“CH”代表厂商（如图）。

2. CONNECTION 电路连接图



	PART NO. / 产品型号	PAGE/页码
	XF 00735	2/5

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Clause	Requirement + Test	Result - Remark	Verdict
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Specification of mains transformer T1 (XF00735)

3. 绕线明细表/Winding: 顶部朝左绕制

序号 No.	BarrierTape 边墙胶带		Terminal 端子		Winding 绕线		Tape 绝缘 胶带	TUBE/套管		备注 Remark
	TOP	PIN	入 In	出 Out	WIRE 线	Ts	Ts	入 In	出 Out	
N1			CT1	CT2	$\Phi 0.5 \times 4P$ 三层绝缘线	4	2	14L	14L	1
E1			CU	3	T0.025*10 背胶	1.1	1		26L	3
N2			1	2	$\Phi 0.45 \times 2P$ 2UEW	24	1	18L	18L	2
E2			CU	3	T0.025*10 背胶	1.1	2		26L	3
N3			CT1	CT2	$\Phi 0.5 \times 4P$ 三层绝缘线	4	2	14L	14L	1
E3			CU	3	T0.025*10 背胶	1.1	1		26L	3
N4			2	3	$\Phi 0.45 \times 2P$ 2UEW	12	1	18L	18L	4
N5			4	5	$\Phi 0.3 \times 1P$ 三层绝缘线	9	1	23L	23L	5
N6			10	7	$\Phi 0.3 \times 1P$ 三层绝缘线	4	2	23L	23L	5
N7			CT1	CT2	$\Phi 0.5 \times 4P$ 三层绝缘线	4	1+2	14L	14L	1、6

注解:

1. N1, N3, N7 密绕一层, 绕线时 CT1 穿透明套管先从 PIN7-12 侧底部引出, 待绕完 N7 后折回顶部; (且飞线不可拧, 平齐折回顶部), CT2 穿黑色套管从 PIN7-12 侧顶部飞出; CT1、CT2 长度平齐顶部骨架量为 30mm ± 2 , 露锡部分为 5.0mm ± 1 ; 具体尺寸以 PCB 板为主;
2. N2 密绕两层;
3. E1, E2, E3 铜箔从无线端起绕, 用 0.35mm 的引线穿套管接于 PIN3;
4. N4 为密绕一层;
5. N5、N6 密绕在同一层, N5 靠 PIN 端密绕, N6 接着 N5 密绕;
6. 绕 N7 时, 待绕组绕完后先包 1TS 线包胶带, 绕后将 CT1 折回顶部, 再包 2TS 胶带.

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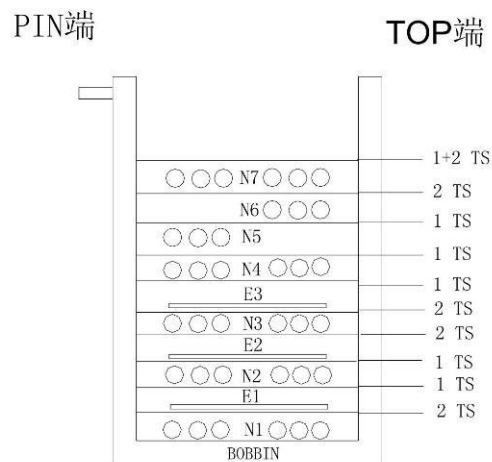
Clause	Requirement + Test	Result - Remark	Verdict
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Specification of mains transformer T1 (XF00735)

4.ELECTRICAL PERFORMANCE 电气参数

No. 序号	ITEM 条款	TERMINAL 端子	SPEC. 要求	REMARK 备注
1	Inductance 电感量	1-3	0.4mH $\pm 10\%$	30KHz, 1Vrms
2	Leakage Inductance 漏感	1-3(SHORT A,B)	15uH max	
3	DC Resistance 直流电阻(m Ω)	1-3	Ω max	20 $\pm 2^\circ\text{C}$
4	Withstanding Voltage 耐压	P--S	AC4.5KV(rms)/3s/2mA	60Hz
		S--C P--C	AC1.5KV(rms)/3s/2mA	
5	Insulation Resistance 绝缘电阻	Coil-Coil 线圈到线圈	100 M Ω MIN AT DC 500V	NF2511A

5. INTERNAL CONSTRUCTION 内部结构:



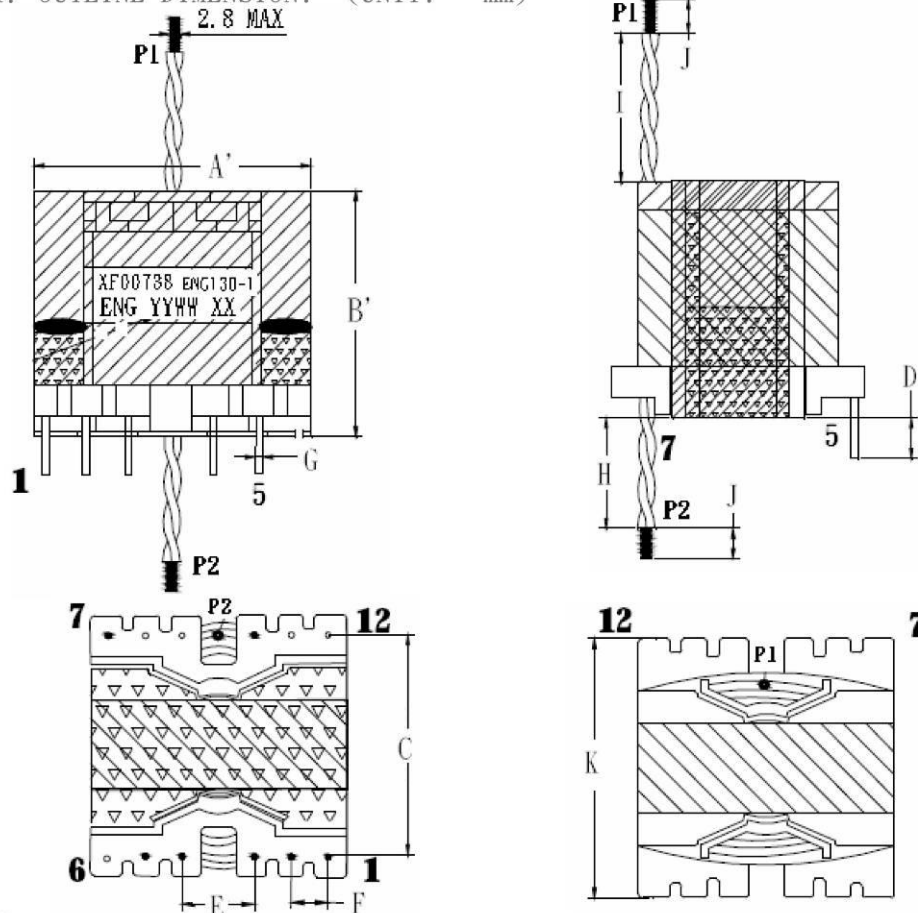
	PART NO. / 产品型号	PAGE/页码
	XF 00735	4/5

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Clause	Requirement + Test	Result - Remark	Verdict
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Specification of mains transformer T1 (XF00738)

1. OUTLINE DIMENSION: (UNIT: mm)



NOTE:

- 1) XX Indicate the Factory ID;
YY Provides production year;
WW Provides production week.
- 2) PIN6, 8, 9, 11, 12 CUT OFF.
- 3) 單片CORE中柱需點膠, 與CORE接合處需點膠, PIN端需加工, CORE TAPE UL(Y) 2TS
包成品線包外圍膠帶2TS.
- 4) 研磨鐵芯裝頂部, 含浸前CORE須往PIN端推.
- 5) P1, P2均為飛線, TF TUBE長度均從CORE上量起, 成品後P1線互絞在一起, P2線互絞在一起.
- 6) 標籤貼於PIN1-6側線包上. (注意:P1和P2根據PCB實際要求整型)

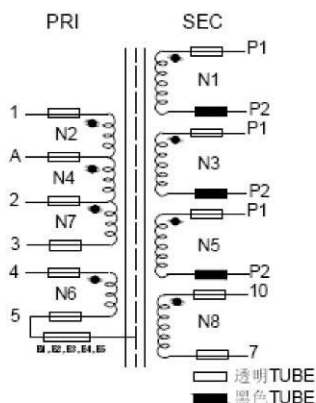
DIM	A'	B'	C	D	E	F	G	H	I	J	K
	MAX	MAX	±0.5	±0.5	±0.5	±0.5	±0.1	±2.0	±2.0	±1.0	MAX
SPEC	34.5	26	30	3.5	7.4	5	0.8	25	35	5	35
DESCRIPTION	TRANSFORMER		Customer P/N				XF00738		DATE	2011/2/10	

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Clause	Requirement + Test	Result - Remark	Verdict
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Specification of mains transformer T1 (XF00738) (Cont.)

2. SCHEMATIC:



3. WINDING SEQUENCE:



4. WINDING TABLE

Winding No (組別)	Margin Tape (檔牆膠帶)	PIN (腳位)	Wire&Wire Copper (線徑X股數)	Turns (圈數)	Winding Tape (繞線方式)	Tape Layer (膠帶層次)	Tube (套管)
N1	0	P1~P2	0.40ΦX4P (三層絕緣線)	5Ts	密繞	1L	
E1	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N2	0	1~A	0.32ΦX3P	12Ts	密繞	1L	
E2	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N3	0	P1~P2	0.40ΦX4P (三層絕緣線)	5Ts	密繞	1L	
E3	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N4	0	A~2	0.32ΦX3P	12Ts	密繞	1L	
E4	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N5	0	P1~P2	0.40ΦX4P (三層絕緣線)	5Ts	密繞	1L	
E5	0	~5	0.025*10mm	0.9Ts	背膠	1L	
N6	0	4~5	0.20ΦX2P	6Ts	疏繞	1L	
N7	0	2~3	0.32ΦX3P	12Ts	密繞	1L	
N8	0	10~7	0.20ΦX1P (三層絕緣線)	4Ts	疏繞	1L	
將A鍍錫互絞後用檔牆包住反折回線包						1L	

NOTE:

- 1.) E1~E5 為內銅箔(背膠). 從無線端起繞, 接引線0.3Φ穿TFL套管接於PIN5.
- 2.) N2, N4為密繞各佔一層, A為中間抽頭由PIN2-3頂部進出線. 待N8繞完互絞鍍錫用檔牆包住反折回線包再包1TS膠帶(注意整體線包不能超出BOBBIN底座)N6/N8為疏繞, N7為密繞一層.
- 3.) N1, N3, N5 均為密繞各佔一層, 且使用三層絕緣線繞制, 須先脫皮再鍍錫, P1, P2均為飛線, P1穿透明TUBE從PIN7~12側頂部進線, P2穿黑色TUBE從PIN8~9間凹槽出線, 飛線長度均從CORE上量起, 成品後P1互絞在一起, P2互絞在一起.

DESCRIPTION	TRANSFORMER	Customer P/N	XF00738	DATE	2011/2/10
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IEC 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
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Specification of mains transformer T1 (XF00738) (Cont.)

5. ELECTRICAL CHARACTERISTIC: (電器特性)

TEST CONDITION : TEMPERATURE AT 25 °C @10KHz, 0.25V

TEST POINT	INDUCTANCE(L)	LK	DCR	TEST INSTRUMENT
1~3	0.45mH±5%	4.0uH Max (short other pin)		WK---4235

1) HI-POT TEST:(WK-7620)

PRI. TO SEC. -----AC 3.00KV/(50/60Hz)/5mA/60sec.

PRI. TO CORE. -----AC 1.5KV/(50/60Hz)/5mA/60sec.

SEC. TO CORE. -----AC 1.5KV/(50/60Hz)/5mA/60sec.

2) AR.C TEST:(WK7620)

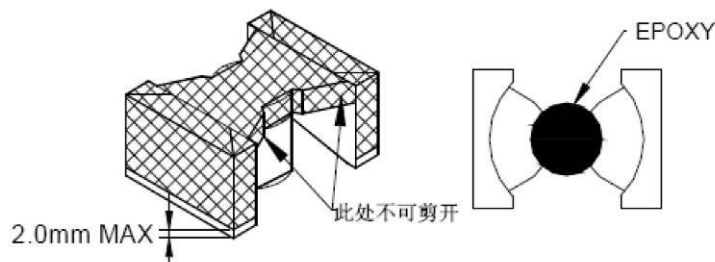
PRI. TO SEC. -----AC 3.00KV/(50/60Hz)/12mA/1sec.

3) INSULATION TEST:(DC 500V)

BETWEEN PRI. TO SEC. & PRI. TO CORE AND SEC. TO CORE THE
RESISTANCE MORE 100M ohm.

4) TERMINAL STRENGTH:

1.0 Kg on terminals for 30seconds.test the breakdown.



DESCRIPTION	TRANSFORMER	Customer P/N	XF00738	DATE	2011/2/10
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IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Information technology equipment – Safety –

PART 1: GENERAL REQUIREMENTS

Differences according to	EN 60950-1:2006/A11:2009/A1:2010/A12:2011
Attachment Form No.	EU_GD_IEC60950_1C_II
Attachment Originator	SGS Fimko Ltd
Master Attachment	Date 2011-08
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EN 60950-1:2006/A11:2009/A1:2010/A12:2011 – CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions		P
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		P
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		—
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for “one	No such device within the EUT.	N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		—
1.5.1	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC		N/A
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
1.7.2.1 (A12:2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.		N/A
	Zx Protection against excessive sound pressure from personal music players		N/A
	<p>Zx.1 General</p> <p>This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.</p> <p>A personal music player is a portable equipment for personal use, that: 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 to While the personal music player is connected to an external amplifier; or while the headphones or</p>		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <p>d) have a warning as specified in Zx.3; and e) not exceed the following:</p> <p>1) equipment provided as a package (player with its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1.</p> <p>For music where the average sound pressure (long term LAeq,T) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term LAeq,T) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA.</p> <p>For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.</p>		
	<p>Zx.3 Warning</p> <p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <p>the symbol of Figure 1 with a minimum height of 5 mm; and the following wording, or similar:</p> <p>"To prevent possible hearing damage, do not listen at high volume levels for long periods."</p>		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	 <p>Figure 1 – Warning label (IEC 60417-6044)</p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>		
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	<p>Zx.4.1 Wired listening devices with analogue input</p> <p>With 94 dBA sound pressure output LAeq,T, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV.</p> <p>This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control).</p> <p>NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p>		N/A
	<p>Zx.4.2 Wired listening devices with digital input</p> <p>With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA.</p> <p>This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p>		N/A
	<p>Zx.4.3 Wireless listening devices</p> <p>In wireless mode:</p> <p>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</p>		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	programme simulation noise,the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		
	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. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;		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. 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.		N/A
2.7.2	This subclause has been declared 'void'.		—
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		—
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6 0,75 ^{a)} Over 6 up to and including 10 (0,75) ^{b)} 1,0 Over 10 up to and including 16 (1,0) ^{c)} 1,5 In the conditions applicable to Table 3B delete the words "in some countries" in condition a).	The EUT is direct plug-in equipment.	N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	In NOTE 1, applicable to Table 3B, delete the second sentence.		
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 1,5 to 2,5 1,5 to 4 Delete the fifth line: conductor sizes for 13 to 16 A	No wiring terminal.	N/A
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).		N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0.1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.		N/A
Bibliography	Additional EN standards.		—

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—
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ZB ANNEX (NORMATIVE) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In Denmark, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	It shall be checked for proper certificate of these countries' certification before products are sold in the market.	N/A
1.2.13.14	In Norway and Sweden, for requirements see 1.7.2.1 and 7.3 of this annex.		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.1	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.	No such device within the EUT.	N/A
1.5.8	In Norway, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
1.5.9.4	In Finland, Norway and Sweden, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	<p>In Finland, Norway and Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</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> <p>In Norway and Sweden, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>"Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p>	It shall be checked for proper certificate of these countries' certification before products are sold in the market.	N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkople</p> <p>utstyr – og er tilkople</p> <p>et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.”</p> <p>Translation to Swedish:</p> <p>”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”</p>		N/A
1.7.5	<p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.</p> <p>For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>		N/A
2.2.4	In Norway, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In Norway, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.6.3.3	In the United Kingdom, the current rating of the circuit shall be taken as 13 A, not 16 A.		P
2.7.1	In the United Kingdom, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.13	In Finland, Norway and Sweden, there are additional requirements for the insulation; see 6.1.2.1 and 6.1.2.2 of this annex.		N/A
3.2.1.1	<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 250/400V 10A</p> <p>SEV 6533-2.1991 Plug Type 11 L+N 250V, 10A SEV 6534-2.1991 Plug Type 12 L+N+PE 250V 10A</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 230/400V 16A SEV 5933-2.1998 Plug Type 21 L+N 250V 16A SEV 5934-2.1998 Plug Type 23 L+N+PE 250V 16A</p>		N/A
3.2.1.1	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>		N/A
3.2.1.1	<p>In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2.5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>		N/A

IEC60950_1C - ATTACHMENT			
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/A
3.2.1.1	<p>In Ireland, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.</p>		N/A
3.2.4	<p>In Switzerland, for requirements see 3.2.1.1 of this annex.</p>		N/A
3.2.5.1	<p>In the United Kingdom, a power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>		N/A
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/A
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/A
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/A

IEC60950_1C - ATTACHMENT			
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/A
6.1.2.1 (A1:2010)	<p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> -Two layers of thin sheet material, each of which shall pass the electric strength test below, or -One layer having a distance through insulation of at least 0.4 mm, which shall pass the electric strength test below. <p>Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1.6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1.5 kV. 		N/A

IEC60950_1C - ATTACHMENT			
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/A
6.1.2.2	In Finland, Norway and Sweden, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	<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/A
7.3	In Norway and Sweden, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A
7.3	In Norway, for installation conditions see EN 60728-11:2005.		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

APPENDIX	National differences for Singapore			IEC 60950-1, 1st edition	—
The following is the national differences in accordance with safety authority website www.safety.org.sg/ , ref. Singapore Consumer Protection (Safety Requirements) - Information booklet - chapter 7 (page 23 - 26). Based on information by Singapore NCB – PSB Corp.					
7 SAFETY AUTHORITY’S REQUIREMENTS					
The Safety Authority monitors the safety of the controlled goods sold in Singapore by investigating all complaints, incidents and accidents reported to the authority. Experiences gained are translated into the Safety Authority’s Requirements. These requirements are to be fulfilled in addition to the applicable safety standards.					
Applicable to all electrical products					
No	Item	Requirement	Result - Remark	Verdict	
2	Controlled Goods incorporated with additional function	The additional function must be tested to its applicable safety standard.		P	
3	All appliances	All appliances must be tested to 230 VAC.	The voltage range includes 230Vac.	P	
4	Voltage selector (voltage mis-match test)	Appliance fitted with voltage selector shall be tested as follows: Connect appliance to 230 VAC mains with voltage selector switch to settings not suitable for operation at 230 VAC.	No voltage selector.	N/A	
5	Tropical condition test	All appliances (with tropical test requirements in applicable Standards) shall comply with the tropical condition test as stated in the relevant IEC Standards.		P	
6	Class I appliances (3-pin mains plug)	All Class I appliances must be fitted with 3-pin mains plugs complied with SS 145/SS 472 that are registered with the Safety Authority.	Check for proper certificate of these countries’ certification before products are sold in the market.	N/A	
7	Class II appliances (mains plug)	a) All Class II appliances must be fitted with 2-pin mains plug (Appendix T) complied with EN 50075. b) Class II appliances that are fitted with 3-pin mains plugs must use plugs that are complied with SS 145 and registered with the Safety Authority.	Check for proper certificate of these countries’ certification before products are sold in the market.	N/A	
8	Appliances rated ≥ 3 kW or connected to fixed wiring	Electric appliance ≥ 3kW must be connected to fixed wiring. All connection to fixed wiring must be in accordance with Code of Practice CP5.	Not exceed 3kW.	N/A	

IEC60950_1C - ATTACHMENT				
Clause	Requirement + Test		Result - Remark	Verdict
9	Detachable power cord set (consists of mains plug, mains cord and appliance connector)	Detachable power cord set must be listed in the test report critical component list.		N/A
10	Circuit diagrams	Circuit diagrams must be indicated with component's values for products tested to IEC 60065 and IEC 60950-1.		P
11	Circuit diagrams of electronic modules in electrical appliances	Circuit diagrams of the electronic modules in the electrical appliances must be provided.		P
12	Controlled goods likely to be treated as toy by children	Controlled goods, having an enclosure, which is shaped and decorated so that it is likely to be treated as a toy by children, shall not be accepted for certification and registration.	The shape and function are not considered for toy.	N/A
Applicable to AC adaptor				
14	3-pin AC adaptor (Appendix V)	Test report showing that the 3-pin complied with sub-clauses 12.1 & 12.3 of SS 246 must be submitted.		N/A
15	2-pin AC adaptor (Appendix V)	The 2-pin (Appendix T) shall comply with EN 50075		N/A
16	Detachable power supply cord set not supplied by Registered Supplier	Registered Supplier who is not supplying the detachable power supply cord set together with the AC Adaptor must provide written instruction to its customer on the type of approved detachable power cord set to use.	Check for proper certificate of these countries' certification before products are sold in the market.	N/A
Applicable to computer products				
17	CD/DVD ROM (used in personal computer)	Test certificate showing that CD/DVD ROM has complied with IEC 825 must be provided.	No CD/DVD ROM provided.	N/A
18	Modem Card (used in personal computer)	Modem card incorporated in the personal computer must be tested at set level (sub-clauses 5.1 & 6 of IEC 60950-1) or at component level.	No modem card provided.	N/A
Applicable to plasma/LCD display monitor				
37	Plasma/LCD display monitor with TV tuner	Plasma/LCD display monitor tested to IEC 60950-1 would require additional test to clauses 9 (related to antenna only), 10.1, 10.2, 10.3 and 12.5 of IEC 60065.	No TV tuner.	N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

APPENDIX	National differences for Japan		—
	IEC 60950-1, 1 st edition		
1.2.4.1	<p>Add the following new notes.</p> <p>Note: Even if the equipment is designed as Class I, the equipment is regarded as Class 0I equipment when 2-pin adaptor with earthing lead wire or cord set having 2-pin plug with earthing lead wire is provided or recommended.</p>		N/A
1.2.4.3A	<p>Add the following new clause.</p> <p>1.2.4.3A CLASS 0I EQUIPMENT</p> <p>Equipment having attachment plug without earthing blade, where protection against electric shock is achieved by:</p> <ul style="list-style-type: none"> - using BASIC INSULATION, and - providing externally an earth terminal or a lead wire for earthing in order to connect those conductive parts that might assume a HAZARDOUS VOLTAGES in the event of BASIC INSULATION fault to the PROTECTIVE EARTHING CONDUCTOR in the building wiring. <p>NOTE – Class 0I equipment may have a part constructed with Double Insulation or Reinforced Insulation circuit.</p>		N/A
1.3.2	<p>Add the following notes after first paragraph:</p> <p>Note 1 Transportable or similar equipment that are relocated frequently for intended usage should not be designed as Class I or Class 0I equipment unless it is intended to be installed by service personnel.</p> <p>Note 2 Considering wiring circumstance in Japan, equipment intended to be installed where the provision for earthing connection is unlikely should not be designed as Class I or Class 0I equipment unless it is intended to be installed by service personnel.</p>		N/A


IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.1	<p>Replace the first paragraph with the follows: Where safety is involved, components shall comply either with the requirements of this standard, with the safety aspects of the relevant JIS component standard, or IEC component standards in case there is no applicable JIS component standard is available. However, a component that falls within the scope of METI Ministerial ordinance No. 85 is properly used in accordance with its marked ratings, requirements of 1.5.4, 2.8.7 and 3.2.5 apply, and in addition, a cord connector of power supply cord set mating with appliance inlet complying with the standard sheet of IEC 60320-1, shall comply with relevant standard sheet of IEC 60320-1.</p> <p>Replace Note 1 with the following: Note 1 A JIS or an IEC component standard is considered relevant only if the component in question clearly falls within its scope.</p>		P
1.5.2	<p>Replace first sentence in the first dashed paragraph with the following:</p> <ul style="list-style-type: none"> - A component that has been demonstrated to comply with a JIS component standard harmonized with the relevant IEC component standard, or where such JIS component standard is not available, a component that has been demonstrated to comply with the relevant IEC component standard shall be checked for correct application and use in accordance with its rating. <p>Add a note after the first dashed paragraph as follows: Note 1 See 1.7.5A when Type C.14 appliance coupler rated 10 A per IEC 60320-1 is used with an equipment rated not more than 125 V and rated more than 10 A.</p> <p>Replace first sentence in the third dashed paragraph as follows:</p> <ul style="list-style-type: none"> - Where no relevant IEC component standard or JIS component standard harmonized with the relevant IEC component standard exists, or where components are used in circuits not in accordance with their specified rating, the components shall be tested under the conditions occurring in the equipment. 		P
1.7.1	<p>Replace fifth dashed paragraph with the following:</p> <ul style="list-style-type: none"> - manufacturer's or responsible company's name or trade-mark or identification mark; 		P

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5A	<p>Add the following new clause. after 1.7.5</p> <p>1.7.5A Appliance Coupler</p> <p>If appliance coupler according to IEC60320-1, C.14(rated current: 10A)is used in equipment whose rated voltage is less than 125V and rated current is over 10A, the following instruction or equivalent shall be described in the user instruction.</p> <p>"Use only designated cord set attached in this equipment"</p>	It shall be checked for proper certificate of these countries' certification before products are sold in the market.	N/A
1.7.12	<p>Replace first sentence with the following:</p> <p>Instructions and equipment marking related to safety shall be in Japanese.</p>	It shall be checked for proper certificate of these countries' certification before products are sold in the market.	N/A
1.7.17A	<p>Add the following new clause. after 1.7.17</p> <p>1.7.17A Marking for CLASS 0I EQUIPMENT</p> <p>For CLASS 0I EQUIPMENT, the following instruction shall be marked on the visible place of the mains plug or the main body:</p> <p>"Provide an earthing connection"</p> <p>Moreover, for CLASS 0I EQUIPMENT, the following or equivalent instruction shall be indicated on the visible place of the main body or written in the operating instructions:</p> <p>"Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains."</p>		N/A
2.6.3.2	<p>Add the following after 1st paragraph.</p> <p>This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.</p>		N/A
2.6.4.2	<p>Replace 1st paragraph with the following.</p> <p>Equipment required to have protective earthing shall have a main protective earthing terminal.</p> <p>For equipment with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal except for CLASS 0I EQUIPMENT providing separate main protective earthing terminal other than appliance inlet.</p>		N/A
2.6.5.4	<p>Replace 1st sentence with the following.</p> <p>Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:</p>		P

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.8A	<p>Add the following new clause. after 2.6.5.8A</p> <p>2.6.5.8A Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150V.</p> <p>For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip.</p> <p>CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external location where easily visible.</p>		N/A
3.2.3	<p>Add the following after Table 3A:</p> <p>Table 3A applies when cables complying JIS C 3662 or JIS C 3663 are used. In case of other cables, cable entries shall be so designed that a conduit suitable for the cable used can be fitted.</p>		N/A
3.2.5.1	<p>Add the following to the last of first dashed paragraph.</p> <p>Or mains cords shall be of the sheathed type complying with Appendix 1 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance.</p> <p>Add the following to the last of second dashed paragraph.</p> <p>Or mains cords shall be of the sheathed type complying with Appendix 1 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance..</p> <p>Delete 1) in Table 3B.</p>		N/A
3.3.4	<p>Add the following note to Table 3D:</p> <p>Note For cables other than those complying with JIS C 3662 or JIS C 3663; terminals shall be suitable for the size of the intended cables.</p>		N/A
3.3.7	<p>Add the following after the first sentence:</p> <p>This requirement is not applicable to the external earthing terminal of Class 0I equipment.</p>		N/A
4.3.4	<p>Add the following after the first sentence:</p> <p>This requirement also applies to those connections in Class 0I equipment, where CLEARANCE or CREEPAGE DISTANCES over BASIC INSULATION would be reduced to less than the values specified in 2.10.</p>		N/A
5.1.3	<p>Add a note after the first paragraph as follows:</p> <p>Note – Attention should be drawn to that majority of three-phase power system in Japan is of delta connection, and therefore, in that case, test is conducted using the test circuit from IEC 60990, figure 13.</p>		N/A

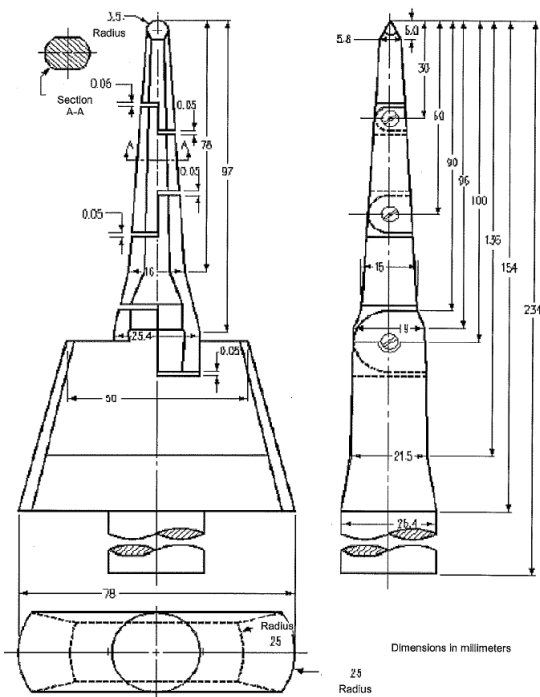
IEC60950_1C - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict																																						
5.1.6	<p>Replace Table 5A. as follows</p> <table> <tr> <th>Type of equipment</th><th>Terminal A of measuring instrument connected to:</th><th>Maximum TOUCH CURRENT mA r.m.s. 1)</th><th>Maximum PROTECTIVE CONDUCTOR CURRENT</th></tr> <tr> <td>ALL equipment</td><td>ALL equipment Accessible parts and circuits not connected to protective earthing</td><td>0,25</td><td>-</td></tr> <tr> <td>HAND-HELD</td><td>Equipment main protective earthing terminal (if any)</td><td>0,75</td><td>-</td></tr> <tr> <td>MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT)</td><td rowspan="3">CLASS I EQUIPMENT</td><td>3,5</td><td>-</td></tr> <tr> <td>STATIONARY, PLUGGABLE TYPE A</td><td>3,5</td><td>-</td></tr> <tr> <td>ALL other STATIONARY EQUIPMENT</td><td>3,5</td><td>-</td></tr> <tr> <td>- not subject to the conditions of 5.1.7</td><td></td><td></td><td></td></tr> <tr> <td>- subject to the conditions of 5.1.7</td><td></td><td>-</td><td>5 % of input current</td></tr> <tr> <td>HAND-HELD</td><td>Equipment main protective</td><td>0,5</td><td>-</td></tr> <tr> <td>Others</td><td>earthing terminal (if any) CLASS 0I EQUIPMENT</td><td>1.0</td><td>-</td></tr> </table> <p>1) If peak values of TOUCH-CURRENT are measured, the maximum values obtained by multiplying the r.m.s. values by 1,414.</p>	Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. 1)	Maximum PROTECTIVE CONDUCTOR CURRENT	ALL equipment	ALL equipment Accessible parts and circuits not connected to protective earthing	0,25	-	HAND-HELD	Equipment main protective earthing terminal (if any)	0,75	-	MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT)	CLASS I EQUIPMENT	3,5	-	STATIONARY, PLUGGABLE TYPE A	3,5	-	ALL other STATIONARY EQUIPMENT	3,5	-	- not subject to the conditions of 5.1.7				- subject to the conditions of 5.1.7		-	5 % of input current	HAND-HELD	Equipment main protective	0,5	-	Others	earthing terminal (if any) CLASS 0I EQUIPMENT	1.0	-		P
Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. 1)	Maximum PROTECTIVE CONDUCTOR CURRENT																																						
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- subject to the conditions of 5.1.7		-	5 % of input current																																						
HAND-HELD	Equipment main protective	0,5	-																																						
Others	earthing terminal (if any) CLASS 0I EQUIPMENT	1.0	-																																						
7.2	<p>Add the following after the paragraph:</p> <p>However, the separation requirements and tests of 6.2.1 a), b) and c) do not apply to a CABLE DISTRIBUTION SYSTEM if all of the following apply:</p> <ul style="list-style-type: none"> – the circuit under consideration is a TNV-1 CIRCUIT; and – the common or earthed side of the circuit is connected to the screen of the coaxial cable and to all accessible parts and circuits (SELV, accessible metal parts and LIMITED CURRENT CIRCUITS, if any); and – the screen of the coaxial cable is intended to be connected to earth in the building installation. 		N/A																																						
W.1	<p>Replace second and third sentence in the first paragraph with the following:</p> <p>This distinction between earthed and unearthed (floating) circuit is not the same as between CLASS I EQUIPMENT, CLASS 0I EQUIPMENT and CLASS II EQUIPMENT. Floating circuits can exist in CLASS I EQUIPMENT or CLASS 0I EQUIPMENT and earthed circuits in CLASS II EQUIPMENT.</p>		N/A																																						

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex JA	<p>Add a new annex JA with the following contents.</p> <p style="text-align: center;">Annex JA (normative) Document shredding machines</p> <p>Document shredding machines shall also comply with the requirements of this annex except those of STATIONARY EQUIPMENT used by connecting directly to an AC MAINS SUPPLY of three-phase 200V or more.</p> <p>JA.1 Markings and instructions</p> <p>The symbol  (JIS S 0101:2000, 6.2.4) and the following precautions for use shall be marked on readily visible part adjacent to document feed opening. The marking shall be clearly legible, permanent, and easily discernible;</p> <ul style="list-style-type: none"> - that use by an infants/children may cause a hazard of injury etc.; - that a hand can be drawn into the mechanical section for shredding when touching the document-slot; - that clothing can be drawn into the mechanical section for shredding when touching the document-slot; - that hairs can be drawn into the mechanical section for shredding when touching the document-slot; - in case of equipment incorporating a commutator motor, that equipment may catch fire or explode by spraying of flammable gas. <p>JA.2 Inadvertent reactivation</p> <p>Any safety interlock that can be operated by means of the test finger, Figure JA.1, is considered to be likely to cause inadvertent reactivation of the hazard.</p> <p>Compliance is checked by inspection and, where necessary, by a test with the test finger, Figure JA.1</p>		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>JA.3 Disconnection from the mains supply</p> <p>Document shredding machines shall incorporate an isolating switch complying with sub-clause 3.4.2 as the device disconnecting the power of hazardous moving parts. For this switch, two-position (single-use) switch or multi-position (multifunction) switch (e.g., slide switch) may be used.</p> <p>If two-position switch, the positions for "ON" and "OFF" shall be indicated in accordance with sub-clause 1.7.8. If multi-position switch, the position for "OFF" shall be indicated in accordance with sub-clause 1.7.8 and other positions shall be indicated with proper terms or symbols.</p> <p>Compliance is checked by inspection</p> <p>JA.4 Protection against hazardous moving parts</p> <p>Any warning shall not be used instead of the structure for preventing access to hazardous moving parts.</p> <p>Document shredding machines shall comply with the following requirements.</p> <p>Insert the test finger, Figure JA.1, into all openings in MECHANICAL ENCLOSURES without applying appreciable force. It shall not be possible to touch hazardous moving parts with the test finger. This consideration applies to all sides of MECHANICAL ENCLOSURES when the equipment is mounted as intended. Before testing with the test finger, remove the parts detachable without a tool.</p> <p>Insert the wedge-probe, Figure JA.2, into the document-slot. And, against all directions of openings, if straight-cutting type, a force of 45 N shall apply to the probe, and 90 N if cross-cutting type. In this case, the weight of the probe is to be factored into the overall applied force. Before testing with the wedge-probe, remove the parts detachable without a tool. It shall not be possible to touch any hazardous moving parts, including the shredding roller or the mechanical section for shedding, with the probe.</p>		N/A

IEC60950_1C - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
	 <p>Figure JA.1 Test finger</p>		

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Clause	Requirement + Test	Result - Remark	Verdict

Technical drawing of a wedge-probe showing three views: a perspective view, a side elevation, and a cross-section. The perspective view shows a long, thin wedge with a sloped top surface. Dimensions include 300, 100, 12, 30, 60, 100, and 50. A circular detail shows a cross-section with a diameter of 12. The side elevation shows a rectangular block with a sloped top surface. Dimensions include 33, 30, 27, 12, 50, 20, and 15. A circular detail shows a cross-section with a diameter of 12. The cross-section shows a wedge with a rounded tip. Dimensions include 2, 33, 30, 27, 12, 50, 20, and 15. A circular detail shows a cross-section with a diameter of 12. The drawing is labeled "Diameters in millimeters" and "See Note 1". A note indicates "Rounded to allow rotation about hinge pin (screw) in one direction".

(Details of the tip of wedge)

Distance from the tip (mm)	Thickness of probe (mm)
0	2
12	4
180	24



Note 1 - The thickness of the probe varies linearly, with slope changes at the respective points shown in the table.

Note 2 –The allowable dimensional tolerance of the probe is +/- 0.127 mm.

Figure JA.2 Wedge-probe



IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

APPENDIX	National differences for China		—
	IEC 60950-1, 2nd edition		
1.1.2	<p>GB 4943.1-2011 applies to equipment for use at altitudes not exceeding 5000m above sea level, primarily in regions with moderate or tropical climates.</p> <p>Amend the third dashed paragraph of 1.1.2 as:</p> <p>—equipment intended to be used in vehicles, on board ships or aircraft, at altitudes greater than 5000m;</p>	Altitude: 4000 m	N/A
1.4.5	<p>After the third paragraph, add a paragraph:</p> <p>If the equipment is intended for direct connection to an AC mains supply, the tolerances on RATED VOLTAGE shall be taken as +10%,-10% unless a wider tolerance is declared by the manufacturer. The first dash paragraph "-the RATED VOLTAGE is 230V single -phase or 400V three-phase, in which case the tolerance shall be taken as +10% and -10%" of IEC 60950-1:2005 is deleted in GB 4943.1-2011</p>		P
1.4.12.1	<p>Tma in clause 1.4.12.1 amended as: Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater.</p> <p>Add note 1: For equipment not to be operated at tropical climatic conditions, Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater.</p> <p>Add note 2: For equipment is to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration.</p>		P
1.5. 2	Add a note behind the first break off section in Clause 1.5.2: A component used shall comply with related requirements corresponding altitude of 5000m.		N/A
1.7	Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.	It shall be checked for proper certificate of these countries' certification before products are sold in the market.	N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.1	<p>Based on the AC mains supply of China, the RATED VOLTAGE should be 220V (single phase) or 380V (three-phases) for single rated voltage, for RATED VOLTAGE RANGE, it should cover 220V or 380V (three-phases), for multiple RATED VOLTAGES, one of them should be 220V or 380V (three-phases) and set on 220V or 380V (three-phases) when manufactured.</p> <p>And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz.</p>		P
1.7.2.1	<p>Add requirements of warning for equipment intended to be used at altitudes not exceeding 2000m or at non-tropical climate regions:</p> <p>For equipment intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place.</p> <p>"Only used at altitude not exceeding 2000m."</p>  <p>For equipment intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place.</p> <p>"Only used in not-tropical climate regions."</p>  <p>If only the symbol used, the explanation of the symbol shall be contained in the instruction manual.</p> <p>The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used.</p>	<p>Altitude: 4000 m.</p> <p>The marking label shall be checked for proper certificate of these countries' certification before products are sold in the market.</p>	N/A
2.7.1	<p>Amended the first paragraph as:</p> <p>Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except special provisions. And the protective device shall meet the requirement of Clause 5.3.</p> <p>Delete note of Clause 2.7.1.</p>		P

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.2	<p>First section of Clause 2.9.2 amended as two sections:</p> <p>Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature 40 ± 2 °C and a relative humidity of (93 ± 3) %. During this conditioning the component or subassembly is not energized.</p> <p>For equipment not to be operated at tropical climatic conditions, Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of (93 ± 3) %. The temperature of the air, at all places where samples can be located, is maintained within 2 °C of any convenient value between 20 °C and 30 °C such that condensation does not occur.</p> <p>Due to pretreatment of equipment operated at high altitude area is humidity conditioning withstand hot shock, specific requirements are to be considered.</p> <p>Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.</p>		P
2.10.3.1	<p>Amend the third paragraph of Clause 2.10.3.1 to be:</p> <p>These requirements apply for equipment to be operated up to 2000 m above sea level. For equipment to be operated at more than 2000 m above sea level and up to 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of IEC 60664-1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0.1 mm increment.</p>	<p>Altitude: 4000 m. Multiple factor is 1.29. It shall be checked for proper certificate of these countries' certification before products are sold in the market.</p>	N/A
2.10.3.3& 2.10.3.4	Add "(applicable for altitude up to 2000m)" in header of Table 2K, 2L and 2M.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.4	<p>Add a new section above Table 2K and in Clause 2.10.3.4:</p> <p>Minimum CLEARANCES determined by above rules apply for equipment to be operated up to 2000m above sea level. For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1 (IEC 60664-1) . For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T16935.1.</p>	<p>Altitude: 4000 m. Multiple factor is 1.29. It shall be checked for proper certificate of these countries' certification before products are sold in the market.</p>	N/A
3.2.1.1	<p>Add a paragraph before the last paragraph: Plugs connected to AC mains supply shall comply with GB 1002 or GB 1003 or GB/T 11918 as applicable.</p>		N/A
4.2.8	<p>Clause 4.2.8 cathode ray tubes quoted Clause 18 of GB8898-2011.</p> <p>Delete note of Clause 4.2.8.</p>		N/A
Annex E	<p>Last section of Annex E amended as: For comparison of winding temperatures determined by the resistance method of this annex with the temperature limits of Table 4B, 35 °C shall be added to the calculated temperature rise. And add note: for equipment not to be operated at tropical climatic conditions, 25 °C shall be added to the calculated temperature rise to compare with the temperature of Table 4B.</p>		P
Annex G.6	<p>Change the second section of Clause G.6 to be: For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.</p>		P
Annex BB (informative)	<p>Amended as :</p> <p>The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Annex DD (normative)	<p>Added annex DD: Instructions for the new safety warning labels.</p> <p>DD.1 Altitude warning label</p>  <p>Meaning of the label: Evaluation for apparatus only based on altitude not exceeding 2000m, therefore it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used at altitude above 2000m.</p> <p>DD.2 Climate warning label</p>  <p>Meaning of the label: Evaluation for apparatus only based on temperate climate condition, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used in tropical climate region.</p>	It shall be checked for proper certificate of these countries' certification before products are sold in the market.	N/A
Annex EE (informative)	<p>Added annex EE:</p> <p>Illustration relative to safety explanation in normative Chinese, Tibetan, Mongolian, Zhuang Language and Uighu.</p>	It shall be checked for proper certificate of these countries' certification before products are sold in the market.	N/A
Other amendments	In accordance with the relevant CTL decisions and the amendments of IEC 60950-1, the specific requirements or mistakes in IEC standard are corrected or editorially modified in this part, Including clause 1.7, 2.1.1.7, 2.9.2, Table 2H, Figure 2H, F.8, F.9, M.3 and Annex U.		P

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Quoting standards and reference documents	<p>The principles of quoting and referring to other standards in Annex P and reference documents of IEC 60950-1 are as follows:</p> <p>If the date of the reference document is given, only that edition applies, excluding any subsequent corrigenda and amendments. However, parties to agreements based on this part are encouraged to investigate the possibility of applying the most recent editions of the reference documents. For undated references, the latest edition of the referenced document applies, including any corrigenda and amendments.</p> <p>For the usage of international standards in Chinese national standards and industry standards is various, in the aim of achieving easy operation and based on the requirements of GB/T 1.1 and GB/T 20000.2, when quoting an entire international standard in the normative quoting files and reference documents of Annex P of this part, the principles of quotation are as follows:</p> <ul style="list-style-type: none"> - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted; - If the date of the national standard or industry standard is not given, the latest edition of the standard applies; - The national standard or industry standard number, corresponding international standard number and the consistency level code should be identified in parentheses behind the listed national standard or industry standard. <p>When quoting several chapters or clauses of the international standard, the principles of quotation are as follows:</p> <ul style="list-style-type: none"> - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted. 		P
	<p>Meanwhile, in order to retain the relevant information on international standards, informative annex CC is increased, which gives the table about the comparison of the normative quoting files and reference documents in IEC 60950-1: 2005 and GB 4943.1-2011.</p>		P

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

APPENDIX	National differences for Australia and New Zealand IEC 60950-1, 2nd edition		
	ANNEX ZZ (normative) Variations to IEC 60950-1, ED.2.0 (2005) for application in Australia and New Zealand		
ZZ1	Introduction This Annex sets out variations and additional requirements to cover issues which have not been addressed by the International Standard. These variations indicate national variations for purposes of the IEC EE CB Scheme and will be published in the IEC EE CB Bulletin.		-
ZZ2	Variations The following variations apply to the source text:		-
1.2	Between the definitions for 'Person, service' and 'Range, rated frequency' insert the following: POTENTIAL IGNITION SOURCE 1.2.12		P
1.2.12.201	Insert a new Clause 1.2.12.201 after Clause 1.2.12.15 as follows: 1.2.12.201 POTENTIAL IGNITION SOURCE: Possible fault which can start a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s current under normal operating conditions exceeds 15 VA. Such a faulty contact or interruption in an electrical connection includes those which may occur in CONDUCTIVE PATTERNS on PRINTED BOARDS. NOTE 201 An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE. NOTE 202 This definition is from AS/NZS 60065:2003.		P
1.5.1	Add the following to the end of first paragraph: "or the relevant Australian/New Zealand Standard". In NOTE 1, add the following after the word "standard": "or an Australian/New Zealand Standard".		P
1.5.2.	Add the following to the end of first and third dash items: "or the relevant Australian/New Zealand Standard".		P

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Clause	Requirement + Test	Result - Remark	Verdict																	
3.2.5.1	<p><i>Modify</i> Table 3B as follows:</p> <p><i>Delete</i> the first four rows and replace with the following:</p> <table><tr><th rowspan="2">RATED CURRENT of equipment A</th><th colspan="2">Minimum conductor sizes</th></tr><tr><th>Nominal cross-sectional area mm²</th><th>AWG or kcmil [cross-sectional area in mm²] see Note 2</th></tr><tr><td>Over 0.2 up to and including 3</td><td>0,5^{a)}</td><td>18 [0,8]</td></tr><tr><td>Over 3 up to and including 7.5</td><td>0,75</td><td>16 [1,3]</td></tr><tr><td>Over 7.5 up to and including 10</td><td>(0,75)^{b)} 1,00</td><td>16 [1,3]</td></tr><tr><td>Over 10 up to and including 16</td><td>(1,0)^{c)} 1,5</td><td>14 [2]</td></tr></table> <p><i>Delete</i> NOTE 1.</p> <p><i>Replace</i> footnote^{a)} with the following:</p> <p>¹⁾ This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm² three-core supply flexible cords are not permitted; see AS/NZS 3191).</p>	RATED CURRENT of equipment A	Minimum conductor sizes		Nominal cross-sectional area mm ²	AWG or kcmil [cross-sectional area in mm ²] see Note 2	Over 0.2 up to and including 3	0,5 ^{a)}	18 [0,8]	Over 3 up to and including 7.5	0,75	16 [1,3]	Over 7.5 up to and including 10	(0,75) ^{b)} 1,00	16 [1,3]	Over 10 up to and including 16	(1,0) ^{c)} 1,5	14 [2]		N/A
RATED CURRENT of equipment A	Minimum conductor sizes																			
	Nominal cross-sectional area mm ²	AWG or kcmil [cross-sectional area in mm ²] see Note 2																		
Over 0.2 up to and including 3	0,5 ^{a)}	18 [0,8]																		
Over 3 up to and including 7.5	0,75	16 [1,3]																		
Over 7.5 up to and including 10	(0,75) ^{b)} 1,00	16 [1,3]																		
Over 10 up to and including 16	(1,0) ^{c)} 1,5	14 [2]																		
4.1.201	<p><i>Insert</i> a new Clause 4.1.201 after Clause 4.1 as follows:</p> <p>4.1.201 Display devices used for television purposes</p> <p>Display devices which may be used for television purposes, with a mass of 7 kg or more, shall comply with the requirements for stability and mechanical hazards, including the additional stability requirements for television receivers, specified in AS/NZS 60065.</p>		N/A																	
4.3.6	<p><i>Delete</i> the third paragraph and replace with the following:</p> <p>Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.</p>		N/A																	
4.3.13.5	<p><i>Add</i> the following to the end of the first paragraph:</p> <p>“, or AS/NZS 2211.1”.</p>		N/A																	
4.7	<p><i>Add</i> the following new paragraph to the end of the clause:</p> <p>“For alternate tests refer to Clause 4.7.201.”</p>		P																	

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.201	<p><i>Insert a new Clause 4.7.201 after Clause 4.7.3.6 as follows:</i></p> <p>4.7.201 Resistance to fire – Alternative tests</p> <p>4.7.201.1 General</p> <p>Parts of non-metallic material shall be resistant to ignition and spread of fire.</p> <p>This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the apparatus, or the following:</p> <p>(a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.</p> <p>(b) The following parts which would contribute negligible fuel to a fire:</p> <ul style="list-style-type: none"> - small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; - small electrical components, such as capacitors with a volume not exceeding 1,750 mm³, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10. <p>NOTE In considering how to minimize propagation of fire and what "small parts" are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another.</p> <p>Compliance shall be checked by the tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5.</p> <p>For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5.</p> <p>The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use.</p> <p>These tests are not carried out on internal wiring.</p>	The equipment complies with the requirements of IEC 60950-1. Alternative test methods are not considered.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Cont.	<p>4.7.201.2 Testing of non-metallic materials</p> <p>Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C.</p> <p>Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.</p> <p>4.7.201.3 Testing of insulating materials</p> <p>Parts of insulating material supporting POTENTIAL IGNITION SOURCES shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C.</p> <p>The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection.</p> <p>NOTE Contacts in components such as switch contacts are considered to be connections.</p> <p>For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test shall not be tested.</p> <p>The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:</p>		N/A

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Clause	Requirement + Test		Result - Remark	Verdict
Cont.	Clause of AS/NZS 60695.11.5	Change		N/A
	9 Test procedure			
	9.2 Application of needle-flame	<i>Replace</i> the first paragraph with: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. If possible the flame shall be applied at least 10 mm from a corner <i>Replace</i> the first paragraph with: The duration of application of the test flame shall be 30 s ±1 s.		
	9.3 Number of test specimens	<i>Replace</i> with: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.		
	11 Evaluation of test results	<i>Replace</i> with: The duration of burning (t _b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.		
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the sample tested was not thicker than the relevant part.			
4.7.201.4 Testing in the event of non-extinguishing material				
If parts, other than enclosures, do not withstand the glow wire tests of 4.7.201.3, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 4.7.201.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested.				

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Clause	Requirement + Test	Result - Remark	Verdict
Cont.	<p>NOTE 1 - If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing.</p> <p>NOTE 2 - If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing.</p> <p>NOTE 3 - Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.</p> <p>4.7.201.5 Testing of printed boards</p> <p>The base material of printed boards shall be subjected to the needle-flame test of Clause 4.7.201.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a POTENTIAL IGNITION SOURCE.</p> <p>The test is not carried out if the —</p> <ul style="list-style-type: none"> - Printed board does not carry any POTENTIAL IGNITION SOURCE; - Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or - Base material of printed boards, on which the available apparatus power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. 		N/A
	<p>Compliance shall be determined using the smallest thickness of the material.</p> <p>NOTE – Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximise the apparent power for more than 2 min when the circuit supplied is disconnected.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2	For Australia only, <i>delete</i> the first paragraph and Note, and <i>replace</i> with the following: In Australia only, compliance with 6.2.2 shall be checked by the tests of both 6.2.2.1 and 6.2.2.2.		N/A
6.2.2.1	For Australia only, <i>delete</i> the first paragraph including the Notes, and <i>replace</i> with the following: In Australia only, the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator reference 1 of Table N.1. The interval between successive impulses is 60 s and the initial voltage, U_c , is: (i) for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and (ii) for 6.2.1 b) and 6.2.1 c): 1.5 kV. NOTE 201 – The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 – The value of 2.5 kV for 6.2.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A
6.2.2.2	For Australia only, <i>delete</i> the second paragraph including the Note, and <i>replace</i> with the following. In Australia only, the a.c. test voltage is: (i) for 6.2.1 a): 3 kV; and (ii) for 6.2.1 b) and 6.2.1 c): 1.5 kV. NOTE 201 – Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 – The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
7.3	<i>Add</i> the following before the first paragraph: Equipment providing functions that fall only within the scope of AS/NZS 60065 and that incorporate a PSTN interface, are not required to comply with this Clause where the only ports provided on the equipment, in addition to a coaxial cable connection and a PSTN interface, are audio or video ports and analogue or data ports not intended to be used for telecommunications purposes.		N/A
Annex P	<i>Add</i> the following Normative References: AS/NZS 3191, Electric flexible cords AS/NZS 3112, Approval and test specification—Plugs and socket-outlets		P

[illegible]

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Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1 U.S.A. NATIONAL DIFFERENCES

Information technology equipment – Safety –

Part 1: General requirements

Differences according to.....: UL 60950-1-07

Attachment Form No......: US_ND_IEC60950_1C

Attachment Originator: TÜV SÜD Product Service GmbH

Master Attachment.....: Date (2012-08)

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	Special national conditions		
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2.		P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC.		N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.		N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.		N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and		P
	- If it is part of a range that extends into the Table 2 "Normal Operating Conditions."		P
	A voltage rating is not to be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		P

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC are marked with the voltage rating and "Class 2" or equivalent.		N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable.		N/A
2.6.3.3	Modify first column on Table 2D to "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection.	Considered.	P
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC.		N/A
3.2.1	Attachment plugs of power supply cords are rated not less than 125 per cent of the rated current of the equipment.		N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment comply with special earthing, wiring, marking and installation instruction requirements.		N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
3.2.5	Power supply cords are no longer than 4.5 m in length.		N/A
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.		N/A
	Flexible power supply cords are compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
3.2.9	Permanently connected equipment has a suitable wiring compartment and wire bending space.		N/A
3.3	Wiring terminals and associated spacing for field wiring connections comply with CSA C22.2 No. 0.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are		N/A
	- rated 125 per cent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7).		N/A
3.3.5	Revise first column of Table 3E to "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,		N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A)		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position.		N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
4.3.13.5	Equipment with lasers meets the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.		N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less.		N/A
	For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N/A
Annex H	Equipment that produces ionizing radiation complies with U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Other National Differences		
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements.		P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply.		N/A
	This maximum operating voltage includes consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.		N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.		N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more reduce the risk of injury due to the implosion of the CRT.		N/A
4.3.2	Equipment with handles complies with special loading tests.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals comply with a special touch current measurement tests.		N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are overloaded.		P
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary		P
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger.		N/A
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements.		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

APPENDIX	National differences for Canada		—
IEC 60950-1, 2 nd edition; Am 1:2009			
SPECIAL NATIONAL CONDITIONS			
The following is a summary of the key national differences based on national regulatory requirements, such as the Canadian Electrical Code (CEC) Part and the Canadian Building Code, which are referenced in legislation and which form the basis for the rules and practices followed in electrical and building installations			
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Unit was evaluated according to IEC 60950-1. The requirements have to be checked during national approval.	P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.		N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		P
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC shall be marked with the voltage rating and “Class 2” or equivalent. Marking shall be located adjacent to the terminals and shall be visible during wiring.		N/A
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	<p>Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.</p> <p>Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.</p>	Considered.	P
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.		N/A
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
3.2.5	<p>Power supply cords are required to be no longer than 4.5 m in length.</p> <p>Flexible power supply cords are required to be compatible with Tables 11 and 12 of the CEC and Article 400 of the NEC.</p>		N/A
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
3.3	Wiring terminals and associated spacing for field wiring connections shall comply with CSA C22.2 No. 0.		N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for Canadian/US wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).		N/A
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
4.3.13.5	Equipment with lasers is required to meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.		N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.		N/A
	OTHER DIFFERENCES The following key national differences are based on requirements other than national regulatory requirements		—

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.1	<p>Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include:</p> <p>attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.</p>	Critical components are IEC/EN/UL certified. See list of critical components. There may be additional requirements for components in Canada.	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage shall include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.		N/A
2.6.3.3	The current rating of the circuit shall be taken as 20 A not 16 A		P
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.		P
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.		N/A
4.3.2	Equipment with handles is required to comply with special loading tests.		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded. During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.		P
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.		N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

APPENDIX	National differences for Korea IEC 60950-1, 2nd edition; Am 1:2009		—
1.5.101	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).	To be evaluated when submitted for the national approval.	—
8	EMC The apparatus shall comply with the relevant CISPR standards.	To be evaluated when submitted for the national approval.	—