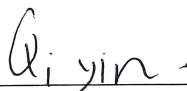


TEST REPORT

Applicant : SHENZHEN GOSPELL DIGITAL TECHNOLOGY CO., LTD.
Address : E. of 5F, Zone A, 1st Ind., Area, Fenghuanggang, Sou BaoTian 1Rd., Xixiang,
Str., Bao An District, Shenzhen, Guangdong 518102, P.R.China
Manufacturer : SHENZHEN GOSPELL DIGITAL TECHNOLOGY CO., LTD.
Address : E. of 5F, Zone A, 1st Ind., Area, Fenghuanggang, Sou BaoTian 1Rd., Xixiang,
Str., Bao An District, Shenzhen, Guangdong 518102, P.R.China
Product Name : POWER OVER ETHERNET INJECTOR
Trade Mark : Gospower
Model No. : G0720-xxx-yyy, G0720-240-zzz, 740-64214-001 (For definition of variables
"xxx", "yyy" and "zzz", see table A on page 5 for details)
Ratings : Input : 100-240V ~, 50/60Hz, 0.75A MAX
Output : See table B on page 5 and 6 for details.
Standard : Audio/video, information and communication technology equipment
Part 1: Safety requirements
EN 62368-1:2014+A11:2017
Date of Receiver : March 12, 2020
Date of Test : March 12, 2020 to March 21, 2020
Date of Issue : April 07, 2020
Test Report Form No : NTCS-IEC62368-1-A1-E
Test Result : Pass *
This Test Report is Issued Under the Authority of:

Compiled by

Approved by: Authorized Signer


Qi yin/ Engineer


Ryan Luo/ Authorized Signatory

***Remarks:**

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of Dongguan Nore Testing Center Co., Ltd. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Revision History of This Test Report

[illegible]

Copy of marking plate: (Representative)

SHENZHEN GOSPELL DIGITAL TECHNOLOGY CO.,LTD.

POWER OVER ETHERNET INJECTOR/POE电源

MODEL/型号: G0720-480-050

INPUT/输入: 100-240V ~ 50/60Hz 0.75A MAX

OUTPUT/输出: 48.0V $\overline{\text{---}}$ 0.5A 24.0W

+ (1, 2) (4, 5) pins, - (3, 6) (7, 8) pins

P/N: G0720-480-050

I. T. E. POWER SUPPLY

WARNING: RISK OF ELECTRIC SHOCK DO NOT OPEN

ATTENTION: RISQUE D'ELECTROCUTION NE PAS OUVRIR

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

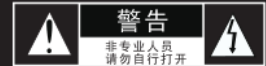
(1) This device may not cause harmful interference, and

(2) This device must accept any interference received,
including interference that may cause undesired operation.

MADE IN CHINA/中国制造

制造商: 高斯宝电气技术有限公司

Gospower



YYWWXXXXX

Remarks:

1. The above label is a draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.
2. The CE marking and WEEE symbol should be at least 5.0mm and 7.0mm respectively in height.
3. Marking label of all models are identical to each other except for model number and output rating.
4. The importer information (Name and Address) and manufacturer information (Name and Address) should be marked in product when this product import to European marketing.

TEST ITEM PARTICULARS:	
Classification of use by.....:	☒ Ordinary person ☐ Instructed person ☐ Skilled person ☒ Children likely to be present
Supply Connection	☒ AC Mains ☐ DC Mains ☐ External Circuit - not Mains connected - ☐ ES1 ☐ ES2 ☐ ES3
Supply % Tolerance	☒ +10%/-10% ☐ +20%/-15% ☐ +____%/ -____% ☐ None
Supply Connection – Type	☒ pluggable equipment type A - ☐ non-detachable supply cord ☒ appliance coupler ☐ direct plug-in ☐ mating connector ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☐ other:
Considered current rating of protective device as part of building or equipment installation.....:	16 A Installation location: ☒ building; ☐ equipment
Equipment mobility	☒ movable ☐ hand-held ☐ transportable ☐ stationary ☐ for building-in ☐ direct plug-in ☐ rack-mounting ☐ wall-mounted
Over voltage category (OVC)	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other: _____
Class of equipment	☒ Class I ☐ Class II ☐ Class III
Access location	☐ restricted access location ☒ N/A
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maxium operating ambient:	40°C
IP protection class	☒ IPX0 ☒ IP____
Power Systems	☒ TN ☐ TT ☒ IT - _230_ V _{L-L}
Altitude during operation (m)	☐ 2000 m or less ☒ 5000 m
Altitude of test laboratory (m)	☒ 2000 m or less ☐ _____ m
Mass of equipment (kg)	☒ Approx. 0.139kg
POSSIBLE TEST CASE VERDICTS:	
- test case does not apply to the test object	N/A

- test object does meet the requirement	: P (Pass)
- test object does not meet the requirement	: F (Fail)
TESTING:	
Date of receipt of test item	: March 12, 2020
Date (s) of performance of tests	: March 12, 2020 to March 21, 2020

GENERAL REMARKS:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

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

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

GENERAL PRODUCT INFORMATION:

1. The equipment is Class I "POWER OVER ETHERNET INJECTOR" intended to be used for information technology equipment as a POE power supply and can connect to communication network limited to the same building.
2. The bottom enclosure is secured to the top enclosure by ultrasonic welding method.
3. The plastic enclosure of the EUT has two different versions. One of the version with hook, and other one without. Both versions have the same PCB Layout, circuit schematics and construction. All tests were performed on the version without hook.
4. The maximum ambient temperature permitted by the manufacturer's specification is 40°C.
5. The maximum operating altitude of 5000m. Therefore the requirements of IEC 60664-1 for clearances were considered and the required clearance was multiplied with an altitude correction factor of 1.48.
6. All models are identical to each other except for type designation, output rating, and rating of some components. See appended tables 4.1.2 and below model different list for details.
7. Model 740-64214-001 and G0720-480-050 are identical to each other except for different model designation.

Table A: Definition of variables

Variable	Range of variable	Content
xxx	360-560	'xxx' are 3 digit number, denotes 10 times of output voltage value in V. For example, 360 represents the output voltage is 36V, 560 represents the output voltage is 56V.
yyy	001-075	'yyy' are 3 digit number, denotes 100 times of output current value in A. For example, 001 represents the output current is 0.01A, 075 represents the output current is 0.75A.
zzz	001-100	'zzz' are 3 digit number, denotes 100 times of output current value in A. For example, 001 represents the output current is 0.01A, 100 represents the output current is 1.0A.

Table B: Model list

Model No.	Output voltage (Vdc)	Output current (A)	Max. output power (W)	Transformer
G0720-xxx-yyy	36-56	0.01-0.75	30	LT00783V01

G0720-240-zzz	24	0.01-1.0	24													
740-64214-001	48	0.5	24													
Note: 1. The rated output voltage is rising from 36.0V and in steps of 0.1V between specified voltage range. 2. The rated output current is rising from 0.01A and in steps of 0.01A, but not more than the indicated max o/p current. 3. Actual output current depends on range of output voltage. The max. output current multiplied by output voltage cannot exceed the max. output power.																
Additional application considerations – <table><tr><td>- normal conditions N.C.</td><td>- single fault conditions S.F.C</td></tr><tr><td>- functional insulation FI</td><td>- basic insulation BI</td></tr><tr><td>- double insulation DI</td><td>- supplementary insulation SI</td></tr><tr><td>- between parts of opposite polarity BOP</td><td>- reinforced insulation RI</td></tr><tr><td>- short circuit SC</td><td>- open circuit OC</td></tr><tr><td>- overload O/L</td><td></td></tr></table> Indicate used abbreviations (if any) N/A					- normal conditions N.C.	- single fault conditions S.F.C	- functional insulation FI	- basic insulation BI	- double insulation DI	- supplementary insulation SI	- between parts of opposite polarity BOP	- reinforced insulation RI	- short circuit SC	- open circuit OC	- overload O/L	
- normal conditions N.C.	- single fault conditions S.F.C															
- functional insulation FI	- basic insulation BI															
- double insulation DI	- supplementary insulation SI															
- between parts of opposite polarity BOP	- reinforced insulation RI															
- short circuit SC	- open circuit OC															
- overload O/L																

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:

(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.)
(Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)

Electrically-caused injury (Clause 5):

(Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification)

Example: +5 V dc input

ES1

Source of electrical energy	Corresponding classification (ES)
All circuits except for LAN and output circuit (connector)	ES3
Stored charge on X-capacitor	ES3
LAN and output circuit (connector)	ES1

Electrically-caused fire (Clause 6):

(Note: List sub-assembly or circuit designation and corresponding energy source classification)

Example: Battery pack (maximum 85 watts): PS2

Source of power or PIS	Corresponding classification (PS)
All circuits except for output circuit (connector)	PS3
Output circuit (connector)	PS2

Injury caused by hazardous substances (Clause 7)

(Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.)

Example: Liquid in filled component

Glycol

Source of hazardous substances	Corresponding chemical
N/A	(None)

Mechanically-caused injury (Clause 8)

(Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.)

Example: Wall mount unit

MS2

Source of kinetic/mechanical energy	Corresponding classification (MS)
Edges and corners of enclosure	MS1
Mass of the unit	MS1

Thermal burn injury (Clause 9)

(Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.)

Example: Hand-held scanner – thermoplastic enclosure

TS1

Source of thermal energy	Corresponding classification (TS)
External surface	TS1

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:

Radiation (Clause 10)

(Note: List the types of radiation present in the product and the corresponding energy source classification.)

Example: DVD – Class 1 Laser Product RS1

Type of radiation	Corresponding classification (RS)
LED Indicator	RS1

ENERGY SOURCE DIAGRAM

Indicate which energy sources are included in the energy source diagram. Insert diagram below

☐ ES ☐ PS ☐ MS ☐ TS ☐ RS

(refer to ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE for DETAIL)

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplement ary	Reinforced (Enclosure)
Ordinary person	ES3: All circuits except for LAN and output circuit (connector)	Equipment safeguard	Equipment safeguard	Enclosure, See 5.4.2, 5.4.3, 5.5.3 and 5.5.4
Ordinary person	ES3: Stored charge on X-capacitor	N/A	N/A	See clause 5.5.2.2
Ordinary person	ES1: LAN and output circuit (connector)	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source	Safeguards		
		Basic	Supplement ary	Reinforced
Combustible materials within equipment	PS3: All circuits except for output circuit (connector)	See clause 6.3	See clause 6.4.5, 6.4.6	N/A
	PS2: Output circuit (connector)	See clause 6.3	See clause 6.4.5	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplement ary	Reinforced
N/A (no such sources)	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplement ary	Reinforced (Enclosure)
Ordinary person	MS1: Edges and corners	N/A	N/A	N/A
Ordinary person	MS1: Mass of the unit	N/A	N/A	N/A
9.1	Thermal Burn –			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplement ary	Reinforced
Ordinary person	TS1: External surface	N/A	N/A	N/A
10.1	Radiation			
Body Part	Energy Source	Safeguards		

(e.g., Ordinary)	(Output from audio port)	Basic	Supplementary	Reinforced
Ordinary person	RS1:LED Indicator	N/A	N/A	N/A
Supplementary Information: (1) See attached energy source diagram for additional details. (2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	(See appended table 4.1.2)	P
4.1.2	Use 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. See also Annex G	P
4.1.3	Equipment design and construction	Evaluation of safeguards regarding access to ES3, and protection in regard to risk of spread of fire, mechanical-caused injury and thermal burn considered.	P
4.1.15	Markings and instructions	(See Annex F)	P
4.4.4	Safeguard robustness	See below.	P
4.4.4.2	Steady force tests	(See Annex T.2, T.5)	P
4.4.4.3	Drop test	(See Annex T.7)	P
4.4.4.4	Impact tests	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests	The external enclosure cannot be opened without damaging the product	N/A
4.4.4.6	Glass Impact tests	No such glass used.	N/A
4.4.4.7	Thermoplastic material tests	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness	After tests of 4.4.4.2, 4.4.4.3, 4.4.4.4, 4.4.4.7, no safeguard damaged.	P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard	Considered	P
4.6.2	10 N force test applied to	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
4.7	Equipment for direct insertion into mains socket - outlets	The EUT is not for direct insertion into mains socket-outlets	N/A
4.7.2	Mains plug part complies with the relevant standard	See above	N/A
4.7.3	Torque (Nm)	See above	N/A
4.8	Products containing coin/button cell batteries	No coin/button cell batteries used.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	removing the battery		
4.8.4	Battery Compartment Mechanical Tests		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object	(See Annex P)	P

5	ELECTRICALLY-CAUSED INJURY		P
5.2.1	Electrical energy source classifications..... :	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current	(See appended table 5.2)	P
5.2.2.3	Capacitance limits	(See sub-clause 5.5.2.2)	P
5.2.2.4	Single pulse limits	No such single pulses generated in the EUT or applied to it.	N/A
5.2.2.5	Limits for repetitive pulses	No such repetitive pulses within the EUT	N/A
5.2.2.6	Ringling signals	No such ringing signals within the EUT	N/A
5.2.2.7	Audio signals	No such audio signals	N/A
5.3	Protection against electrical energy sources	See only 4.3 and 5.3 to 5.6 which applies to protection between the accessible parts and hazardous parts of other circuits.	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 circuit can be accessed for this product.	P
5.3.2.2	Contact requirements	No opening of enclosure, no access with test probe to any ES3 circuit or parts.	P
	a) Test with test probe from Annex V..... :		P
	b) Electric strength test potential (V)		N/A
	c) Air gap (mm)		N/A
5.3.2.4	Terminals for connecting stripped wire	No stripped wire used.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	The choice and application have been taken into account as specified in this Clause 5 and Annex T. Natural rubber, hygroscopic materials or asbestos are not used as insulation.	P
5.4.1.3	Humidity conditioning	No hygroscopic material used.	N/A
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree	2	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied. No insulating compound applied for except as in 5.4.4.	N/A
5.4.1.5.3	Thermal cycling	See above	N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer within the EUT	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such starting pulses within the EUT	N/A
5.4.1.8	Determination of working voltage	(See appendix 1 appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces	Considered for accessible surface of enclosure.	P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	The bobbin materials of T1 and L1 is phenolic. No other parts need to be tested.	N/A
5.4.1.10.2	Vicat softening temperature..... :		N/A
5.4.1.10.3	Ball pressure :		N/A
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.2.3	Determining clearance using required withstand voltage :	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage :	2500Vpeak	—
	b) d.c. mains transient voltage :	No such transient	—
	c) external circuit transient voltage :	No such transient	—
	d) transient voltage determined by measurement :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages :	Up to 5000m	P
5.4.3	Creepage distances :	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group :	IIIa&IIIb	—
5.4.4	Solid insulation	See below	P
5.4.4.2	Minimum distance through insulation :	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation	See only 5.4.4.4 regarding to optocoupler.	N/A
5.4.4.4	Solid insulation in semiconductor devices	Approved optocoupler used. Requirements of G.12 met, see table 4.1.2 for listed component used.	P
5.4.4.5	Cemented joints	No such construction within the EUT.	N/A
5.4.4.6	Thin sheet material	See below	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.1	General requirements	At least 2 layers of insulation tape are used for reinforced insulation and are not expected to be subject to handling or abrasion during ordinary or instructed person servicing.	P
5.4.4.6.2	Separable thin sheet material	T1 used two layers are provided as reinforced insulation any one layer passed the electric strength test for reinforced insulation.	P
	Number of layers (pcs) :	See above	P
5.4.4.6.3	Non-separable thin sheet material	No such thin sheet material within the EUT	N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material :	See above	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	See G.5.3 and G.6.1	P
5.4.4.9	Solid insulation at frequencies >30 kHz :		P
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ)..... :		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard :	No such insulation of internal wire used alone as supplementary safeguard.	N/A
5.4.7	Tests for semiconductor components and for cemented joints	No tests necessary –see only 5.4.4.4.	N/A
5.4.8	Humidity conditioning	Requested by manufacturer, test was performed on product with each source of transformer listed in table 4.1.2.	P
	Relative humidity (%)..... :	95%	—
	Temperature (°C) :	40°C	—
	Duration (h) :	120h	—
5.4.9	Electric strength test :	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test	Compliance was checked immediately following temperature test in 5.4.1.4 on the complete unit and on a sample of the transformer raised to the relevant temperature as measured during that test. (See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine tests	No routine tests considered. To be considered during the relevant national approval.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.10	Protection against transient voltages between external circuit	POE Power Supply intended to be used for information technology equipment as a PoE power supply for connection to Ethernet networks limited to the same building.	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test		N/A
5.4.10.2.3	Steady-state test.....		N/A
5.4.11	Insulation between external circuits and earthed circuitry		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V).....		—
	Nominal voltage U_{peak} (V).....		—
	Max increase due to variation U_{sp}		—
	Max increase due to ageing U_{sa}		—
	$U_{op} = U_{peak} + U_{sp} + U_{sa}$		—
5.5	Components as safeguards		
5.5.1	General	See the following details.	P
5.5.2	Capacitors and RC units	Approved X capacitor (C1) and Y capacitor (C13) provided.	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector	(See appended table 5.5.2.2)	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See Annex G.12)	P
5.5.5	Relays	No such relay used as safeguard.	N/A
5.5.6	Resistors	No such resistor used as safeguard.	N/A
5.5.7	SPD's	No such component as safeguard.	N/A
5.5.7.1	Use of an SPD connected to reliable earthing	No such construction.	N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable	No such external circuits.	N/A
5.6	Protective conductor		
5.6.2	Requirement for protective conductors		P
5.6.2.1	General requirements		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2.2	Colour of insulation	Yellow/Green wire from appliance inlet to secondary PCB.	P
5.6.3	Requirement for protective earthing conductors	No power cord provided	N/A
	Protective earthing conductor size (mm ²)		—
5.6.4	Requirement for protective bonding conductors		P
5.6.4.1	Protective bonding conductors	The yellow/green wire soldered from earth pin of appliance inlet soldered to secondary PCB as protective bonding conductor.	P
	Protective bonding conductor size (mm ²).	Min.18 AWG (0.8 mm ²)	—
	Protective current rating (A)	Rated : 0.75A	—
5.6.4.3	Current limiting and overcurrent protective devices		P
5.6.5	Terminals for protective conductors	The earth pin of the approved appliance inlet is considered as protective earthing terminal. The yellow/green wire soldered from earth terminal of appliance inlet soldered to secondary PCB as protective bonding conductor.	N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm ²), nominal thread diameter (mm).		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		P
5.6.6.1	Requirements		P
5.6.6.2	Test Method Resistance (Ω).....	(See appended table 5.6.6.2)	P
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks	Figure 4 of IEC 60990 was used in determining of the limit of ES1.	P
5.7.2.1	Measurement of touch current	(See appended table 5.2)	P
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections	Clause 4, 5.3 and 5.4 of IEC 60990:1999 applied.	P
	System of interconnected equipment (separate connections/single connection)	Single equipment.	—
	Multiple connections to mains (one connection at a time/simultaneous connections)	Single connection.	—
5.7.4	Earthed conductive accessible parts	(See appended table 5.7.2.2, 5.7.4)	P
5.7.5	Protective conductor current		P
	Supply Voltage (V).....	264Vac	—
	Measured current (mA).....	0.250mA _{pk}	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructional Safeguard.....:	Not exceeding ES1 limit.	N/A
5.7.6	Prospective touch voltage and touch current due to external circuits	No such external circuits.	N/A
5.7.6.1	Touch current from coaxial cables	No such parts	N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits	No such external circuits.	N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	PS (power source) classification determined by measuring the maximum power in Figures 34 and 35 for load and power source circuits.	P
6.2.2.1	General	See the following details.	P
6.2.2.2	Power measurement for worst-case load fault ... :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault :	(See appended table 6.2.2)	P
6.2.2.4	PS1 :		N/A
6.2.2.5	PS2 :	(See appended table 6.2.2)	P
6.2.2.6	PS3 :	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources	See the following details.	P
6.2.3.1	Arcing PIS :	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS :	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials :	No ignition and no such temperature attained within the equipment. (See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method by control of fire spread applied.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	See above.	N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	See above.	N/A
6.4.3.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions		N/A
	Special conditions for temperature limited by fuse	No such consideration.	N/A
6.4.4	Control of fire spread in PS1 circuits	PS2 and PS3 circuits inside.	N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards	Compliance detailed as follows: - <u>Printed board</u> : rated min. V-1 - <u>Internal wire</u> : complying with 6.5. - <u>All other components</u> : at least V-2 except for components mounted on min. V-1 material or small parts of combustible material. <u>Isolating transformer</u> : complying with G.5.3.	P
6.4.6	Control of fire spread in PS3 circuit	Compliance detailed as follows: - Parts as in 6.4.5 above - Inlet : complying to IEC standard - Fire enclosure : rated V-0 used.	P
6.4.7	Separation of combustible materials from a PIS	Fire enclosure provided for all internal parts.	N/A
6.4.7.1	General		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.1	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier	No fire barrier used.	N/A
6.4.8.2.2	Requirements for a fire enclosure	Fire enclosure : rated V-0 used. Metal surround of RJ45 connector provides part of fire enclosure.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm)	No openings	P
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm)	No openings	P
	Flammability tests for the bottom of a fire enclosure		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating	Fire enclosure is made of V-0 material, other part (see 6.4.8.1) is metal.	P
6.5	Internal and external wiring		P
6.5.1	Requirements	Internal wire comply with UL 758, which has the equivalent requirement with IEC/TS 60695- 11-21.	P
6.5.2	Cross-sectional area (mm ²)	(See appended table 4.1.2)	—
6.5.3	Requirements for interconnection to building wiring		N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1	Output limited to PS2.	P

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances	No hazardous chemicals within the equipment.	N/A
7.3	Ozone exposure	No ozone production within the equipment.	N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....		—
7.6	Batteries.....	No battery used.	N/A

8	MECHANICALLY-CAUSED INJURY		P
8.1	General	No moving parts in the equipment; see below regarding edges and corners.	P
8.2	Mechanical energy source classifications	MS1 applied for mass of equipment and edges and corners.	P
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners	Edges and corners of the enclosure are rounded.	P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts	No moving parts.	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard.....		—
8.5.4	Special categories of equipment comprising moving parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N)		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....		N/A
8.6	Stability	MS1 for Mass of equipment, no stability requirements.	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard.....		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....		N/A
	Position of feet or movable parts.....		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface)		N/A
8.7.2	Direction and applied force		N/A
8.8	Handles strength		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force		—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard.....		—

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Clause	Requirement + Test	Result - Remark	Verdict
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N)		—
8.10.6	Thermoplastic temperature stability (°C).....		N/A
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable N		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas		N/A
	Button/Ball diameter (mm).....		—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications	All accessible surfaces are classified as TS1, see appended table 5.4.1.4, 6.3.2, 9.0, B.2.6.	P
9.3	Safeguard against thermal energy sources	No safeguard required for TS1.	N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P
9.4.2	Instructional safeguard	Instructional safeguard is not required	N/A

10	RADIATION		P
10.2	Radiation energy source classification		P
10.2.1	General classification	Indicating LED classed as RS1	P
10.3	Protection against laser radiation		N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault.....		N/A
	Instructional safeguard		—
	Tool.....		—
10.4	Protection against visible, infrared, and UV radiation		N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.4.1.b)	RS3 accessible to a skilled person		N/A
	Personal safeguard (PPE) instructional safeguard		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 .		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque		N/A
10.4.1.f)	UV attenuation		N/A
10.4.1.g)	Materials resistant to degradation UV		N/A
10.4.1.h)	Enclosure containment of optical radiation		N/A
10.4.1.i)	Exempt Group under normal operating conditions		N/A
10.4.2	Instructional safeguard		N/A
10.5	Protection against x-radiation	No such x-radiation generated from the equipment	N/A
10.5.1	X- radiation energy source that exists equipment :		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards		N/A
	Instructional safeguard for skilled person		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation		—
	Abnormal and single-fault condition		N/A
	Maximum radiation (pA/kg)		N/A
10.6	Protection against acoustic energy sources	Not such equipment.	N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)		N/A
	Output voltage, unweighted r.m.s.		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards		N/A
	Equipment safeguard prevent ordinary person to RS2		—
	Means to actively inform user of increase sound pressure		—
	Equipment safeguard prevent ordinary person to RS2		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output		—

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A)		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A)		—

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.2	Normal Operating Conditions	See the following details.	P
B.2.1	General requirements	(See summary of testing and appended table)	P
	Audio Amplifiers and equipment with audio amplifiers	Not such equipment.	N/A
B.2.3	Supply voltage and tolerances	Rated voltage tolerance $\pm 10\%$ applied.	P
B.2.5	Input test	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements	(See appended table B.3, B.4)	P
B.3.2	Covering of ventilation openings		N/A
B.3.3	D.C. mains polarity test	The EUT is not connected to a D.C. mains	N/A
B.3.4	Setting of voltage selector	No voltage selector used within the EUT	N/A
B.3.5	Maximum load at output terminals	(See appended table B.3, B.4)	P
B.3.6	Reverse battery polarity	No battery within the EUT	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	Not such equipment.	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	All safeguards remained effective.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited	No such device used.	N/A
B.4.3	Motor tests	No such device used.	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature		N/A
B.4.4	Short circuit of functional insulation	See the following details.	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended tables B.3, B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended tables B.3, B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards within the EUT	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	(See appended tables B.3, B.4 for faults on electronic components)	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.6	Short circuit or disconnect of passive components	(See appended tables B.3, B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	No change to circuits classified in 5.3.	P
B.4.9	Battery charging under single fault conditions.... :	No battery involved in the EUT	N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation	No such UV generated from the equipment.	N/A
C.1.2	Requirements	See above.	N/A
C.1.3	Test method	See above.	N/A
C.2	UV light conditioning test	See above.	N/A
C.2.1	Test apparatus	See above.	N/A
C.2.2	Mounting of test samples	See above.	N/A
C.2.3	Carbon-arc light-exposure apparatus	See above.	N/A
C.2.4	Xenon-arc light exposure apparatus	See above.	N/A
D	TEST GENERATORS		P
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		P
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Audio amplifier normal operating conditions	Not such equipment.	N/A
	Audio signal voltage (V)..... :	See above.	—
	Rated load impedance (Ω) :	See above.	—
E.2	Audio amplifier abnormal operating conditions	See above.	N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General requirements	See the following details.	P
	Instructions – Language :	English version provided. (Version in other language will be provided when submitted for national approval)	—
F.2	Letter symbols and graphical symbols	See the following details.	P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60027-1.	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Equipment marking is located on the enclosure surface and is easily visible.	P
F.3.2	Equipment identification markings	See the following details.	P
F.3.2.1	Manufacturer identification	See copy of marking plate.	—
F.3.2.2	Model identification	See copy of marking plate.	—
F.3.3	Equipment rating markings	See the following details.	P
F.3.3.1	Equipment with direct connection to mains	The equipment is connected to AC mains supply.	P
F.3.3.2	Equipment without direct connection to mains	See above.	N/A
F.3.3.3	Nature of supply voltage	See copy of marking plate.	—
F.3.3.4	Rated voltage	See copy of marking plate.	—
F.3.3.4	Rated frequency	See copy of marking plate.	—
F.3.3.6	Rated current or rated power.....	See copy of marking plate.	—
F.3.3.7	Equipment with multiple supply connections	Only one supply connection.	N/A
F.3.4	Voltage setting device	Auto range and no voltage selector provide within the equipment.	N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings	No such devices on the equipment.	N/A
F.3.5.2	Switch position identification marking.....	No such switch on the equipment.	N/A
F.3.5.3	Replacement fuse identification and rating markings	The fuse is located within the equipment and not replaceable by an ordinary person or an instructed person. The fuse marked with F1 T3.15AL, 250V~.	P
F.3.5.4	Replacement battery identification marking	No such battery on the equipment.	N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification	See below.	P
F.3.6.1	Class I Equipment		P
F.3.6.1.1	Protective earthing conductor terminal	Protective earthing symbol marked on the appliance inlet.	P
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)	Class I equipment	N/A
F.3.6.2.1	Class II equipment with or without functional earth	Class I equipment	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6.2.2	Class II equipment with functional earth terminal marking	Class I equipment	N/A
F.3.7	Equipment IP rating marking	IPX0.	—
F.3.8	External power supply output marking	See copy of marking plate.	P
F.3.9	Durability, legibility and permanence of marking	Marking is considered to be legible and easily discernible. See also the following details.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec. With the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling and lifting of the label edge. After each test, the marking remained legible.	P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	No such terminals provided.	N/A
	f) Protective earthing employed as safeguard		P
	g) Protective earthing conductor current exceeding ES2 limits		N/A
	h) Symbols used on equipment	No such symbols	N/A
	i) Permanently connected equipment not provided with all-pole mains switch	Not permanently connected equipment.	N/A
	j) Replaceable components or modules providing safeguard function	No such markings.	N/A
F.5	Instructional safeguards	No instructional safeguard is considered as necessary.	N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction	No instructional safeguard required in the equipment.	N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General requirements	No switch used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	Relays		N/A
G.2.1	General requirements	No relay used.	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	Protection Devices		P
G.3.1	Thermal cut-offs	No thermal cut-off provided within the equipment.	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)	See above.	N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)	See above.	N/A
G.3.1.2	Thermal cut-off connections maintained and secure	See above.	N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link provided within the equipment.	N/A
G.3.2.1b)	Thermal links tested as part of the equipment	See above.	N/A
	Aging hours (H)	See above.	—
	Single Fault Condition	See above.	—
	Test Voltage (V) and Insulation Resistance (Ω) . :	See above.	—
G.3.3	PTC Thermistors	No PTC thermistor provided within the equipment.	N/A
G.3.4	Overcurrent protection devices	Current fuse complying with IEC 60127 as overcurrent protection device. (see appended table 4.1.2)	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions		N/A
G.4	Connectors		P
G.4.1	Spacings	No such connector with insulated surfaces accessible within the EUT	N/A
G.4.2	Mains connector configuration	IEC 60320-1 approved appliance inlet used	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	Output connector (RJ45) so designed that insert into a mains socket is unlikely to occur.	P
G.5	Wound Components		P
G.5.1	Wire insulation in wound components	Approved TIW used for secondary winding of T1.	P

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Physical separation is provided by tubing on both secondary leads and primary leads.	P
G.5.1.2 b)	Construction subject to routine testing	See 5.4.9.2.	N/A
G.5.2	Endurance test on wound components	Not applied for.	N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s).....:		—
	Temperature (°C).....:		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	Transformers		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....:	The transformers meet the requirements given in G.5.3.2 and G.5.3.3.	P
	Position	T1	—
	Method of protection	Over current protection by circuit design.	—
G.5.3.2	Insulation	Primary windings and secondary windings are separated by Reinforced insulation. (See appendix 2 appended table G.5.3)	P
	Protection from displacement of windings.....:	By bobbin and insulating tape	—
G.5.3.3	Overload test	(See appended tables B.3, B.4)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended tables B.3, B.4)	P
G.5.3.3.3	Winding Temperatures - Alternative test method	Alternative test method was not considered.	N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements	No motors used.	N/A
	Position		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days)		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V)		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h)		N/A
	Electric strength test (V)		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature		N/A
	Electric strength test (V)		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h).....		N/A
	Electric strength test (V)		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		—
G.6	Wire Insulation		P
G.6.1	General	Triple insulated winding in T1 secondary windings used as reinforced safeguard in the isolating transformer that has separately complied with Annex J. See Appended table 4.1.2. No other wires other than Basic insulated wires not under stress used in the EUT.	P
G.6.2	Solvent-based enamel wiring insulation	Insulation does not rely on solvent-based enamel.	N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements	No power supply cord provided.	N/A
	Type		—
	Rated current (A)		—
	Cross-sectional area (mm ²), (AWG)		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g)		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Diameter (m).....:		—
	Temperature (°C).....:		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	Varistors		P
G.8.1	General requirements	Approved varistor(MOV1) used in primary (mains) and G.8.3 does not apply.	P
G.8.2	Safeguard against shock	Approved varistor MOV1 used, see table 4.1.2 for details.	P
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test.....:		N/A
G.8.3.3	Temporary overvoltage.....:		N/A
G.9	Integrated Circuit (IC) Current Limiters		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No IC current limiter provided within the equipment.	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA		—
G.9.1 d)	IC limiter output current (max. 5A)		—
G.9.1 e)	Manufacturers' defined drift		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	Resistors		N/A
G.10.1	General requirements	No such resistor used.	N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	Capacitor and RC units		P
G.11.1	General requirements	Capacitors used in accordance with their rating and complied with subclasses of IEC 60384-14. (see appended table 4.1.2)	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	Optocouplers		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)	The optocouplers used in the equipment and complied with IEC 60747-5-5. (see appended table 4.1.2)	P
	Type test voltage Vini, a	Considered	—
	Routine test voltage, Vini,b	Considered	—
G.13	Printed boards		P
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board or over the outer surface of coated printed boards complied with the minimum clearance and creepage requirements of 5.4.2 and 5.4.3.	P
G.13.3	Coated printed boards	No coated printed board applied for within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner surface	See above.	N/A
	Compliance with cemented joint requirements (Specify construction)		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements	No coating on component terminals considered to affect creepage or clearances.	N/A
G.15	Liquid filled components		N/A
G.15.1	General requirements	No such device provided within the equipment.	N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours	No such discharge IC used.	N/A
b)	Impulse test using circuit 2 with U_c = to transient voltage	see above	N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes	see above	N/A
C2)	Test voltage	see above	—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer	see above	N/A
D2)	Capacitance	see above	—
D3)	Resistance	see above	—
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General	No telephone ringing signal generated within the equipment.	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal		N/A
H.3.1.1	Frequency (Hz)		—
H.3.1.2	Voltage (V)		—
H.3.1.3	Cadence; time (s) and voltage (V)		—
H.3.1.4	Single fault current (mA):.....		—
H.3.2	Tripping device and monitoring voltage.....		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)		—
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
	General requirements	Triple insulated winding wiring used as reinforced safeguard in the isolating transformer that has been evaluated to Annex J as follows: Requirements of Annex U of IEC 60950-1/A2 are identical to Annex J of this standard (for wires providing Reinforced insulation). See Table 4.1.2.	P

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Clause	Requirement + Test	Result - Remark	Verdict

K	SAFETY INTERLOCKS		N/A
K.1	General requirements	No safety interlock provided within the equipment.	N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location)		N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A

L	DISCONNECT DEVICES		P
L.1	General requirements	Appliance inlet (coupler) used as disconnect device.	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources	Only one a.c. mains connection.	N/A

M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements	No battery used.	N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method) ..		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
M.3.3	Compliance		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature		—
M.4.2.2 b)	Single faults in charging circuitry.....		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method)		N/A
M.6.2	Leakage current (mA)		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s).....:		—
M.8.2.3	Correction factors		—
M.8.2.4	Calculation of distance d (mm)		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing):		N/A
N	ELECTROCHEMICAL POTENTIALS		N/A
	Metal(s) used.....:		—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Figures O.1 to O.20 of this Annex applied	Considered.	—
P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		P
P.1	General requirements	No openings of enclosure.	P
P.2.2	Safeguards against entry of foreign object	Enclosure without openings inherently complies.	N/A
	Location and Dimensions (mm)		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts.....:		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard)		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C)		—
	Tr (°C).....		—
	Ta (°C).....		—
P.4.2 b)	Abrasion testing		N/A
P.4.2 c)	Mechanical strength testing		N/A

Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources	See appended table Annex Q.1	P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		P
	- Regulating network limited output under normal operating and simulated single fault condition	A regulating network limits the output in compliance with table Q.1 both under normal operating conditions and after any single fault.	P
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method	See appended table Annex Q.1	P
Q.2	Test for external circuits – paired conductor cable	No such circuit for connection to the EUT	N/A
	Maximum output current (A)		—
	Current limiting method		—

R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General requirements	No such consideration.	N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)).		N/A

S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	Approved fire enclosure with V-0 material used.	N/A
	Samples, material.....		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material.....:		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material.....:		—
	Wall thickness (mm)		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material.....:		—
	Wall thickness (mm)		—
	Conditioning (test condition), (°C)		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A

T	MECHANICAL STRENGTH TESTS		P
T.1	General requirements		P
T.2	Steady force test, 10 N	(See appended table T.2, T.3, T.4, T.5)	P
T.3	Steady force test, 30 N		N/A
T.4	Steady force test, 100 N		N/A
T.5	Steady force test, 250 N	(See appended table T.2, T.3, T.4, T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test		P
	Swing test		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
T.7	Drop test	(See appended table T.7)	P
T.8	Stress relief test.....	(See appended table T.8)	P
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J)		—
	Height (m)		—
T.10	Glass fragmentation test		N/A
T.11	Test for telescoping or rod antennas	No such part.	N/A
	Torque value (Nm)		—

U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General requirements	No CRT provided within the equipment.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs	See above.	N/A
U.3	Protective Screen.....	See above.	N/A

V	DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)		P
V.1	Accessible parts of equipment	No access with test probes to any hazardous parts	P
V.2	Accessible part criterion	See above.	P

ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment Part 1: Safety requirements)	
Differences according to	EN 62368-1:2014+A11:2017
Attachment Form No.	EU_GD_IEC62368_1B_II
Attachment Originator	Nemko AS
Master Attachment	Date 2017-09-22

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

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	CENELEC common modifications EN						--																																				
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".						--																																				
CONTENT S	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords						P																																				
	Delete all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list: <table><tr><td>0.2.1</td><td>Note</td><td>1</td><td>Note 3</td><td>4.1.15</td><td>Note</td></tr><tr><td>4.7.3</td><td>Note 1 and 2</td><td>5.2.2.2</td><td>Note</td><td>5.4.2.3.2.2 Table 13</td><td>Note c</td></tr><tr><td>5.4.2.3.2.4</td><td>Note 1 and 3</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</td><td>Note</td></tr><tr><td>5.5.2.1</td><td>Note</td><td>5.5.6</td><td>Note</td><td>5.6.4.2.1</td><td>Note 2 and 3</td></tr><tr><td>5.7.5</td><td>Note</td><td>5.7.6.1</td><td>Note 1 and 2</td><td>10.2.1 Table 39</td><td>Note 2, 3 and 4</td></tr><tr><td>10.5.3</td><td>Note 2</td><td>10.6.2.1</td><td>Note 3</td><td>F.3.3.6</td><td>Note 3</td></tr></table>						0.2.1	Note	1	Note 3	4.1.15	Note	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c	5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3	P
0.2.1	Note	1	Note 3	4.1.15	Note																																						
4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c																																						
5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note																																						
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10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3																																						
	For special national conditions, see Annex ZB.						P																																				
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.						P																																				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	Add the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. mains, 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 B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation 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.	Considered. Complied with item a) for internal fuse (F1) used and for parts as described in b) reliance on the protection in the building installation.	P
5.4.2.3.2.4	Add the following to the end of this subclause: The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.		P
10.2.1	Add the following to ^{o)} and ^{o)} in table 39: For additional requirements, see 10.5.1.	No radiation.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	Add the following after the first paragraph: <i>For RS 1 compliance is checked by measurement under the following conditions:</i> <i>In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.</i> NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. <i>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.</i> <i>Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.</i> <i>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</i> NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.	Added.	N/A
10.6.1	Add the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.	Added.	N/A
10.Z1	Add the following new subclause after 10.6.5. 10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566		N/A
G.7.1	Add the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.	Added.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Bibliography	Add the following standards: Add the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		N/A
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
4.1.15	Denmark, Finland, Norway and Sweden To the end of the subclause the following is added: Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"	Not such equipment	N/A
4.7.3	United Kingdom To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex	Not a direct plug-in equipment.	N/A
5.2.2.2	Denmark After the 2nd paragraph add the following: A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high touch current measured.	N/A
5.4.11.1 and Annex G	Finland and Sweden To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable:		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; • 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.		
5.5.2.1	Norway After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		P
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.1	Denmark Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A
5.6.4.2.1	Ireland and United Kingdom After the indent for pluggable equipment type A , the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.	Add.	N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm ² to 1,5 mm ² in cross-sectional area.		N/A
5.7.5	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high protective conductor current.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	Norway and Sweden To the end of the subclause the following is added: The screen of the television 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 needs to be isolated from the screen of a cable distribution system. 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 a retailer, for example. 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: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.”	Not such system.	N/A
	Translation to Swedish: “Apparater 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 apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.		
5.7.6.2	Denmark To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA	No external circuits.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.3.1 and B.4	Ireland and United Kingdom The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the direct plug-in equipment, until the requirements of Annexes B.3.1 and B.4 are met		N/A
G.4.2	Denmark To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. 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. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a <i>Justification:</i> Heavy Current Regulations, Section 6c	No power supply cord provided.	N/A
G.4.2	United Kingdom To the end of the subclause the following is added: 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.	Not a direct plug-in equipment.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	United Kingdom To the first paragraph the following is added: Equipment 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 shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	Ireland To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	Ireland and United Kingdom To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm ² is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		P
10.5.2	Germany The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int +49-531-592-6320, Internet: http://www.ptb.de	Not such equipment.	N/A

4.1.2	TABLE: List of critical components					P
Object/ part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹	
Plastic Enclosure	SABIC INNOVATIVE PLASTICS US L L C	945 (GG)	PC, V-0, 120°C, min. thickness 1.5mm	UL 94	UL E121562	
(Alternative)	SABIC JAPAN L L C	CH6410(GG)	PC, V-0, 100°C, min. thickness 1.5mm	UL 94	UL E207780	
Appliance Inlet (CON3)	Dongguan HUACONN Electronics Co., Ltd	HC-66	2.5A, 250Vac	IEC/EN 60320-1 IEC/EN 60320-3	VDE 40032581	
(Alternative)	Zhe Jiang Bei Er Jia Electronic Co., Ltd.	ST-A04-001	2.5A, 250Vac	IEC/EN 60320-1 IEC/EN 60320-3	VDE 40016045	
(Alternative)	Zhejiang LECI Electronics Co., Ltd	DB-6	2.5A, 250Vac	IEC/EN 60320-1	VDE 40032465	
(Alternative)	Yueqing Yanhui Electronic Co., Ltd.	DB-14-S-1	2.5A, 250Vac	IEC/EN 60320-1	VDE 40035402	
Earthing wire	Interchangeable	1015	Min. 18 AWG, 300V, 105°C, green/yellow wire	UL 758	UL	
PCB	Interchangeable	Interchangeable	Min. 130°C, V-1 or better	UL 94 UL 796	UL	
Fuse (F1)	Conquer Electronics Co., Ltd.	MST	T3.15AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40017118	
(Alternative)	Honghu Bluelight Electronic Co., Ltd.	6ET	T3.15AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40034107	
(Alternative)	XC Electronics (Shen Zhen) Corp. Ltd.	5TE	T3.15AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40029550	
Varistor (MOV1) (Optional)	Thinking Electronic Industrial Co., Ltd.	TVR10561	Min. 350Vac, min. 85°C (Test for 6KV/3KA combination pulse), coating V-0	IEC 61051-1 IEC 61051-2	VDE 40031391	
(Alternative)	Brightking (Shenzhen) Co., Ltd.	10D561K	Min. 350Vac, min. 85°C (Test for 6KV/3KA combination pulse), coating V-0	IEC 61051-1 IEC 61051-2	VDE 40027827	
(Alternative)	Success Electronics Co., Ltd.	SVR10D561K	Min. 350Vac, min. 85°C (Test for 6KV/3KA combination pulse), coating V-0	IEC 61051-1 IEC 61051-2 UL 1449	VDE 123677	

(Alternative)	Cerglass MFG Inc	10D561K	Min. 350Vac, min. 85°C (Test for 6KV/3KA combination pulse), coating V-0	IEC 61051-1 IEC 61051-2	VDE 40028836
(Alternative)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	10D561K	Min. 350Vac, min. 85°C (Test for 6KV/3KA combination pulse), coating V-0	IEC 61051-1 IEC 61051-2	VDE 40023049
(Alternative)	Joyin Co., Ltd.	10S561K	Min. 350Vac, min. 85°C (Test for 6KV/3KA combination pulse), coating V-0	IEC 61051-1 IEC 61051-2	VDE 40004658 UL E325508
(Alternative)	Fenghua Adv. Tech. (Holding) Co., Ltd. Xianhua New Sen. Comp. & Sensor Br. Co.	FNR-10K561	Min. 350Vac, min. 85°C (Test for 6KV/3KA combination pulse), coating V-0	IEC 61051-1 IEC 61051-2	VDE 40008242
X-Capacitors (C1) (Optional)	Tenta Electric Industrial Co. Ltd.	MEX	Max. 0.22μF, 275Vac, 100°C, X2 type	IEC 60384-14 EN 60384-14	VDE 119119
(Alternative)	Shantou High-new Technology Development Zone Songtian	MPX	Max. 0.22μF, min. 275Vac, 110°C, X2 type	IEC 60384-14 EN 60384-14	VDE 40034679
(Alternative)	Shenzhen Su Rong Capacitors Co., Ltd.	MPX/MKP	Max. 0.22μF, min. 280Vac, min. 100°C, X2 type	IEC 60384-14 EN 60384-14	VDE 40008924
(Alternative)	Dain Electronics Co., Ltd.	MPX	Max. 0.22μF, 275Vac, min. 100°C, X2 type	IEC 60384-14 EN 60384-14	VDE 40018798
(Alternative)	Shenzhen Yimanfeng Science And Technology Co., Ltd.	MPX/MKP	Max. 0.22μF, min. 275Vac, min. 100°C, X2 type	IEC 60384-14 EN 60384-14	VDE 40028516
(Alternative)	Hsuan Tai Electronic Co. Ltd.	MCY	Max. 0.22μF, 275Vac, 110°C, X2 type	IEC 60384-14 EN 60384-14	VDE 125205
(Alternative)	Guangdong JURCC electronics Co., LTD.	MPX/MKP	Max. 0.22μF, min. 275Vac, min. 110°C, X2 type	IEC 60384-14 EN 60384-14	VDE 40034920
Y-Capacitor (C13) (Optional)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CD	Max. 3300pF, Min. 250Vac, 125°C, Y1 type	IEC 60384-14 EN 60384-14	VDE 40025754

(Alternative)	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 3300pF, Min. 250Vac, 125°C, Y1 type	IEC 60384-14 EN 60384-14	VDE 40036393
(Alternative)	Jyh Chung Electronic Co., Ltd.	JD	Max. 3300pF, 400Vac, 125°C, Y1 type	IEC 60384-14 EN 60384-14	VDE 137027
(Alternative)	XIAMEN WANMING ELECTRONICS CO LTD	HJ	Max. 3300pF, Min. 250Vac, 125°C, Y1 type	IEC 60384-14 EN 60384-14	VDE 40034438
(Alternative)	Shaanxi Huaxing Electronic Development Co. Ltd.	CT7Y1	Max. 3300pF, 400Vac, 125°C, Y1 type	IEC 60384-14 EN 60384-14	VDE 40015542
(Alternative)	Hsuan Tai Electronic Co. Ltd.	CY	Max. 3300pF, 400Vac, 125°C, Y1 type	IEC 60384-14 EN 60384-14	VDE 40008912
(Alternative)	Shenzhen Teruixiang Electronic Co, Ltd.	TY	Max. 3300pF, 400Vac, 125°C, Y1 type	IEC 60384-14 EN 60384-14	VDE 40031733
Optocoupler (OT1)	COSMO Electronics Corporation	K1010, KPC817	Ext.cl ≥6.5mm, 115°C	IEC 60747-5-5 EN 60747-5-5	VDE 101347
(Alternative)	Lite-On Technology Corporation	LTV-817	Ext.cl ≥7.0mm, 115°C	IEC 60747-5-5 EN 60747-5-5	VDE 40015248
(Alternative)	Everlight Electronics Co., Ltd.	EL817	Ext.cl ≥7.6mm, 110°C	IEC 60747-5-5 EN 60747-5-5	VDE 132249
(Alternative)	Fairchild Semiconductor Pte Ltd	H11A817(A; B; C; D; X)	Ext.cl ≥7.0mm, 115°C	IEC 60747-5-5 EN 60747-5-5	VDE 40026857
(Alternative)	Bright Led Electronics Corp.	BPC-817 (A,B,C,D,L), BPC-817S	Ext.cl ≥7.6mm, 110°C	IEC 60747-5-5 EN 60747-5-5	VDE 40007240
Thermistor (RT1)	Interchangeable	Interchangeable	Min. 3A, 5ohm, at 25°C	--	--
Bleeder resistor (R20, R21, R22, R23)	Interchangeable	Interchangeable	Each of max. 3.3M ohm, 1/4W	--	Tested with appliance
Current-limiting resistor (R16, R17)	Interchangeable	Interchangeable	Each of 1.0-3.0 ohm, 1/4W	--	Tested with appliance
Bridge Diode (D1, D2, D3, D6)	Interchangeable	Interchangeable	Each of min.1000V, min. 1A	--	Tested with appliance
Transistor (Q1)	Interchangeable	Interchangeable	Min. 7A, Min. 650V	--	Tested with appliance
Electrolytic capacitor (C2)	Interchangeable	Interchangeable	22-47uF, 105°C, Min.400V	--	Tested with appliance

Inductor (L1)	DONGGUANSHI CHANGSHEN Electronic Co., LTD.	LL00053V00	130°C	IEC/EN 62368-1	Tested with appliance
--Bobbin of L1	CHANG CHUN PLASTICS CO LTD	T375J	Phenolic, V-0, 150°C, Min. thickness: 0.45mm	UL 94	UL E59481
--Magnet wire of L1	Interchangeable	Interchangeable	Min.130°C	UL 1446	UL
--Insulation tape of L1	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ-280	130°C	UL 510A	UL E165111
--Varnishes of L1	HANG CHEUNG COATINGS (HUIYANG) LTD	8562A	155°C	UL 1446	UL E200154
Inductor (L1) (Alternative)	SHENZHEN HENGSIDA INDUSTRY CO., LTD	LL00053V00	130°C	IEC/EN 62368-1	Tested with appliance
--Bobbin of L1	CHANG CHUN PLASTICS CO LTD	T375J	Phenolic, V-0, 150°C, Min.thickness: 0.45mm	UL 94	UL E59481
--Magnet wire of L1	Interchangeable	Interchangeable	Min.130°C	UL 1446	UL
--Insulation tape of L1	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 (b)	130°C	UL 510A	UL E17385
--Varnishes of L1	HANG CHEUNG COATINGS (HUIYANG) LTD	8562C	155°C	UL 1446	UL E200154
Inductor (L1) (Alternative)	SHENZHEN WANZHIYU TECHNOLOGY CO LTD	LL00053V00	130°C	IEC/EN 62368-1	Tested with appliance
--Bobbin of L1	CHANG CHUN PLASTICS CO LTD	T375J	Phenolic, V-0, 150°C, Min. thickness: 0.45mm	UL 94	UL E59481
--Magnet wire of L1	Interchangeable	Interchangeable	Min.130°C	UL 1446	UL
--Insulation tape of L1	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 (b)	130°C	UL 510A	UL E17385
--Varnishes of L1	HANG CHEUNG COATINGS (HUIYANG) LTD	8562*	155°C	UL 1446	UL E200154
Inductor (L1) (Alternative)	HUIZHOU YONG JIN ELECTRIC CO., LTD	LL00053V00	130°C	IEC/EN 62368-1	Tested with appliance

--Bobbin of L1	CHANG CHUN PLASTICS CO LTD	T375J	Phenolic, V-0, 150°C, Min.thickness: 0.45mm	UL 94	UL E59481
--Magnet wire of L1	Interchangeable	Interchangeable	Min.130°C	UL 1446	UL
--Insulation tape of L1	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 (b)	130°C	UL 510A	UL E17385
--Varnishes of L1	HANG CHEUNG COATINGS (HUIYANG) LTD	8562C	155°C	UL 1446	UL E200154
Transformer (T1)	ShenZhen JiaMeiRui ELECTRONICS CO., LTD	LT00783V01	Class B	IEC/EN 62368-1	Tested with appliance
--Bobbin of T1	SUMITOMO BAKELITE CO LTD	PM-9820, PM-9830	Phenolic, V-0, 150°C, Min. thickness: 0.70mm	UL 94	UL E41429
--Magnet wire of T1	Interchangeable	Interchangeable	Polyurethane, Min.130°C	UL 1446	UL
--Triple insulated wire of T1	Furukawa Electric Co., Ltd.	TEX-E	130°C	IEC 62368-1 EN 62368-1 UL 2353	VDE 006735 UL E206440
--(Alternative)	Totoku Electric Co. Ltd.	TIW-3	130°C	IEC 60950-1 EN 60950-1 UL 2353	VDE E166483 UL E166483
--Tubing of T1	GREAT HOLDING INDUSTRIAL CO LTD	TFS	600V, 200°C, VW-1	UL 224	UL E156256
--Insulation tape of T1	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350T-1 (b)	130°C	UL 510A	UL E17385
--(Alternative)	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	44T-A (a)	130°C	UL 510A	UL E17385
--Varnishes of T1	ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC	468-2 (d)	130°C	UL 1446	UL E75225
Transformer (T1) (Alternative)	SHENZHEN HENGSIDA INDUSTRY CO., LTD	LT00783V01	Class B	IEC/EN 62368-1	Tested with appliance
--Bobbin of T1	SUMITOMO BAKELITE CO LTD	PM-9820	Phenolic, V-0, 150°C, Min.thickness: 0.70mm	UL 94	UL E41429

--Magnet wire of T1	Interchangeable	Interchangeable	Polyurethane, Min.130°C	UL 1446	UL
--Triple insulated wire of T1	Furukawa Electric Co., Ltd.	TEX-E	130°C	IEC 62368-1 EN 62368-1 UL 2353	VDE 006735 UL E206440
--Tubing of T1	GREAT HOLDING INDUSTRIAL CO LTD	TFS	600V, 200°C, VW-1	UL 224	UL E156256
--Insulation tape of T1	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350T-1 (b)	130°C	UL 510A	UL E17385
--Varnishes of T1	ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC	468-2 (d)	130°C	UL 1446	UL E75225
Transformer (T1) (Alternative)	CHENZHOUE YUHUI ELECTRONIC TECHNOLOGY CO LTD	LT00783V01	Class B	IEC/EN 62368-1	Tested with appliance
--Bobbin of T1	SUMITOMO BAKELITE CO LTD	PM-9820	Phenolic, V-0, 150°C, Min. thickness: 0.70mm	UL 94	UL E41429
--Magnet wire of T1	Interchangeable	Interchangeable	Polyurethane, Min.130°C	UL 1446	UL
--Triple insulated wire of T1	Furukawa Electric Co., Ltd.	TEX-E	130°C	IEC 62368-1 EN 62368-1 UL 2353	VDE 006735 UL E206440
--Tubing of T1	GREAT HOLDING INDUSTRIAL CO LTD	TFS	600V, 200°C, VW-1	UL 224	UL E156256
--Insulation tape of T1	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ*(b)	130°C	UL 510A	UL E165111
--Varnishes of T1	ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC	468-2 (d)	130°C	UL 1446	UL E75225
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests			N/A
(The following mechanical tests are conducted in the sequence noted.)				
4.8.4.2	TABLE: Stress Relief test			—
Part		Material	Oven Temperature (°C)	Comments

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4.8.4.3		TABLE: Battery replacement test					—		
Battery part no.:								—	
Battery Installation/withdrawal				Battery Installation/Removal Cycle				Comments	
				1				--	
				2				--	
				3				--	
				4				--	
				5				--	
				6				--	
				8				--	
				9				--	
				10				--	
4.8.4.4		TABLE: Drop test						—	
Impact Area		Drop Distance		Drop No.				Observations	
--		--		--				--	
--		--		--				--	
4.8.4.5		TABLE: Impact						—	
Impacts per surface		Surface tested		Impact energy (Nm)				Comments	
--		--		--				--	
--		--		--				--	
4.8.4.6		TABLE: Crush test						—	
Test position		Surface tested		Crushing Force (N)				Duration force applied (s)	
--		--		--				--	
--		--		--				--	
Supplementary information:									

4.8.5	TABLE: Lithium coin/button cell batteries mechanical test result		N/A
Test position	Surface tested	Force (N)	Duration force applied (s)
--	--	--	--
--	--	--	--
Supplementary information:			

5.2	Table: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No .	Supply Voltage	Location (e.g. circuit designation)	Test conditions ¹⁾	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1	264Va.c. 60Hz	Primary circuits supplied by a.c. mains supply	Normal :	264Vrms	--	60	ES3
			Abnormal :	--	--	--	
			Single fault :	--	--	--	

Model No.: G0720-240-100							
1	264Va.c. 60Hz	Output "+" to "-"	Normal :	24.32Vdc	--	DC	ES1
			Abnormal : Overload	Max. 24.32Vdc	--	DC	
			Signal fault : R17 short	0	--	--	
			Signal fault : C9 short	0	--	--	
			Signal fault : D8 short	0	--	--	
			Signal fault : OT1 Pin1-2 short	0	--	--	
			Signal fault : OT1 Pin3-4 short	0	--	--	
			Signal fault : OT1 Pin1 open	0	--	--	
			Signal fault : OT1 Pin3 open	0	--	--	
2	264Va.c. 60Hz	Output "+" / "-" to earth	Normal :	--	0.384mApk	60	ES1
			Abnormal : Overload	--	0.384mApk	60	
			Signal fault : R17 short	--	0.406mApk	60	
			Signal fault : C9 short	--	0.384mApk	60	
			Signal fault : D8 short	--	0.384mApk	60	
			Signal fault : OT1 Pin1-2 short	--	0.384mApk	60	
			Signal fault : OT1 Pin3-4 short	--	0.384mApk	60	
			Signal fault : OT1 Pin1 open	--	0.384mApk	60	

			Signal fault : OT1 Pin3 open	--	0.384mA _{pk}	60	
3	264Va.c. 60Hz	LAN Pin 1, 2 / Pin 4, 5 to Pin 3, 6/ Pin 7, 8	Normal :	0	--	--	ES1
			Abnormal : Overload	0	--	--	
			Signal fault : R17 short	0	--	--	
			Signal fault : C9 short	0	--	--	
			Signal fault : D8 short	0	--	--	
			Signal fault : OT1 Pin1-2 short	0	--	--	
			Signal fault : OT1 Pin3-4 short	0	--	--	
			Signal fault : OT1 Pin1 open	0	--	--	
			Signal fault : OT1 Pin3 open	0	--	--	
			Signal fault : U1 Pin1-24 short	0	--	--	
4	264Va.c. 60Hz	LAN port to earth	Normal :	--	0.384mA _{pk}	60	ES1
			Abnormal : Overload	--	0.384mA _{pk}	60	
			Signal fault : R17 short	--	0.406mA _{pk}	60	
			Signal fault : C9 short	--	0.384mA _{pk}	60	
			Signal fault : D8 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin1-2 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin3-4 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin1 open	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin3 open	--	0.384mA _{pk}	60	

Model No.: G0720-360-075

1	264Va.c. 60Hz	Output "+" to "-"	Normal :	36.23V _{dc}		DC	ES1
			Abnormal : Overload	Max. 36.23V _{dc}	--	DC	
			Signal fault : R17 short	0	--	--	
			Signal fault : C9 short	0	--	--	

			Signal fault : D8 short	0	--	--	
			Signal fault : OT1 Pin1-2 short	0	--	--	
			Signal fault : OT1 Pin3-4 short	0	--	--	
			Signal fault : OT1 Pin1 open	0	--	--	
			Signal fault : OT1 Pin3 open	0	--	--	
2	264Va.c. 60Hz	Output "+" "-" to earth	Normal :	--	0.384mA _{pk}	60	ES1
			Abnormal : Overload	--	0.384mA _{pk}	60	
			Signal fault : R17 short	--	0.406mA _{pk}	60	
			Signal fault : C9 short	--	0.384mA _{pk}	60	
			Signal fault : D8 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin1-2 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin3-4 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin1 open	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin3 open	--	0.384mA _{pk}	60	
4	264Va.c. 60Hz	LAN Pin 1, 2 / Pin 4, 5 to Pin 3, 6 / Pin 7, 8	Normal :	0	--	--	ES1
			Abnormal : Overload	0	--	--	
			Signal fault : R17 short	0	--	--	
			Signal fault : C9 short	0	--	--	
			Signal fault : D8 short	0	--	--	
			Signal fault : OT1 Pin1-2 short	0	--	--	
			Signal fault : OT1 Pin3-4 short	0	--	--	
			Signal fault : OT1 Pin1 open	0	--	--	
			Signal fault : OT1 Pin3 open	0	--	--	
			Signal fault : U1 Pin1-24 short	0	--	--	
4	264Va.c.	LAN port to	Normal :	--	0.384mA _{pk}	60	ES1

	60Hz	earth	Abnormal : Overload	--	0.384mA _{pk}	60	
			Signal fault : R17 short	--	0.406mA _{pk}	60	
			Signal fault : C9 short	--	0.384mA _{pk}	60	
			Signal fault : D8 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin1-2 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin3-4 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin1 open	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin3 open	--	0.384mA _{pk}	60	

Model No.: G0720-560-053

1	264Va.c. 60Hz	Output "+" to "-"	Normal :	56.12V _{dc}		DC	ES1
			Abnormal : Overload	Max. 56.12V _{dc}	--	DC	
			Signal fault : R17 short	0	--	--	
			Signal fault : C9 short	0	--	--	
			Signal fault : D8 short	0	--	--	
			Signal fault : OT1 Pin1-2 short	0	--	--	
			Signal fault : OT1 Pin3-4 short	0	--	--	
			Signal fault : OT1 Pin1 open	0	--	--	
			Signal fault : OT1 Pin3 open	0	--	--	
2	264Va.c. 60Hz	Output "+" / "-" to earth	Normal :	--	0.384mA _{pk}	60	ES1
			Abnormal : Overload	--	0.384mA _{pk}	60	
			Signal fault : R17 short	--	0.406mA _{pk}	60	
			Signal fault : C9 short	--	0.384mA _{pk}	60	
			Signal fault : D8 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin1-2 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin3-4 short	--	0.384mA _{pk}	60	

			Signal fault : OT1 Pin1 open	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin3 open	--	0.384mA _{pk}	60	
3	264Va.c. 60Hz	LAN Pin 1, 2 / Pin 4, 5 to Pin 3, 6/ Pin 7, 8	Normal :	0	--	--	ES1
			Abnormal : Overload	0	--	--	
			Signal fault : R17 short	0	--	--	
			Signal fault : C9 short	0	--	--	
			Signal fault : D8 short	0	--	--	
			Signal fault : OT1 Pin1-2 short	0	--	--	
			Signal fault : OT1 Pin3-4 short	0	--	--	
			Signal fault : OT1 Pin1 open	0	--	--	
			Signal fault : OT1 Pin3 open	0	--	--	
			Signal fault : U1 Pin1-24 short	0	--	--	
4	264Va.c. 60Hz	LAN port to earth	Normal :	--	0.384mA _{pk}	60	ES1
			Abnormal : Overload	--	0.384mA _{pk}	60	
			Signal fault : R17 short	--	0.406mA _{pk}	60	
			Signal fault : C9 short	--	0.384mA _{pk}	60	
			Signal fault : D8 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin1-2 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin3-4 short	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin1 open	--	0.384mA _{pk}	60	
			Signal fault : OT1 Pin3 open	--	0.384mA _{pk}	60	

Note:

5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	

1	264Va.c. 60Hz	Between L & N (X capacitor C1)	Normal	242	380	ES3
			Abnormal	--	--	--
			Single fault	--	--	--

Overall capacity: C1=0.22 μ F $\pm$ 10%;
Limit: ES1=60V; ES2=120V.

5.2.2.4 - Single Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

5.2.2.5 - Repetitive Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

Test Conditions: Normal – Full load and no load.

Abnormal – Overload output

Supplementary information: SC=Short Circuit, OC=Open Circuit

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	90V / 60Hz	264V / 50Hz	90V / 60Hz	264V / 50Hz	—
	Ambient Tmin (°C) :	--	--	--	--	—
	Ambient Tmax (°C) :	--	--	--	--	—
	Tma (°C) :	40.0	40.0	40.0	40.0	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T _{max} (°C)
		Label up		Label down		
Model No.: G0720-240-100						
AC inlet (CON3)		61.8	57.7	63.3	58.0	70
Varistor (MOV1)		76.2	63.5	76.1	62.9	85
X-cap (C1)		72.3	60.6	71.3	59.5	100
L1 winding		104.6	73.9	101.9	72.0	130
L1 bobbin		100.1	70.9	97.2	70.5	130
E-cap(C2)		93.4	77.3	92.2	75.0	105
PCB near RT1		93.0	81.9	92.8	82.0	130

PCB near Q1	100.4	95.3	99.9	96.2	130
PCB near U1	104.2	96.7	103.2	93.8	130
Y-cap(C13)	84.8	83.2	84.9	84.8	125
Optocoupler (OT1)	90.1	88.4	89.8	90.3	110
PCB near D3	86.9	69.6	85.6	67.5	130
T1 winding	101.8	99.8	104.5	101.4	110
T1 core	98.2	96.8	101.2	97.8	110
L2 winding	100.2	96.5	99.7	92.5	130
PCB under U2	76.4	74.8	76.1	78.3	130
PCB near U3	104.9	98.1	105.2	94.7	130
E-cap(C11)	85.7	82.0	88.5	85.3	105
Plastic enclosure near T1, inside	84.6	81.4	83.5	81.0	100
Ambient	40.0	40.0	40.0	40.0	--
Below points are tested based on ambient at 25°C					
AC Intel surface	43.7	39.3	44.3	39.1	77
Output terminal surface	41.3	41.5	41.4	41.6	60
Plastic enclosure near T1, outside	58.6	56.4	57.8	57.6	77
Ambient	25.0	25.0	25.0	25.0	--
Model No.: G0720-360-075					
AC inlet (CON3)	62.5	57.4	64.2	59.5	70
Varistor (MOV1)	77.2	63.7	77.4	63.1	85
X-cap (C1)	76.6	61.5	74.9	60.1	100
L1 winding	113.6	76.1	109.5	74.8	130
L1 bobbin	110.4	71.3	103.5	70.8	130
E-cap(C2)	97.7	79.0	94.2	77.5	105
PCB near RT1	93.3	86.7	91.1	83.9	130
PCB near Q1	104.4	100.6	102.7	96.4	130
PCB near U1	100.9	98.0	98.4	93.9	130
Y-cap(C13)	85.8	85.9	87.3	89.4	125
Optocoupler (OT1)	96.2	86.2	93.2	89.3	110
PCB near D3	89.2	87.5	95.2	87.8	130
T1 winding	102.7	100.6	104.3	101.6	110
T1 core	99.6	97.7	100.5	98.3	110
L2 winding	107.6	99.5	107.0	98.0	130
PCB under U2	73.7	70.9	74.9	70.4	130
PCB near U3	92.8	88.4	93.4	89.6	130
E-cap(C11)	99.5	94.1	96.8	90.6	105
Plastic enclosure near T1, inside	83.4	79.5	83.1	78.1	100
Ambient	40.0	40.0	40.0	40.0	--
Below points are tested based on ambient at 25°C					

AC Intel surface	43.3	38.7	43.5	39.9	77		
Output terminal surface	43.8	42.6	43.7	43.6	60		
Plastic enclosure near T1, outside	57.3	54.7	55.6	56.5	77		
Ambient	25.0	25.0	25.0	25.0	--		
Model No.: G0720-560-053							
AC inlet (CON3)	63.2	58.2	65.4	61.0	70		
Varistor (MOV1)	77.8	62.2	75.7	63.9	85		
X-cap (C1)	82.3	64.8	84.3	61.0	100		
L1 winding	115.1	87.2	118.4	89.7	130		
L1 bobbin	111.0	82.5	113.3	84.0	130		
E-cap(C2)	98.3	80.1	93.4	80.0	105		
PCB near RT1	95.5	75.4	95.9	88.5	130		
PCB near Q1	109.5	103.5	110.5	101.1	130		
PCB near U1	101.0	96.3	99.8	96.8	130		
Y-cap(C13)	87.4	84.4	85.9	85.8	125		
Optocoupler (OT1)	97.8	90.2	94.7	90.5	110		
PCB near D3	92.8	88.7	96.6	91.5	130		
T1 winding	102.6	103.0	105.5	104.8	110		
T1 core	98.0	97.6	100.0	100.7	110		
L2 winding	97.1	99.6	90.5	98.8	130		
PCB under U2	68.0	66.1	68.8	65.0	130		
PCB near U3	83.5	76.3	82.6	76.7	130		
E-cap(C11)	96.8	98.9	98.9	96.2	105		
Plastic enclosure near T1, inside	81.3	80.3	81.3	79.3	100		
Ambient	40.0	40.0	40.0	40.0	--		
Below points are tested based on ambient at 25°C							
AC Intel surface	44.8	37.6	45.6	43.0	77		
Output terminal surface	41.2	39.5	44.7	40.0	60		
Plastic enclosure near T1, outside	56.0	57.4	55.8	54.6	77		
Ambient	25.0	25.0	25.0	25.0	--		
Supplementary information:							
Note 1: The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 40°C.							
Note 2: The temperatures were measured under the worse case normal mode defined in clause B.2.1.							
Note 3. Temperature limits are calculated as follows:							
Winding components providing safety isolation: Class B → Tmax = 120 - 10=110 °C							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:

Note 1: Tma should be considered as directed by applicable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics		N/A
Penetration (mm)			—
Object/ Part No./Material	Manufacturer/trademark	T softening (°C)	
--	--	--	
supplementary information:			

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			N/A
Allowed impression diameter (mm) :		≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
--	--	--	--	
Supplementary information:				

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)	Required cl (mm) ¹	cl (mm) ²	Required ³ cr (mm)	cr (mm)
Line and Neutral before fuse F1 on PCB trace(B)	420	250	0.06	1.9*	3.0	2.5	3.0
Different polarity of fuse F1 on PCB trace (B)	420	250	0.06	1.9*	3.0	2.5	3.0
Primary trace to PE trace (B)	420	250	0.06	1.9*	4.0	2.5	4.0
Primary traces to secondary traces under Y- Capacitor C13 (R)	420	250	0.06	3.8*	7.7	5.0	7.7
Primary traces to secondary traces under optocoupler OT1 (R)	420	250	0.06	3.8*	7.4	5.0	7.4
Primary traces to secondary traces under transformer T1 (R)	580	278	66.0k	3.8*	8.4	5.6	8.4
Transformer T1 : primary winding to secondary pins (R)	580	278	66.0k	3.8*	10.0	5.6	10.0
Transformer T1 : core to secondary pins (R)	580	278	66.0k	3.8*	10.0	5.6	10.0
Transformer T1 : core to secondary C11 (10N applied) (R)	580	278	66.0k	3.8*	7.5	5.6	7.5
X- Capacitor C1 (10N applied) to outside of enclosure (R)	420	250	0.06	3.8*	6.4	5.0	>6.4
Thermistor RT1 (10N applied) to outside of enclosure (R)	420	250	0.06	3.8*	5.3	5.0	5.3

Supplementary information:

1) Triple insulated wire used as secondary winding of T1. Core of T1 is considered as primary. 2 layer insulation

tape wrapped around external of T1, 2 layers of insulation tape wrapped on bottom and side of core nearby secondary circuit.

2) Protective bonding conductors soldered into earth pin of AC inlet by hooking-in, all internal wires solder to PCB are additionally fixed with glue.

3) The transformers construction refers to appended table G.5.3.

4) Unless otherwise specified, the worst case conditions of Cl. & Cr. in above mentioned locations have been considered and listed.

5) *The maximum operating altitude of 5000m. Therefore the requirements of IEC 60664-1 for clearances were considered and the required clearance was multiplied with an altitude correction factor of 1.48.

6) F=Functional insulation, B= Basic insulation, R=Reinforced insulation.

Note 1: Only for frequency above 30 kHz

Note 2: See table 5.4.2.4 if this is based on electric strength test

Note 3: Provide Material Group IIIa/IIIb.

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage			P
	Overvoltage Category (OV):			II
	Pollution Degree:			2
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)
See table 5.4.2.2, 5.4.2.4 and 5.4.3 above.		2500V _{peak}	1.5*1.48=2.3 for BI/SI 3.0*1.48=4.5 for RI	See table 5.4.2.2, 5.4.2.4 and 5.4.3 above.
Supplementary information:				

5.4.2.4	TABLE: Clearances based on electric strength test			N/A
Test voltage applied between:		Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No
--		--	--	--
Supplementary information: Using procedure 2 to determine the clearance.				

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					P
Distance through insulation di at/of:	Peak voltage (V)	Frequency (Hz)	Material	Required DTI (mm)	DTI (mm)	
Plastic Enclosure (R)	420	0.06	1)	0.4	1)	
Optocoupler (R)	420	0.06	1)	0.4	1)	
Bobbin of T1 (R)	580	66.0k	1)	0.4	1)	
Supplementary information: See also sub-clause 5.4.4.9.						
1) See appended table 4.1.2 for details.						
B= Basic insulation; R= Reinforced insulation						

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (Vdc)	Breakdown Yes / No

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (Vdc)	Breakdown Yes / No
Basic/supplementary:				
L and N (with fuse disconnect)		DC	2500	No
L/N and PE		DC	2500	No
Reinforced:				
L/N and Output connector		DC	4000	No
L/N and plastic enclosure with metal foil		DC	4000	No
Transformer T1				
Transformer T1 : primary pin and secondary pin		DC	4000	No
Transformer T1 : core and secondary pins		DC	4000	No
1 layer of insulation tape of all transformers		DC	4000	No
Supplementary information:				
1. Core of transformer T1 was considered as primary part. Test after humidity treatment, heating test, and for unit primary to secondary, primary to earth electric strength after each fault condition test. Tests were performed on product with each source listed in table 4.1.2.				
2. The DC voltage source was performed on all testing once in forward and once in reverse.				

5.5.2.2	TABLE: Stored discharge on capacitors				P
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
264Vac, 60Hz	Phase to Neutral	N	--	20	ES1
264Vac, 60Hz	Phase to Neutral	S (R20 open circuit)	--	54	ES1
Supplementary information:					
The end system will be pluggable equipment type A. Limit of ES1 applied for mains terminal as accessible part for ordinary persons.					
X-capacitors installed for testing are: C1=0.22uF±10%					
☒ bleeding resistor rating: R20=R21=R22=R23=3.3M ohm.					
☐ ICX:					
Notes:					
A. Test Location:					
Phase to Neutral; Phase to Earth; and/or Neutral to Earth					
B. Operating condition abbreviations:					
N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition					

5.6.6.2	TABLE: Resistance of protective conductors and terminations				P
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
Inlet earthing pin to secondary earthing	32A	2min	0.26	0.008ohm	
Supplementary Information:					

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		P
Supply voltage	264Vac	—	
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)	
Earthed part	1 (e open, normal and reverse polarity p)	0.254/0.269	
--	2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)	--	
--	3 (for IT system, each phase conductor faulted to earth, one at a time (switch g)	--	
--	4 (for three-phase, each phase conductor open, one at a time switches l)	--	
--	5 (IT power system or three phase delta system)	--	
--	6 (three-phase for use on centre-earthed dalta supply system)	--	
--	8 (incidental electrically connected to other parts)	--	
Notes: [1] Supply voltage is the anticipated maximum Touch Voltage [2] Earthed neutral conductor [Voltage differences less than 1% or more] [3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3 [4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable. [5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided. a) Not considered IT power system. b) Not three phase equipment. c) Not IT power system or three phase delta system. d) Not three-phase for use on centre-earthed dalta supply system. e) Not such parts.			

6.2.2	Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s ^{*)}	PS Classification
Power supply	Normal operation	Power (W) :	>100	>100	PS3
		V _A (V) :	240	240	
		I _A (A) :	--	--	
Model: G0720-240-100					
Output “+” to “-”	Normal operation	Power (W) :	34.28	34.28	PS2
		V _A (V) :	22.55	22.55	
		I _A (A) :	1.52	1.52	

	R17 shorted	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	OT1 pin 1-2 Shorted	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	OT1 pin 3-4 Shorted	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	OT1 pin 1 opened	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	OT1 pin 3 opened	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	D8 shorted	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	

Model: 0720-360-075

Output “+” to “-”	Normal operation	Power (W) :	38.82	38.82	PS2
		V _A (V) :	33.47	33.47	
		I _A (A) :	1.16	1.16	
	R17 shorted	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	OT1 pin 1-2 Shorted	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	OT1 pin 3-4 Shorted	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	OT1 pin 1 opened	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	OT1 pin 3 opened	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	D8 shorted	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	

Model: G0720-560-053

Output “+” to “-”	Normal operation	Power (W) :	39.24	39.24	PS2
		V _A (V) :	54.5	54.5	
		I _A (A) :	0.72	0.72	
	R17 shorted	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	OT1 pin 1-2 Shorted	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	OT1 pin 3-4 Shorted	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	OT1 pin 1 opened	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	OT1 pin 3 opened	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
	D8 shorted	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	

Supplementary Information:

*) Measurement taken only when limits at 3 seconds exceed PS1 limits

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)				P
Location	Open circuit voltage After 3 s (V _p)	Measured r.m.s current (I _{rms})	Calculated value (V _p × I _{rms})	Arcing PIS? Yes / No	
All internal circuits/ components	--	--	--	Yes (declaration)	

Supplementary information:

An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.
All conductors and devices are considered as PIS.

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)				P
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No

All internal circuits/ components	--	--	--	--	Yes (declaration)
Supplementary Information: All power dissipating components in primary and secondary circuit are considered as resistive PIS due to the available power as declared by manufacturer. A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter. If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification. A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, <u>or</u> (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.					

8.5.5	TABLE: High Pressure Lamp		N/A
Description	Values	Energy Source Classification	
Lamp type :		—	
Manufacturer:		—	
Cat no.:		—	
Pressure (cold) (MPa) :		MS_	
Pressure (operating) (MPa):		MS_	
Operating time (minutes):		—	
Explosion method :		—	
Max particle length escaping enclosure (mm) .:		MS_	
Max particle length beyond 1 m (mm) :		MS_	
Overall result :			
Supplementary information:			

B.2.5	TABLE: Input test						P
U (V/Hz)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
Model: G0720-240-100							
90Vac/50	0.509	--	28.8	--	F1	0.509	Max. normal load 24.0Vdc, 1.0A
90Vac/60	0.513	--	28.8	--	F1	0.513	
100Vac/50	0.467	0.75	28.5	--	F1	0.467	
100Vac/60	0.473	0.75	28.5	--	F1	0.473	
240Vac/50	0.230	0.75	27.9	--	F1	0.230	
240Vac/60	0.223	0.75	27.8	--	F1	0.223	
264Vac/50	0.213	--	27.9	--	F1	0.213	
264Vac/60	0.211	--	27.8	--	F1	0.211	
Model No.: G0720-360-075							
90Vac/50	0.561	--	31.6	--	F1	0.561	Max. normal load 36.0Vdc, 0.75A
90Vac/60	0.578	--	32.1	--	F1	0.578	
100Vac/50	0.513	0.75	31.3	--	F1	0.513	
100Vac/60	0.527	0.75	31.6	--	F1	0.527	

240Vac/50	0.245	0.75	30.1	--	F1	0.245	
240Vac/60	0.238	0.75	30.1	--	F1	0.238	
264Vac/50	0.231	--	30.2	--	F1	0.231	
264Vac/60	0.227	--	30.4	--	F1	0.227	
Model No.: G0720-560-053							
90Vac/50	0.604	--	34.1	--	F1	0.604	Max. normal load 56.0Vdc, 0.53A
90Vac/60	0.605	--	34.3	--	F1	0.605	
100Vac/50	0.543	0.75	33.9	--	F1	0.543	
100Vac/60	0.549	0.75	34.2	--	F1	0.549	
240Vac/50	0.262	0.75	32.7	--	F1	0.262	
240Vac/60	0.264	0.75	32.6	--	F1	0.264	
264Vac/50	0.246	--	32.8	--	F1	0.246	
264Vac/60	0.243	--	32.7	--	F1	0.243	
Supplementary information: The maximum measured current under rated voltage did not exceed 110% of the rated current.							

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C)					25°C, if not specified			—
Power source for EUT: Manufacturer, model/type, output rating :					--			—
Component No.	Abnormal Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	T-couple	Temp. (°C)	Observation
Model: G0720-240-100								
Output "+" to "-"	O-L	264	7hr 52min	F1	0.213→ 0.223→ 0.240→ 0.261→ 0.014	Type J	T1 winding : 130.4°C; T1 core : 124.9°C; Ambient : 40.0°C; AC Intel surface : 50.9°C; Output terminal surface : 46.7°C; Plastic enclosure near T1, outside : 68.3°C; Ambient : 25.0°C	Max. overload current is 1.35A, unit shutdown when load to 1.36A, no damage, no hazards.

T1 output	O-L	264	8hr 41min	F1	0.213→ 0.226→ 0.250→ 0.271→ 0.014	Type J	T1 winding : 132.5°C; T1 core : 126.4°C; Ambient : 40.0°C; AC Intel surface : 50.7°C; Output terminal surface : 42.9°C; Plastic enclosure near T1, outside : 69.7°C; Ambient : 25.0°C	Max. overload current is 0.37A, unit shutdown when load to 0.38A, no damage, no hazards.
Model No.: G0720-360-075								
Output “+” to “-”	O-L	264	6hr 27min	F1	0.231→ 0.253→ 0.270→ 0.284→ 0.014	Type J	T1 winding : 129.4°C; T1 core : 121.4°C; Ambient : 40.0°C; AC Intel surface : 44.3°C; Output terminal surface : 47.9°C; Plastic enclosure near T1, outside : 64.4°C; Ambient : 25.0°C	Max. overload current is 1.05A, unit shutdown when load to 1.06A, no damage, no hazards.
T1 output	O-L	264	8hr 38min	F1	0.231→ 0.264→ 0.284→ 0.297→ 0.014	Type J	T1 winding : 135.0°C; T1 core : 125.0°C; Ambient : 40.0°C; AC Intel surface : 43.9°C; Output terminal surface : 48.7°C; Plastic enclosure near T1, outside : 70.9°C; Ambient : 25.0°C	Max. overload current is 0.33A, unit shutdown when load to 0.34A, no damage, no hazards.
Model No.: G0720-560-053								
Output “+” to “-”	O-L	264	6hr 34min	F1	0.246→ 0.289→ 0.335→ 0.014	Type J	T1 winding : 137.9°C; T1 core : 119.5°C; Ambient : 40.0°C; AC Intel surface : 49.7°C; Output terminal surface : 47.0°C; Plastic enclosure near T1, outside : 67.5°C; Ambient : 25.0°C	Max. overload current is 0.65A, unit shutdown after working for 14min when load to 0.70A, no damage, no hazards.

T1 output	O-L	264	6hr 25min	F1	0.243→ 0.294→ 0.349→ 0.014	Type J	T1 winding : 143.5°C; T1 core : 130.6°C; Ambient : 40.0°C; AC Intel surface : 51.2°C; Output terminal surface : 48.1°C; Plastic enclosure near T1, outside : 71.1°C; Ambient : 25.0°C	Max. overload current is 0.20A, unit shutdown when load to 0.21A, no damage, no hazards.
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Supplementary information:

- 1) O-L: Overloaded
- 2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.
- 3) The overloaded condition is applied according to annex G.5.3.3.
- 4) Winding temperature Limit for T1: 175-10=165°C

B.4		TABLE: Fault condition tests						P
Ambient temperature (°C)							25°C, if not specified	—
Power source for EUT: Manufacturer, model/type, output rating ..							--	—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Model: G0720-240-100								
D1	S-C	264	1s	F1	0	--	--	F1 opened immediately. After testing, no hazards.
C2	S-C	264	1s	F1	0	--	--	F1 opened immediately. After testing, no hazards.
Q1 Pin G-S	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
Q1 Pin G-D	S-C	264	1s	F1	0	--	--	F1 opened immediately. After testing, no hazards.
Q1 Pin S-D	S-C	264	1s	F1	0	--	--	F1 opened immediately, R16, R17 damaged. After testing, no hazards.
R17	S-C	264	1s	F1	0	--	--	F1 opened immediately. After testing, no hazards.

D2	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
U1 Pin 2-5	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
U1 Pin 2-6	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
OT1 Pin1-2	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
OT1 Pin3-4	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
OT1 Pin1	O-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
OT1 Pin3	O-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
T1 Pin2-4	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
T1 Pin5-7	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
T1 PinA-B	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
D8	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.

C9	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
C11	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
Output	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
Model No.: G0720-360-075								
D1	S-C	264	1s	F1	0	--	--	F1 opened immediately. After testing, no hazards.
C2	S-C	264	1s	F1	0	--	--	F1 opened immediately. After testing, no hazards.
Q1 Pin G-S	S-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
Q1 Pin G-D	S-C	264	1s	F1	0	--	--	F1 opened immediately. After testing, no hazards.
Q1 Pin S-D	S-C	264	1s	F1	0	--	--	F1 opened immediately, R16, R17 damaged. After testing, no hazards.
R17	S-C	264	1s	F1	0	--	--	F1 opened immediately. After testing, no hazards.
D2	S-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
U1 Pin 2-5	S-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
U1 Pin 2-6	S-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.

OT1 Pin1-2	S-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
OT1 Pin3-4	S-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
OT1 Pin1	O-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
OT1 Pin3	O-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
T1 Pin2-4	S-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
T1 Pin5-7	S-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
T1 PinA-B	S-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
D8	S-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
C9	S-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
C11	S-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
Output	S-C	264	10min	F1	0.015	--	--	Unit shut down immediately. After testing, no damaged, no hazards.

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D1	S-C	264	1s	F1	0	--	--	F1 opened immediately. After testing, no hazards.
C2	S-C	264	1s	F1	0	--	--	F1 opened immediately. After testing, no hazards.
Q1 Pin G-S	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
Q1 Pin G-D	S-C	264	1s	F1	0	--	--	F1 opened immediately. After testing, no hazards.
Q1 Pin S-D	S-C	264	1s	F1	0	--	--	F1 opened immediately, R16, R17 damaged. After testing, no hazards.
R17	S-C	264	1s	F1	0	--	--	F1 opened immediately. After testing, no hazards.
D2	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
U1 Pin 2-5	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
U1 Pin 2-6	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
OT1 Pin1-2	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
OT1 Pin3-4	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
OT1 Pin1	O-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.

OT1 Pin3	O-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
T1 Pin2-4	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
T1 Pin5-7	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
T1 PinA-B	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
D8	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
C9	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
C11	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.
Output	S-C	264	10min	F1	0.014	--	--	Unit shut down immediately. After testing, no damaged, no hazards.

Supplementary information:

1) S-C: Short-circuited; O-C: Open-circuited.

2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.

3) The same as result test conducted on all fuse sources when fuse opened, all fuse sources see table 4.1.2 for details.

Annex M	TABLE: Batteries					N/A
The tests of Annex M are applicable only when appropriate battery data is not available						
Is it possible to install the battery in a reverse polarity position?:						
	Non-rechargeable batteries		Rechargeable batteries			
	Discharging	Un-	Charging	Discharging	Reversed charging	

	Meas. current	Manuf. Specs.	intentional charging	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	--	--	--	--	--	--	--	--	--
Max. current during fault condition	--	--	--	--	--	--	--	--	--
Test results:							Verdict		
- Chemical leaks							--	--	
- Explosion of the battery							--	--	
- Emission of flame or expulsion of molten metal							--	--	
- Electric strength tests of equipment after completion of tests							--	--	
Supplementary information:									

Annex M.4	Table: Additional safeguards for equipment containing secondary lithium batteries					N/A
Battery/Cell No.	Test conditions	Measurements			Observation	
		U	I (A)	Temp (C)		
--	Normal	--	--	--	--	
--	Abnormal	--	--	--	--	
--	Single fault –SC/OC	--	--	--	--	
Supplementary information:						

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					P
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U _{oc} (V)	I _{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
Model: G0720-240-100						
Output “+” to “-”	Normal condition	24.32	1.52	8	34.28	100
Output “+” to “-”	R17 shorted	0	0	8	0	100
Output “+” to “-”	OT1 pin 1-2 shorted	0	0	8	0	100
Output “+” to “-”	OT1 pin 3-4 shorted	0	0	8	0	100
Output “+” to “-”	OT1 pin 1 opened	0	0	8	0	100
Output “+” to “-”	OT1 pin 3 opened	0	0	8	0	100
Output “+” to “-”	D8 shorted	0	0	8	0	100

Model: 0720-360-075						
Output “+” to “-”	Normal condition	36.23	1.16	4.16	38.82	100
Output “+” to “-”	R17 shorted	0	0	8	0	100
Output “+” to “-”	OT1 pin 1-2 shorted	0	0	8	0	100
Output “+” to “-”	OT1 pin 3-4 shorted	0	0	8	0	100
Output “+” to “-”	OT1 pin 1 opened	0	0	8	0	100
Output “+” to “-”	OT1 pin 3 opened	0	0	8	0	100
Output “+” to “-”	D8 shorted	0	0	8	0	100
Model: G0720-560-053						
Output “+” to “-”	Normal condition	56.12	0.72	2.67	39.24	100
Output “+” to “-”	R17 shorted	0	0	8	0	100
Output “+” to “-”	OT1 pin 1-2 shorted	0	0	8	0	100
Output “+” to “-”	OT1 pin 3-4 shorted	0	0	8	0	100
Output “+” to “-”	OT1 pin 1 opened	0	0	8	0	100
Output “+” to “-”	OT1 pin 3 opened	0	0	8	0	100
Output “+” to “-”	D8 shorted	0	0	8	0	100
Supplementary information: --						

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
	Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	
	Internal component (T.2)	--	--	10	5	No insulation breakdown. No reduction the clearances and creepage distances
	Enclosure top, closed to transformer (T.5)	Plastics	2.4	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.

Enclosure side (T.5)	Plastics	2.4	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure bottom, closed to transformer (T.5)	Plastics	2.4	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.

Supplementary information:

Each source of enclosure in table 4.1.2 was applied and passed the relevant tests.

T.6, T.9	TABLE: Impact tests				P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Enclosure top, closed to transformer (T.6)	Plastics	2.4	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Enclosure side (T.6)	Plastics	2.4	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Enclosure bottom, closed to transformer (T.6)	Plastics	2.4	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	

Supplementary information:

Each source of enclosure in table 4.1.2 was applied and passed the relevant tests.

T.7	TABLE: Drop tests				P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Whole EUT	Plastic	2.4	750	After the test, enclosure remained intact, no cracking/opening developed in the enclosure joint. Internal TS3 were not accessible after test.	

Supplementary information:

Each source of enclosure in table 4.1.2 was applied and passed the relevant tests.

T.8	TABLE: Stress relief test					P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	

Whole equipment	Plastics	2.4	105	7	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Supplementary information: Each source of enclosure in table 4.1.2 was applied and passed the relevant tests.					

Appendix 1:

5.4.1.8	Table: working voltage measurement				P
Location		Peak voltage (V)	RMS voltage (V)	Frequency(Hz)	Comments
Model No.: G0720-240-100					
OT1 Pin 1 to 3		384	199	60	--
OT1 Pin 2 to 3		384	199	60	--
OT1 Pin 1 to 4		384	199	60	--
OT1 Pin 2 to 4		384	199	60	--
C13 primary to secondary		360	192	60	--
T1 Pin 2-A		408	183	66.0k	--
T1 Pin 4-A		424	191	66.0k	--
T1 Pin 5-A		554	255	66.0k	Max. Vpeak of T1
T1 Pin 7-A		512	247	66.0k	--
T1 Pin 2-B		408	180	66.0k	--
T1 Pin 4-B		352	177	66.0k	--
T1 Pin 5-B		504	269	66.0k	Max. Vrms of T1
T1 Pin 7-B		368	237	66.0k	--
Model No.: G0720-360-075					
OT1 Pin 1 to 3		384	198	60	--
OT1 Pin 2 to 3		384	198	60	--
OT1 Pin 1 to 4		384	198	60	--
OT1 Pin 2 to 4		384	198	60	--
C13 primary to secondary		352	178	60	--
T1 Pin 2-A		392	185	63.1k	--
T1 Pin 4-A		408	191	63.1k	--
T1 Pin 5-A		568	248	63.1k	Max. Vpeak of T1
T1 Pin 7-A		528	241	63.1k	--
T1 Pin 2-B		408	182	63.1k	--
T1 Pin 4-B		360	179	63.1k	--
T1 Pin 5-B		512	272	63.1k	Max. Vrms of T1
T1 Pin 7-B		368	235	63.1k	--
Model No.: G0720-560-053					
OT1 Pin 1 to 3		420	202	60	--
OT1 Pin 2 to 3		420	202	60	--
OT1 Pin 1 to 4		420	202	60	--
OT1 Pin 2 to 4		420	202	60	--
C13 primary to secondary		360	168	60	--
T1 Pin 2-A		380	172	64.1k	--
T1 Pin 4-A		400	180	64.1k	--

T1 Pin 5-A	580	246	64.1k	Max. V _{peak} of T1
T1 Pin 7-A	520	241	64.1k	--
T1 Pin 2-B	480	175	64.1k	--
T1 Pin 4-B	380	169	64.1k	--
T1 Pin 5-B	520	278	64.1k	Max. V _{rms} of T1
T1 Pin 7-B	400	235	64.1k	--
Supplementary information: Supply voltage : 240Vac/60Hz				

Appendix 2:

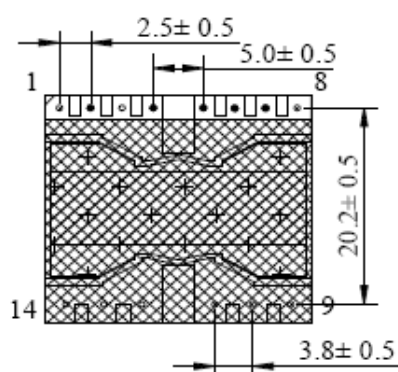
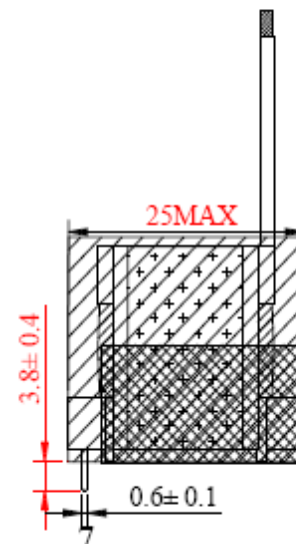
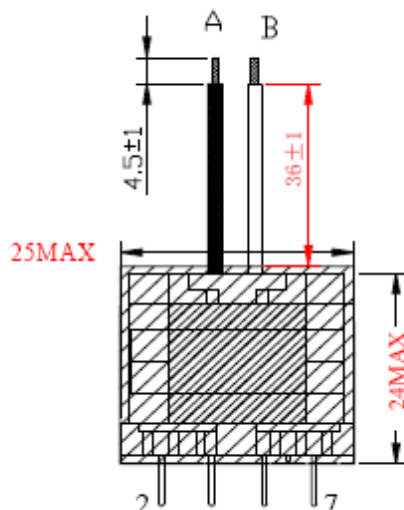
G.5.3	TABLE: transformers						P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
Primary winding to secondary pin	Reinforced insulation	580	278	4000Vdc	4.5*	5.6	2 layers or 0.4mm
Core to secondary pin	Reinforced insulation	580	278	4000Vdc	4.5*	5.6	2 layers or 0.4mm
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measure d creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
Primary winding to secondary winding	Reinforced insulation			4000Vdc	10.0	10.0	TIW
Core to secondary pins	Reinforced insulation			4000Vdc	10.0	10.0	TIW
supplementary information:							
*The equipment is intended to be operated under altitude up to 5000m, so the clearance is multiplied by the altitude correction factor (1.48, linear interpolation used), specified in table A.2 of IEC 60664-1 Concentric windings on bobbin. Triple insulated wires used as secondary winding. Two layers insulation tape wrapped bottom and side of transformer. Primary winding leads exit directly through integral flanges in bobbin and secured soldered to the pins moulded into the bobbin, secondary winding leads exit from the top surface of the bobbin and inserted into the holes in the PCB before soldering and additional fixed by glue. Insulating tube used on each primary and secondary winding for mechanical protection. More details see below:							

G.5.3

TABLE: transformers(T1)

P

1. CONFIGURATION & DIMENSIONS: (UNIT:mm)



NOTE: 8 个脚边为 PIN1-8, 严格控制外观尺寸。

1. PIN1.3.8.9.10.11.12.13.14 CUT OFF.PIN6 CUT OFF2/3.

2. CORE FIXED BY MYLAR TAPE $2 \text{ TS} \times 10 \text{ mm}$.

3. 磁芯中柱磨气隙, 且气隙装于顶部。

4. 产品真空浸油并烘干。

5. A, B 为飞线, A 从 PIN12 顶出, 套黑色套管; B. 从 PIN11 顶出, 套白色套管, 长度如图所示:

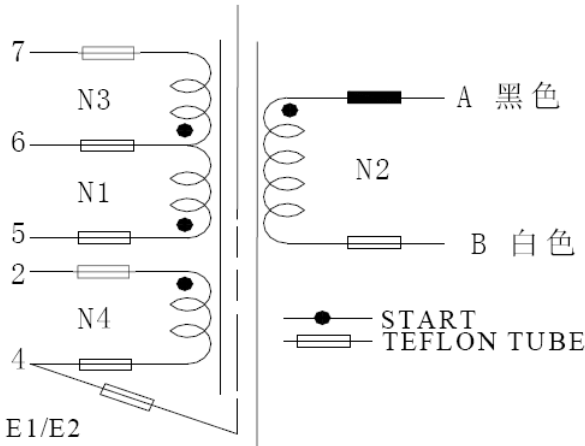
6. 产品固定磁芯后沿线包方向包胶带 $14 \text{ mm} \times 2 \text{ TS}$, 再沿磁芯和线包分别加自粘 $0.05 \times 6 \text{ mm}$ 和自粘 $0.05 \times 8 \text{ mm}$ “十字”外屏蔽 1.1 TS , 十字架交接处也须焊接在一起, 引线加套管接至 PIN4.再沿磁芯方向外包 $10 \text{ mm} \times 2 \text{ TS}$ 胶带, 沿线包方向包 15 mm 胶带 2 TS ;

7. 产品需先用 $35 \times 45 \text{ mm}$ 胶带两层将底部到侧面包住, 并折向次级, 再平底部支点横向包外围胶带 $3 \text{ TS} \times 25 \text{ mm}$ (需高出磁芯 2 mm 以上)。

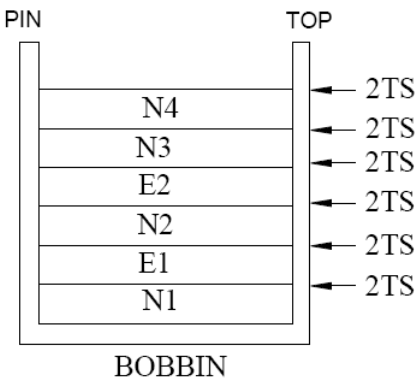
8. 产品顶部贴标签, 字朝 PIN1-8 方向, 标签如图示: YY 代表年份, WW 代表周期;

LT00783V01
P.D.George/Ripley B-19
HSD E240087 YYWW

2. SEQUENCE:



3. WINDING SCHEMATIC:



4.WINDING SPEC:PIN 朝右，其中绕 N4 时候 PIN 朝左

WINDING	WIRE/COPPER FOIL	S — F	TURNS	TAPE	REMARK
N1	MW75 ϕ 0.35 $\times$ 1P	5—6	30TS	2TS	密 绕
E1	COPPER 0.025*8mm	4—	0.9TS	2TS	居 中
N2	TEX-E ϕ 0.45 $\times$ 1P	A—B	23TS	2TS	密 绕
E2	COPPER 0.025*8mm	4—	0.9TS	2TS	居 中
N3	MW75 ϕ 0.35 $\times$ 1P	6—7	25TS	2TS	密 绕
N4	MW75 ϕ 0.25 $\times$ 1P	4—2	11TS	2TS	居中密绕

注：1.绕 N4 时反向。2.按原理图示加套管。

Photo documentation

Photo 1



Photo 2



Photo 3



Photo 4

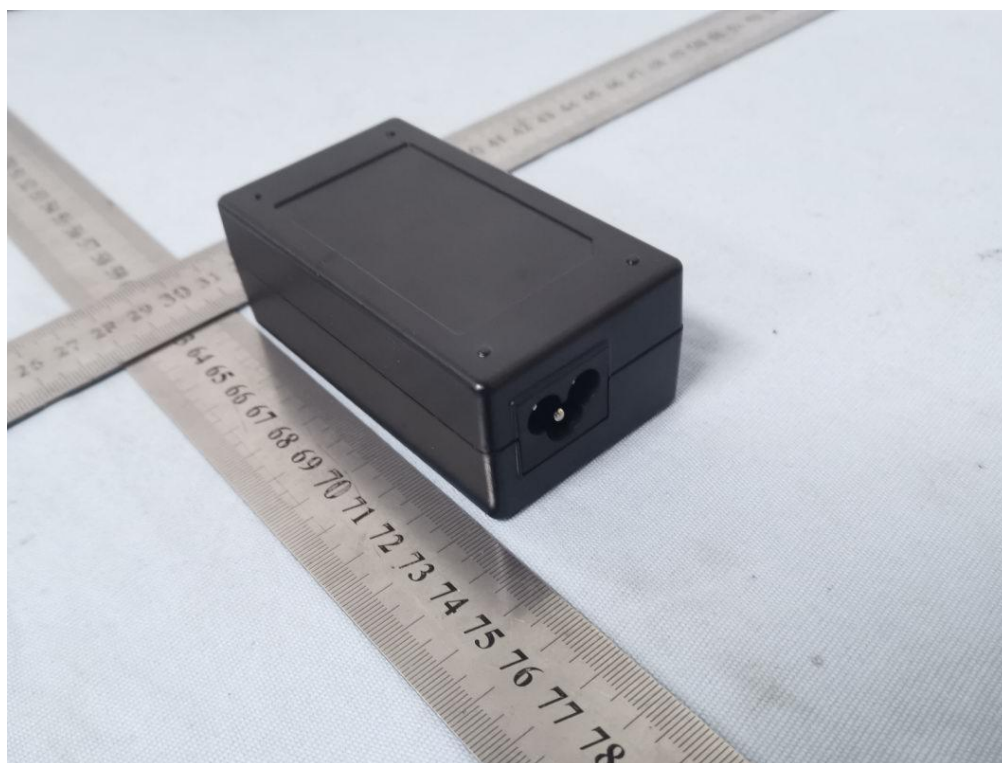


Photo 5



Photo 6



Photo 7



Photo 8

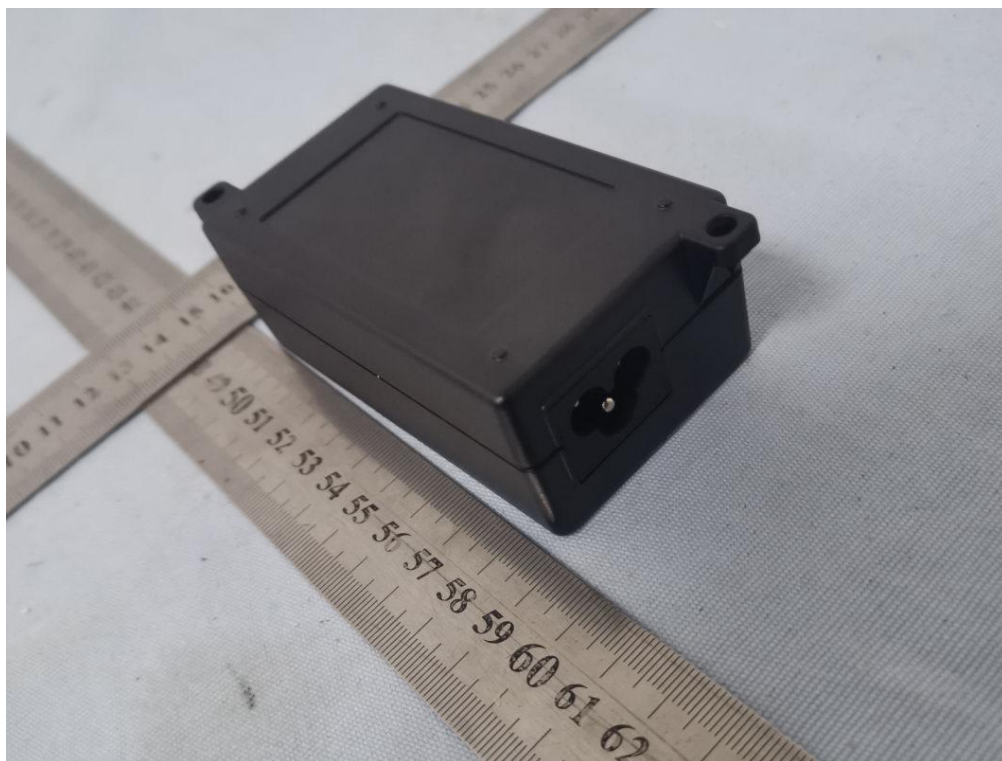


Photo 9



Photo 10

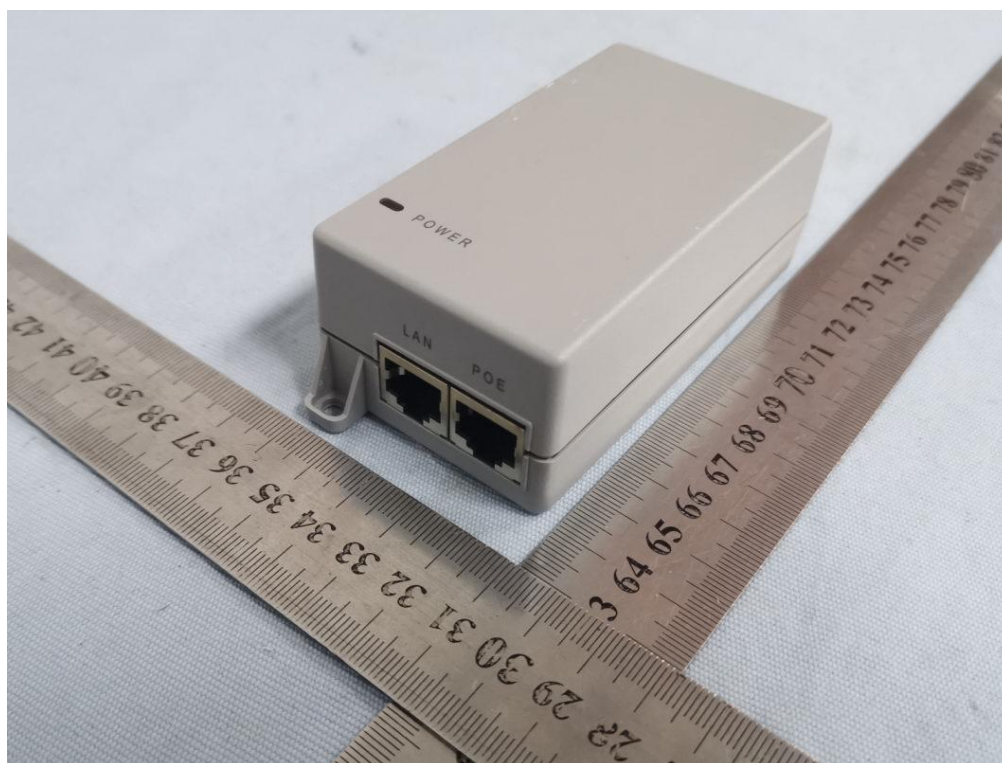


Photo 11



Photo 12

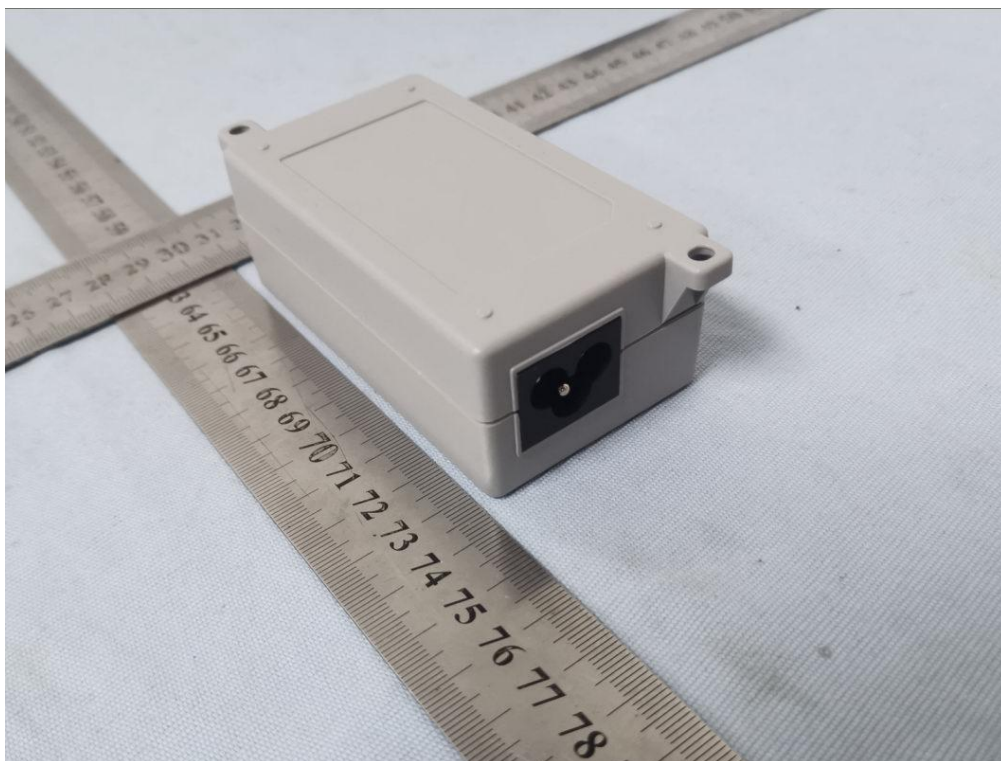


Photo 13



Photo 14

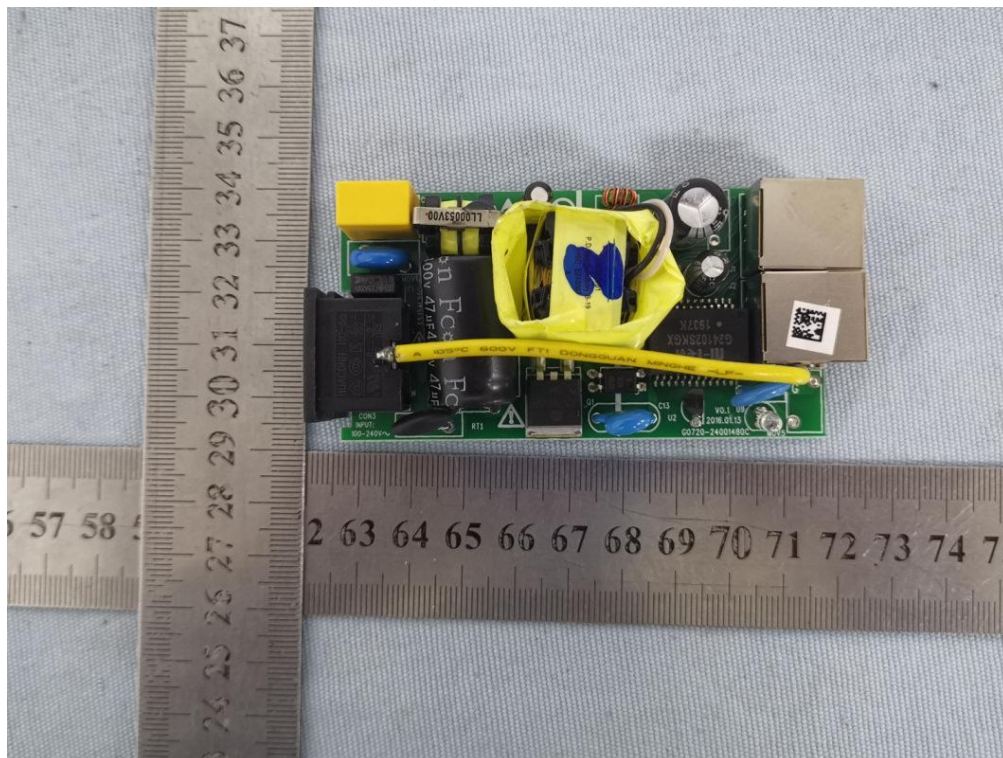


Photo 15

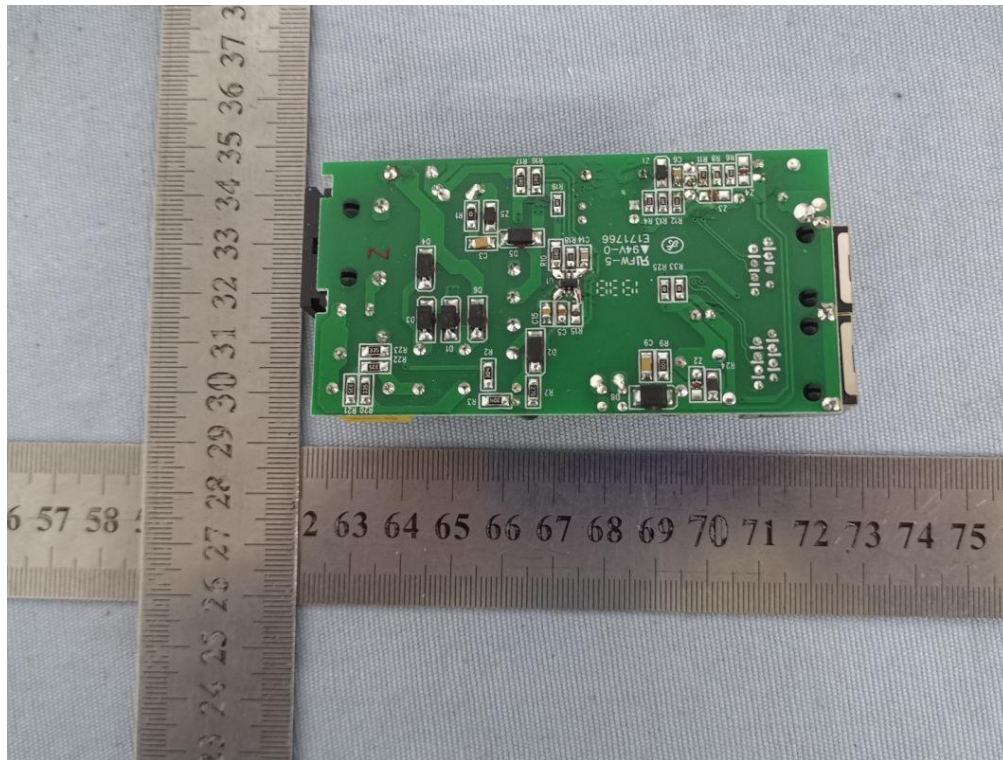


Photo 16 (Alternative PCB Layout side view)

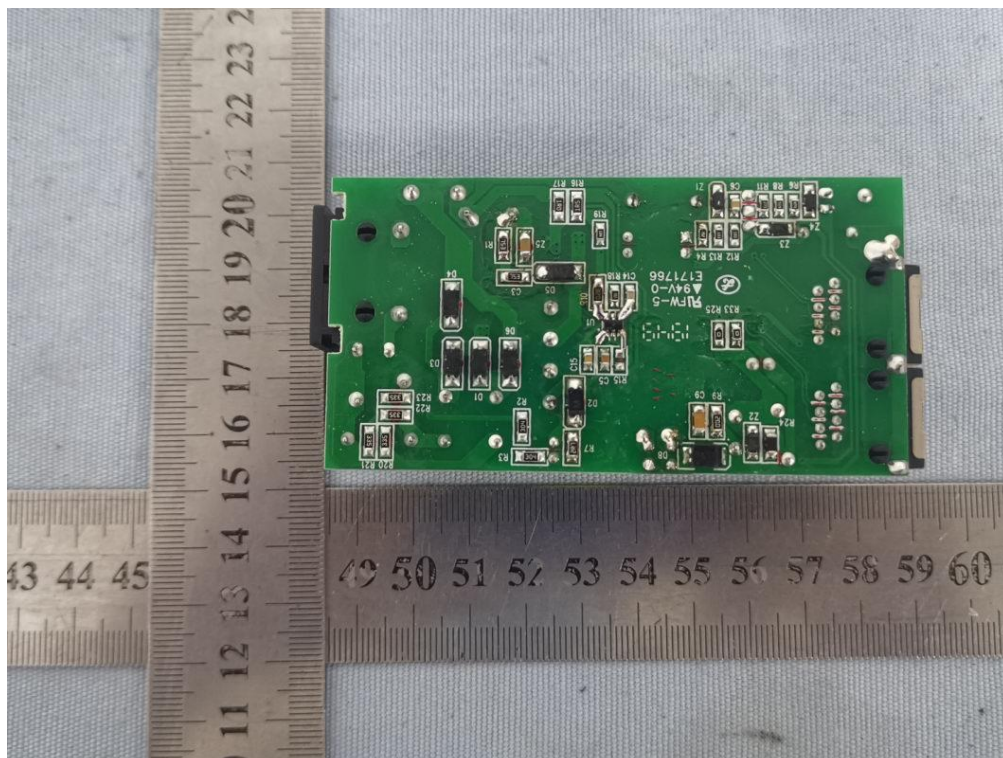


Photo 17

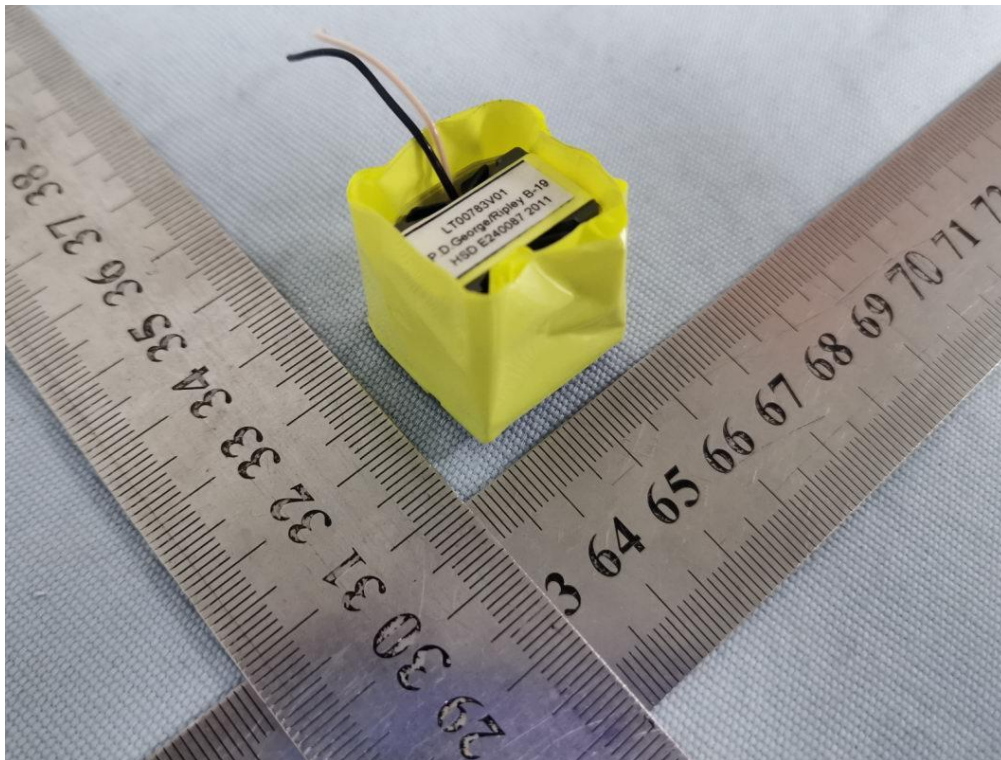


Photo 18

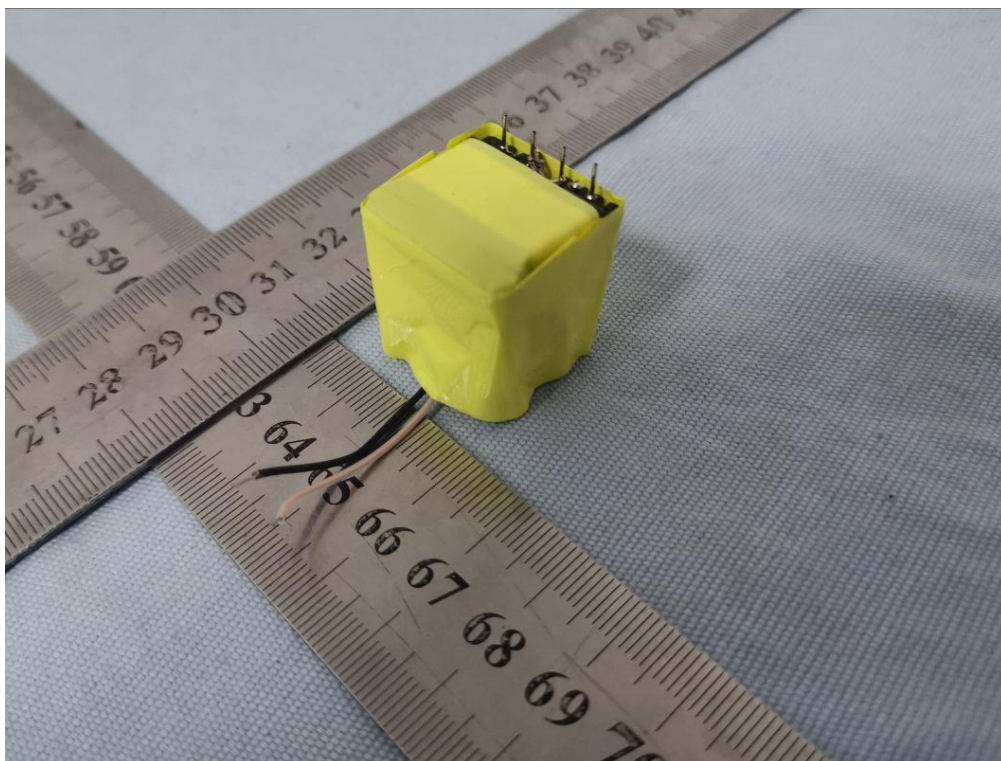


Photo 19

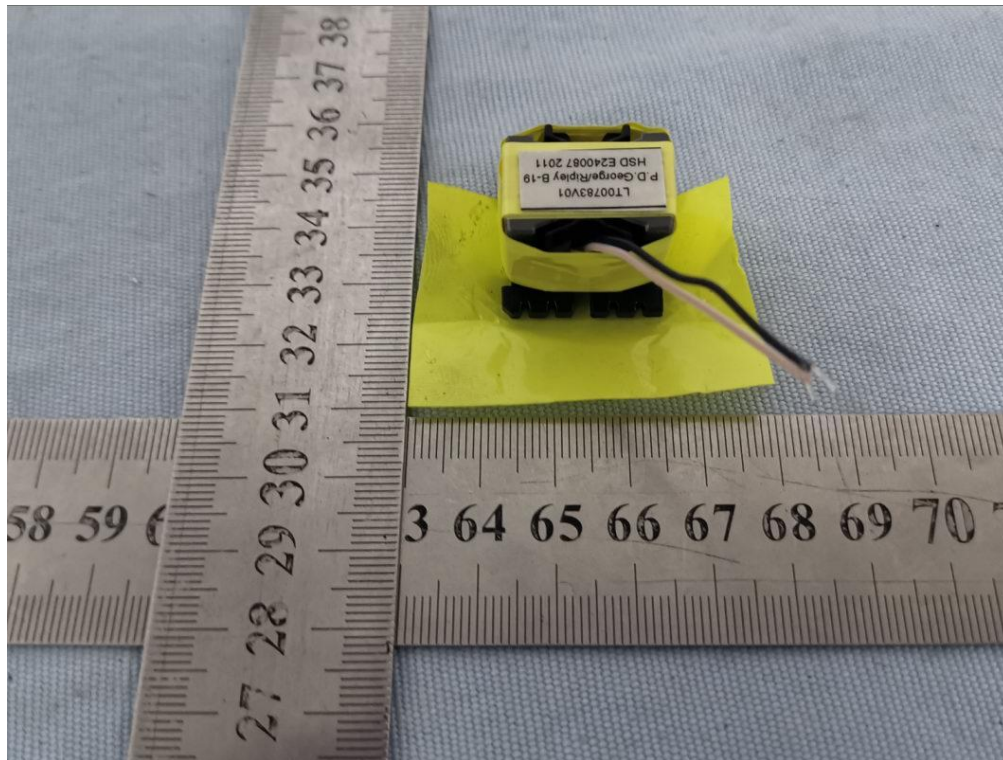


Photo 20



Photo 21

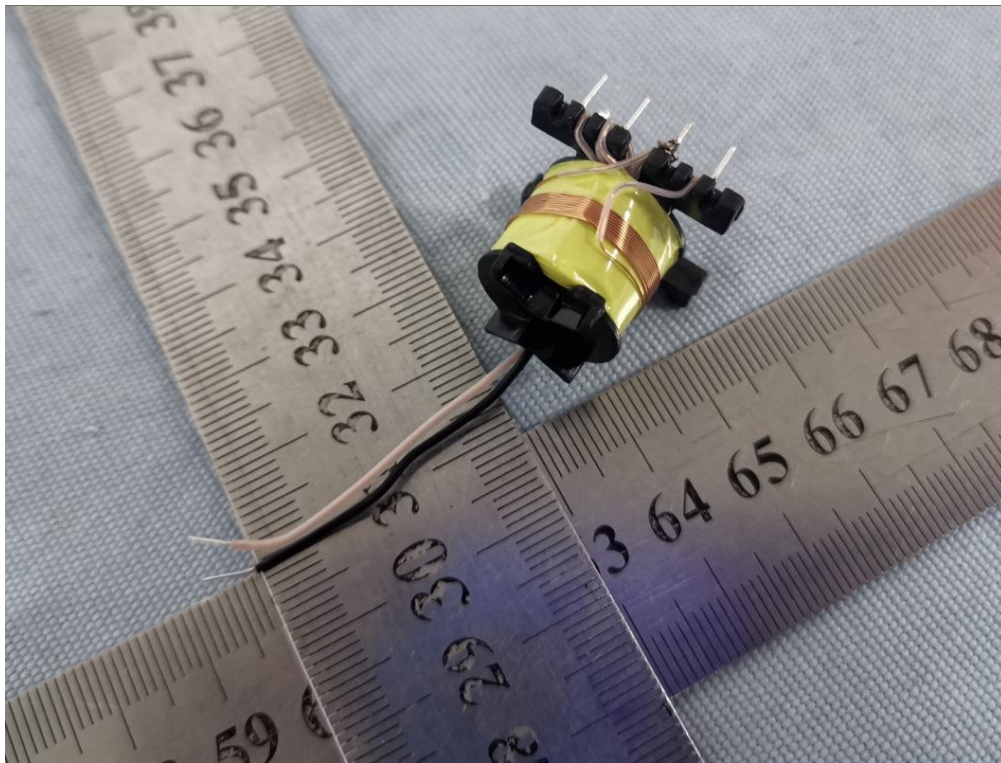
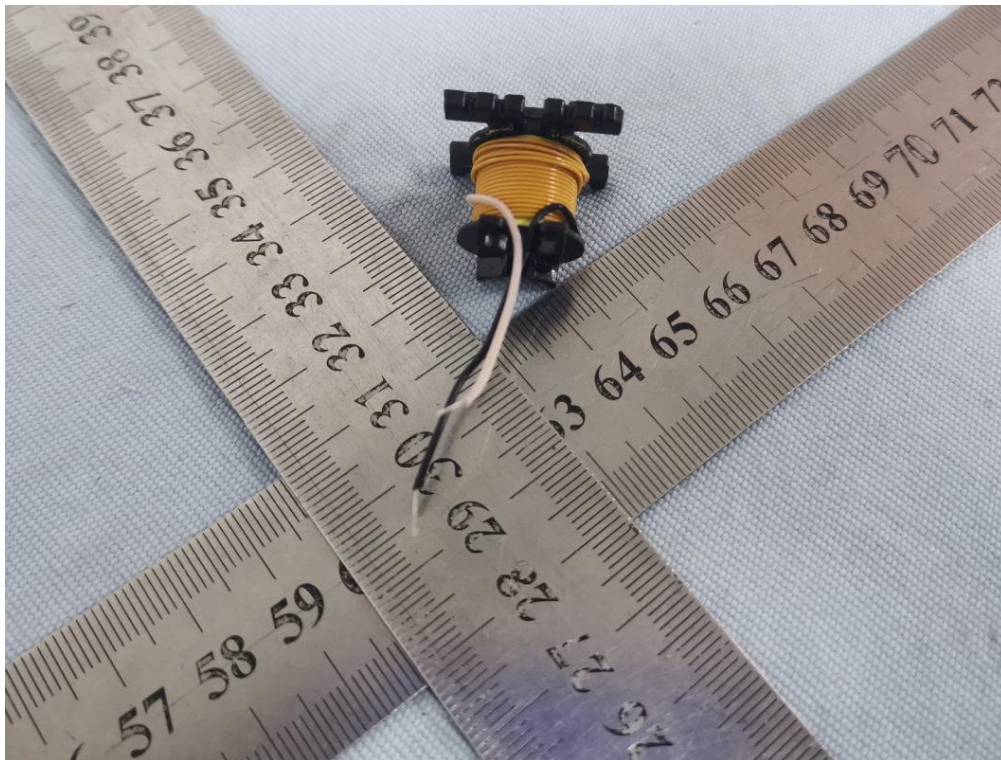


Photo 22



Photo 23



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