



TM

Ref. Certif. No.

JPTUV-138763

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT
(IECEE) CB SCHEME

CB TEST CERTIFICATE

Product

SWITCHING ADAPTER

Name and address of the applicant

Shenzhen Fujia Appliance Co., Ltd.
5F of Building F, Hengchangrong
(xinghui) Sci-Tech. Park, Huaning Road, Longhua District,
Shenzhen, Guangdong, P.R. China

Name and address of the manufacturer

Shenzhen Fujia Appliance Co., Ltd.
5F of Building F, Hengchangrong
(xinghui) Sci-Tech. Park, Huaning Road, Longhua District,
Shenzhen, Guangdong, P.R. China

Name and address of the factory

See additional page(s)

Ratings and principal characteristics

Input : 100-240VAC, 50/60Hz, 1.5A Max; Class I
Output: 5.0-9.0VDC/0.1-6.0A/54W Max.
9.5-19.5VDC/0.1-6.0A/65W Max.
20.0-33.0VDC/0.1-3.25A/65W Max.
36.0-54.0VDC/0.1-1.80A/65W Max.

Trademark (if any)

Trademark of Shenzhen Fujia Appliance Co., Ltd.

Customer's Testing Facility (CTF) Stage used

N/A

Model / Type Ref.

FJ-SW2017xxxxyyy
(xxx=050-090, 095-195, 200-330, 360-540; yyy=0100-6000)

Additional information (if necessary may
also be reported on page 2)

For model differences, refer to the test report

A sample of the product was tested and
found to be in conformity with

IEC 62368-1:2018
See Test Report for National Differences

As shown in the Test Report Ref. No. which
forms part of this Certificate

CN22WTWW 001

This CB Test Certificate is issued by the National Certification Body



TÜVRheinland®

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Date: 2022-09-08

Signature:

Sommy Chen

1. Shenzhen Fujia Appliance Co., Ltd.
5F of Building F, Hengchangrong
(xinghui) Sci-Tech. Park,
Huaning Road, Longhua District,
Shenzhen, Guangdong, P.R. China
2. Huizhou Fujia Appliance Tech.
Co., Ltd.
Building B of Yaoyu Ind. Park,
Shatian Town, Huiyang District
Huizhou, 516269 Guangdong, P.R. China

Additional information (if necessary)

Report Ref. No. : CN22WTWW 001

Date: 2022-09-08

Signature:



Sommy Chen



Test Report issued under the responsibility of:



TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report Number..... : CN22WTWW 001

Date of issue : 2022-09-07

Total number of pages..... : 90 pages

Name of Testing Laboratory preparing the Report..... : TÜV Rheinland (Shenzhen) Co., Ltd.

Applicant's name : Shenzhen Fujia Appliance Co., Ltd.

Address..... : 5F of Building F, Hengchangrong(xinghui) Sci-Tech. Park, Huaning Road, Longhua District, Shenzhen, Guangdong, P.R. China

Test specification:

Standard..... : IEC 62368-1:2018

Test procedure..... : CB Scheme

Non-standard test method..... : N/A

TRF template used..... : IECEE OD-2020-F1:2021, Ed.1.4

Test Report Form No. : IEC62368_1E

Test Report Form(s) Originator..... : UL(US)

Master TRF : Dated 2022-04-14

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If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

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

This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description..... :	SWITCHING ADAPTER	
Trade Mark(s) :		
Manufacturer..... :	Same as applicant	
Model/Type reference..... :	FJ-SW2017xxxxxxx (for definition of variables xxx, yyyy see table A for details)	
Ratings..... :	Input: 100-240V~, 50/60Hz, 1.5A Max Output: See table B for details	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/> CB Testing Laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.	
Testing location/ address..... :	1601-1604, 17-18F, Tower A Building 2, Shenzhen International Innovation Valley, Dashi 1st Road, Xili Street, Xili Community, Nanshan District, Shenzhen 518052, China	
Tested by (name, function, signature)..... :	Jericho Cheng / Project Handler	
Approved by (name, function, signature).. :	Edward Xie / Reviewer	
Testing procedure: CTF Stage 1:		
Testing location/ address..... :		
Tested by (name, function, signature)..... :		
Approved by (name, function, signature).. :		
Testing procedure: CTF Stage 2:		
Testing location/ address..... :		
Tested by (name, function, signature)..... :		
Witnessed by (name, function, signature). :		
Approved by (name, function, signature).. :		
Testing procedure: CTF Stage 3:		
Testing procedure: CTF Stage 4:		
Testing location/ address..... :		
Tested by (name, function, signature)..... :		
Witnessed by (name, function, signature). :		
Approved by (name, function, signature).. :		
Supervised by (name, function, signature) :		

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

Attachment 1: National differences (60 pages)
Attachment 2: Construction of transformer (5 pages)
Attachment 3: Photo documents (11 pages)

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

All applicable tests as described in Test Case and Measurement Sections were performed.

- Maximal ambient temperature as specified by the manufacturer: +45°C
- Load conditions used during testing see appended table B.2.5 for details.
- If not otherwise specified, tests were performed on models FJ-SW20170906000, FJ-SW20171096000, FJ-SW20172003250, FJ-SW20175401200, FJ-SW20173301970 and FJ-SW20170506000 to represent other similar models.
- The EUT passed the above all tests.

Testing location:

Unless otherwise indicated, all tests were performed at the location stated in "Testing procedure and testing location".

<u>Clause(s)</u>	<u>Test(s)</u>
5.2	Electrical energy source classifications
5.4.1.4, 9.3, B.1.5, B.2.6	Maximum operating temperatures for materials, components and systems
5.4.1.8	Determination of working voltage
5.4.1.10.3	Ball pressure test
5.4.2, 5.4.3	Minimum Clearances/Creepage distance
5.4.5	Antenna terminal insulation - Voltage surge
5.4.8	Humidity conditioning
5.4.9	Electric strength test
5.5.2.2	Safeguards against capacitance discharge test
5.6.6.2	Resistance of protective conductors and terminations
5.7.4	Unearthed accessible parts
5.7.5	Earthed accessible conductive part
6.2.2	Electrical power sources (PS) measurements for classification
9.2	Thermal energy source Classifications
B.2.5	Input tests
B.3, B.4	Abnormal operating and fault condition tests
F.3.9	Durability, legibility and permanence of markings

G.5.3.3	Transformer overload	
G.8.2.2	Varistor overload test	
Q.1.2	Limited power sources	
T.2	Steady force test, 10 N	
T.4	Steady force test, 100 N	
T.5	Steady force test, 250 N	
T.6	Impact test	
T.7	Drop test	
T.8	Stress relief test	

Summary of compliance with National Differences (List of countries addressed):

EU Group Differences, EU Special National Conditions, CA, US.

Explanation of used codes: CA=Canada, US=United States of America.

☒ **The product fulfils the requirements of EN IEC 62368-1:2020+A11:2020, CSA C22.2 No. 62368-1:2019, UL 62368-1:2019.**

Use of uncertainty of measurement for decisions on conformity (decision rule):

☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

☐ Other:... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

Copy of marking plate:

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

	SWITCHING ADAPTER Fonte de Alimentação AC/DC 开关电源适配器/電源供應器				
MODEL/MODELO/型号/型號: FJ-SW20171205000 INPUT/ENTRADA/輸入/輸入: 100-240V~ 50/60Hz 1.5A Max OUTPUT/SAÍDA/輸出/輸出: 12.0V 5.0A, 60.0W		전기용품안전관리법에 의한 표시 직류전원장치 HU10539-17040 A/S: +86-755-33663999 MSIP-REM-FJ1-20171255200			
注意: 电击危险 请勿打开/電擊危險 請勿打開 CAUTION: RISK OF ELECTRIC SHOCK DO NOT OPEN ACHTUNG: STROMSCHLAG GEFAHR, NICHT ÖFFNEN ATTENTION: RISQUE DE CHOC ELECTRIQUE 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. 制造商: 深圳市福佳电器有限公司 YYMM MFR: SHENZHEN FUJIA APPLIANCE CO., LTD. MADE IN CHINA/Feito na China/中国制造/中國製造		 EFFICIENCY LEVEL: (VI)			

Notes: Since similar label used, only label for models above listed to represent other similar ones.

Test item particulars:			
Product group	<input checked="" type="checkbox"/> end product	<input type="checkbox"/> built-in component	
Classification of use by	<input checked="" type="checkbox"/> Ordinary person	<input checked="" type="checkbox"/> Children likely present	
	<input type="checkbox"/> Instructed person		
	<input type="checkbox"/> Skilled person		
Supply connection	<input checked="" type="checkbox"/> AC mains	<input type="checkbox"/> DC mains	
	<input type="checkbox"/> not mains connected:		
	<input type="checkbox"/> ES1	<input type="checkbox"/> ES2	<input type="checkbox"/> ES3
Supply tolerance	<input checked="" type="checkbox"/> +10%/-10%		
	<input type="checkbox"/> +20%/-15%		
	<input type="checkbox"/> + %/ - %		
	<input type="checkbox"/> None		
Supply connection – type	<input checked="" type="checkbox"/> pluggable equipment type A -		
	<input type="checkbox"/> non-detachable supply cord		
	<input checked="" type="checkbox"/> appliance coupler		
	<input type="checkbox"/> direct plug-in		
	<input type="checkbox"/> pluggable equipment type B -		
	<input type="checkbox"/> non-detachable supply cord		
	<input type="checkbox"/> appliance coupler		
	<input type="checkbox"/> permanent connection		
Considered current rating of protective device	<input checked="" type="checkbox"/> US, CA: 20 A; UK: 13 A; Others: 16 A;		
	Location: <input checked="" type="checkbox"/> building	<input type="checkbox"/> equipment	
	<input type="checkbox"/> N/A		
Equipment mobility	<input checked="" type="checkbox"/> movable	<input type="checkbox"/> hand-held	<input checked="" type="checkbox"/> transportable
	<input type="checkbox"/> direct plug-in	<input type="checkbox"/> stationary	<input type="checkbox"/> for building-in
	<input type="checkbox"/> wall/ceiling-mounted	<input type="checkbox"/> SRME/rack-mounted	
	<input type="checkbox"/> other:		
	<input type="checkbox"/> OVC I	<input checked="" type="checkbox"/> OVC II	<input type="checkbox"/> OVC III
Overvoltage category (OVC)	<input type="checkbox"/> OVC IV	<input type="checkbox"/> other:	
Class of equipment	<input checked="" type="checkbox"/> Class I	<input type="checkbox"/> Class II	<input type="checkbox"/> Class III
	<input type="checkbox"/> Not classified	<input type="checkbox"/>	
Special installation location	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> restricted access area	
	<input type="checkbox"/> outdoor location	<input type="checkbox"/>	
Pollution degree (PD)	<input type="checkbox"/> PD 1	<input checked="" type="checkbox"/> PD 2	<input type="checkbox"/> PD 3
Manufacturer's specified T_{ma}	45 °C	<input type="checkbox"/> Outdoor: minimum	°C
IP protection class	<input checked="" type="checkbox"/> IPX0	<input type="checkbox"/> IP__	
Power systems	<input checked="" type="checkbox"/> TN	<input type="checkbox"/> TT	<input type="checkbox"/> IT - V _{L-L}
	<input type="checkbox"/> not AC mains		
Altitude during operation (m)	<input type="checkbox"/> 2000 m or less	<input checked="" type="checkbox"/> 5000 m	
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less	<input type="checkbox"/> m	
Mass of equipment (kg)	Approx. 0.256kg		
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 : 2022-07-20 Date (s) of performance of tests..... : 2022-07-20 to 2022-08-22	
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 <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator. <input type="checkbox"/> This Test Report Form contains requirements according to IEC/ISO Standard dated and includes Corrigendum dated (Note: The above text maybe removed if not applicable)	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60335-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : Shenzhen Fujia Appliance Co., Ltd. 5F of Building F, Hengchangrong(xinghui) Sci-Tech. Park, Huaning Road, Longhua District, Shenzhen, Guangdong, P.R. China Huizhou Fujia Appliance Tech. Co., Ltd. Building B of Yaoyu Ind. Park, Shatian Town, Huiyang District, Huizhou, 516269 Guangdong, P.R. China	
General product information and other remarks: 1. This test report covers model series FJ-SW2017xxxxxxx which are desk-top type switching adapter intended to use for information technology equipment or Audio and Video equipment. 2. The bottom enclosure is secured to top enclosure by screws and mechanical clamping method. 3. The specified max. ambient temperature is +45°C. 4. The power supply cord set was not evaluated together with the apparatus. A suitable certified power cord set shall be selected when the apparatus is sold. 5. For AC inlet, either C6 type or C14 type used. Only has different inlet type and do not impact the size of the enclosure. 6. The power supply is used for the altitude up to 5000m, only clearance for functional insulation, reinforced or double insulation of the EUT are evaluated according to IEC 60664-1 table A.2, other aspects shall be evaluated during national approval. 7. Components RT1, LF1, RV1, CY2, CY3, CY4, C24, C26, R27, R33, OP2, L3, LF3, LED, U5, R31, R24, R43, R44, R42, C20, D7, C23, ZD3 are optional. It does not impact the performance of the product whether to use them or not. If not otherwise specified, tests were performed with all these components provided. 8. AU national difference was considered, details to see Attachment 1.	

Table A: Definition of variables:

Variable:	Range of variable:	Content:
xxx	050-090, 095-195, 200-330, 360-540	'xxx' are 3 digits indicating 10 times the output voltage value in V. For example, 050 represents the output voltage is 5.0Vdc, 540 represents the output voltage is 54.0Vdc.
yyyy	0100 to 6000	'yyyy' are 4 digits indicating 1000 times the output current value in A. For example, 0100 represents the output current is 0.1A, 6000 represents the output current is 6.0 A.

Table B: Model list

Type designation	Output Voltage range (Vdc)	Output Current Range (A)	Max. Output power (W)	Transformer
FJ-SW2017xxxxxxx (xxx= 050-090, yyyy= 0100-6000)	5.0-9.0	0.1-6.0	54	2017-T1 (Sec winding: $\Phi 0.45\text{mm} \times 6\text{P} \times 3\text{Ts}$)
FJ-SW2017xxxxxxx (xxx= 095-195, yyyy= 0100-6000)	9.5-19.5	0.1-6.0	65	2017-T2 (Sec winding: $\Phi 0.45\text{mm} \times 4\text{P} \times 6\text{Ts}$)
FJ-SW2017xxxxxxx (xxx = 200-330, yyyy= 0100 -3250)	20.0-33.0	0.1-3.25	65	2017-T3 (Sec winding: $\Phi 0.50\text{mm} \times 2\text{P} \times 10\text{Ts}$)
FJ-SW2017xxxxxxx (xxx = 360-540, yyyy= 0100 -1800)	36.0-54.0	0.1-1.80	65	2017-T4 (Sec winding: $\Phi 0.45\text{mm} \times 2\text{P} \times 18\text{Ts}$)

Note:

The rated output voltage is rising in steps of 0.1V.

The rated output current is rising in steps of 0.01A.

Output voltage multiplied with output current are only tested up to the max. output power.

Table C: Components difference list:

(1)

Difference	C7, C22	Q4
FJ-SW2017xxxxxxx (xxx= 050-090)	Min. 10V	Min. 40V, Min. 40A
FJ-SW2017xxxxxxx (xxx= 095-195)	Min. 16V	Min. 80V, Min. 40A
FJ-SW2017xxxxxxx (xxx = 200-330)	Min. 25V	Min. 150V, Min. 10A
FJ-SW2017xxxxxxx (xxx = 360-540)	Min. 35V	Min. 300V, Min. 10A

(2)

Opto-coupler OP2	Output voltage>33Vdc	Output voltage≤33Vdc
	Provided	Optional

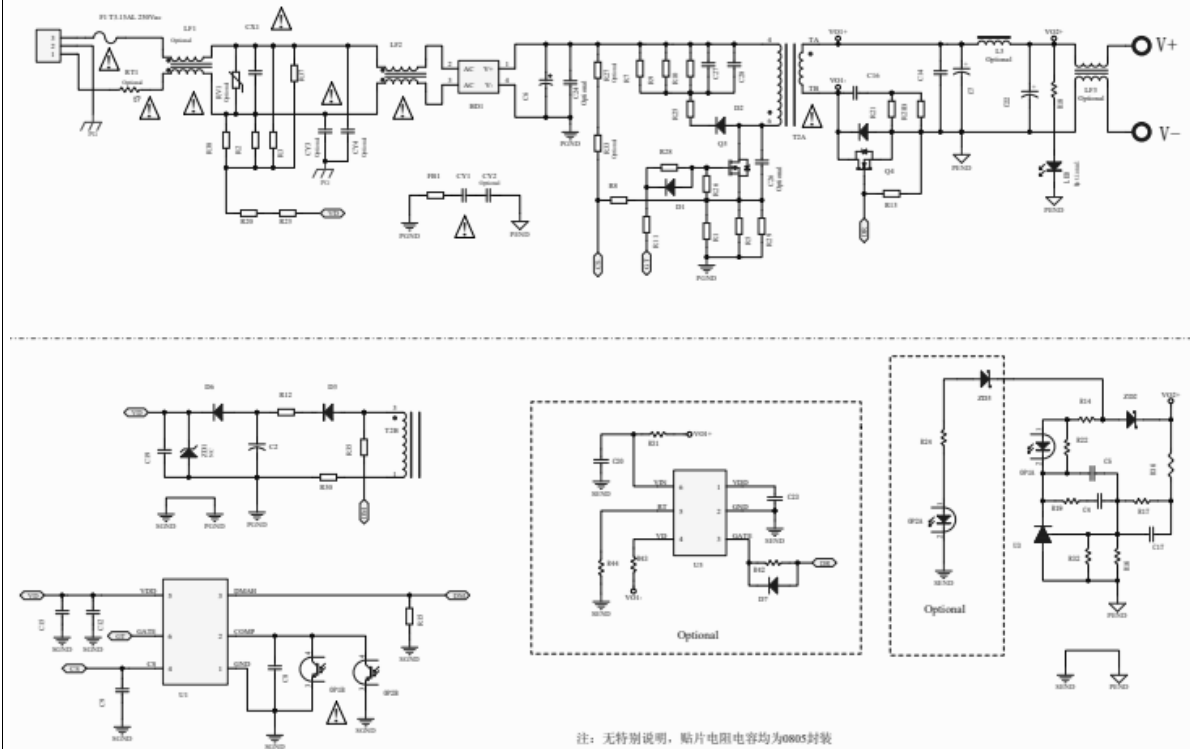
OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: All circuits except for the secondary circuit after Q4	Ordinary	N/A	N/A	Enclosure See 5.4.2, 5.4.3, 5.4.5, 5.5.3, 5.5.4
ES3: CX1	Ordinary	N/A	N/A	See 5.5.2.2
ES1: The secondary circuit after Q4	Ordinary	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3 circuit	Enclosure	See 6.3	V-0	N/A
PS3 circuit	PCB	See 6.3	V-0	N/A
PS2/PS3 circuit	Internal /external primary wiring	See 6.5	N/A	N/A
PS2/PS3 circuit	The other components/materials	See 6.3	See 6.4.5, 6.4.6	N/A
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Edges and corners of enclosure	Ordinary	N/A	N/A	N/A
MS1: Mass of the unit	Ordinary	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS3: Internal Parts/circuit of the unit in enclosure	Ordinary	N/A	N/A	Enclosure
TS1: Accessible part of external enclosure surfaces	Ordinary	N/A	N/A	N/A
10	Radiation			

Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1: LED for indicating	Ordinary	N/A	N/A	N/A
Supplementary Information: “B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard				

ENERGY SOURCE DIAGRAM

Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems.

Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings



☒ ES ☒ PS ☐ MS ☐ TS ☐ RS

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 to limiting the outputs to fulfill ES1, and protection in regard to risk of spread of fire, mechanical-caused injury and thermal burn considered.	P
4.1.4	Specified ambient temperature for outdoor use (°C) :	This equipment is not intended to use in outdoor.	N/A
4.1.5	Constructions and components not specifically covered	No this constructions and components.	N/A
4.1.8	Liquids and liquid filled components (LFC)	No this component.	N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness	See below	P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Annex T.2, T.4 and T.5)	P
4.4.3.3	Drop tests	(See Annex T.7)	P
4.4.3.4	Impact tests	(See Annex T.6)	P
4.4.3.5	Internal accessible safeguard tests	The external enclosure cannot be opened without damaging the product.	N/A
4.4.3.6	Glass impact tests	No such glass used.	N/A
4.4.3.7	Glass fixation tests	No such glass used.	N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	(See Annex T.8)	P
4.4.3.9	Air comprising a safeguard	(See Annex T)	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	After tests of 4.4.3.2, 4.4.3.3, 4.4.3.8, no safeguard damaged.	P
4.4.4	Displacement of a safeguard by an insulating liquid	No this insulating liquid.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.4.5	Safety interlocks	No this safety interlocks.	N/A
4.5	Explosion		P
4.5.1	General	No explosion occurs during normal/abnormal operation and single fault conditions	P
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	P
	No harm by explosion during single fault conditions	(See Clause B.4)	P
4.6	Fixing of conductors		P
	Fix conductors not to defeat a safeguard	The wires are secured by soldering and additionally fixed by glue so that a loosening of the terminal connection is unlikely.	P
	Compliance is checked by test..... :	(See Clause T.2)	P
4.7	Equipment for direct insertion into mains socket-outlets		N/A
4.7.2	Mains plug part complies with relevant standard .. :		N/A
4.7.3	Torque (Nm)..... :	Desk-top equipment	N/A
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General	No coin/button cell batteries used.	N/A
4.8.2	Instructional safeguard..... :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		P
4.10	Component requirements		P
4.10.1	Disconnect Device	(See Annex L)	P
4.10.2	Switches and relays	No this components used	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current limits	(See appended table 5.2)	P
5.2.2.3	Capacitance limits	(See appended table 5.2)	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.....	(See appended table 5.2.2.5)	P
5.2.2.6	Ringing 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		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	See only 4.3 and 5.3 to 5.5 which applies to protection between the accessible parts and hazardous parts of other circuits.	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	Accessible ES1 derived from ES3 circuits by double safeguard or reinforced safeguard, and the current or voltage levels complied with ES1 limits.	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 circuit and the enclosure (safeguard) are accessed to person.	P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements	No openings allowing entry of a probe. No access with test probe to any ES3 circuit or parts.	P
	Test with test probe from Annex V		—
5.3.2.2 a)	Air gap – electric strength test potential (V).....		N/A
5.3.2.2 b)	Air gap – distance (mm)		N/A
5.3.2.3	Compliance		P
5.3.2.4	Terminals for connecting stripped wire	No such terminals.	N/A
5.4	Insulation materials and requirements		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T and natural rubber, hygroscopic materials or asbestos are not used as insulation.	P
5.4.1.3	Material is non-hygroscopic	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 degrees	2	
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 (however see 5.5.4).	N/A
5.4.1.5.3	Thermal cycling test	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 appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces	See only 5.4.1.10.3 below.	P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat test.....		N/A
5.4.1.10.3	Ball pressure test.....	Phenolic bobbin material used in transformer and filter which are acceptable without test. For other material, See appended table 5.4.1.10.3	P
5.4.2	Clearances	The highest value in Cl 5.4.2.2 and Cl 5.4.2.3 be used.	P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance	Temporary overvoltage 2000V _{peak} assumed.	P
	Temporary overvoltage	II	—
5.4.2.3	Procedure 2 for determining clearance	(See appended table 5.4.2, 5.4.3)	P
5.4.2.3.2.2	a.c. mains transient voltage	2500 V _{pk} considered for Overvoltage Cat. II	—
5.4.2.3.2.3	d.c. mains transient voltage	No such transient	—

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.3.2.4	External circuit transient voltage..... :	No such transient	—
5.4.2.3.2.5	Transient voltage determined by measurement :	Transient voltages from an AC mains	—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test :	Using procedure 2 to determine the clearance according to 5.4.2.3.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages :	(See only appended tables)	P
5.4.2.6	Clearance measurement :	(See appended table 5.4.2, 5.4.3)	P
5.4.3	Creepage distances	(See appended table 5.4.2, 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material group :	IIIa&IIIb	—
5.4.3.4	Creepage distances measurement..... :	(See appended table 5.4.2, 5.4.3)	P
5.4.4	Solid insulation	See below	P
5.4.4.1	General requirements		P
5.4.4.2	Minimum distance through insulation :	(See appended table 5.4.4.2)	P
5.4.4.3	Insulating compound forming solid insulation	No such insulation applied.	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	Insulating compound forming cemented joints	No such construction within the EUT.	N/A
5.4.4.6	Thin sheet material	See below	P
5.4.4.6.1	General requirements	Insulation tape used wrapping transformer	P
5.4.4.6.2	Separable thin sheet material	See above	P
	Number of layers (pcs) :	2 layers	P
5.4.4.6.3	Non-separable thin sheet material	No such thin sheet material within the EUT	N/A
	Number of layers (pcs) :		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material..... :		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, E_P , K_R , d , V_{PW} (V) :	See appended table 5.4.9	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Alternative by electric strength test, tested voltage (V), K_R		N/A
5.4.5	Antenna terminal insulation		P
5.4.5.1	General	The power supply will provide non-mains supply voltages to other equipment having antenna terminals.	P
5.4.5.2	Voltage surge test	Surge test with 50 discharges at a maximum rate of 12/min from a 1 nF capacitor charged to 10 kV performed.	P
5.4.5.3	Insulation resistance (M Ω)	Measured 500M Ω between mains supply to output terminals.	P
	Electric strength test	(See appended table 5.4.9)	P
5.4.6	Insulation of internal wire as part of supplementary safeguard	No such insulation of internal wire as part of 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	Test was performed on product with each source of transformer listed in table 4.1.2	P
	Relative humidity (%), temperature (°C), duration (h)	93%, 40°C, 120hrs	—
5.4.9	Electric strength test		P
5.4.9.1	Test procedure for type test of solid insulation.....	Compliance was checked immediately following temperature test in 5.4.1.4 and on a sample of the transformer raised to the relevant temperature as measured during that test.	P
5.4.9.2	Test procedure for routine test	No routine tests considered. To be considered during the relevant national approval.	N/A
5.4.10	Safeguards against transient voltages from external circuits	No such external circuits	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

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.3	Verification for insulation breakdown for impulse test..... :		N/A
5.4.11	Separation between external circuits and earth	No such connections for external circuit applied within the EUT	N/A
5.4.11.1	Exceptions to separation between external circuits and earth	No such connections to external circuit as above.	N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V) :		—
	Max increase due to variation ΔU_{sp} :		—
	Max increase due to ageing ΔU_{sa} :		—
5.4.11.3	Test method and compliance :		N/A
5.4.12	Insulating liquid	No such insulating liquid.	N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid :		N/A
5.4.12.3	Compatibility of an insulating liquid :		N/A
5.4.12.4	Container for insulating liquid :		N/A
5.5	Components as safeguards		P
5.5.1	General	See below.	P
5.5.2	Capacitors and RC units	Approved X and Y capacitors provided. See G.11.1 for compliance and their application.	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 component provided	N/A
5.5.6	Resistors	Bleeder resistors between live and neutral located L/N used and as safeguard	P
5.5.7	SPDs	No such component provided	N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable :	No such external circuits.	N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment	No outdoor equipment	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	RCD rated residual operating current (mA) :		—
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors		P
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors	The earth pin of the approved appliance inlet considered as protective earthing conductor. The green/yellow wire considered as protective bonding conductor, other earthed parts considered as functional earthed parts.	P
5.6.2.1	General requirements		P
5.6.2.2	Colour of insulation	No power cord provided.	N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²) :	No power cord provided.	—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors	The green/yellow wire was considered as protective bonding conductor	P
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²)..... :	Min. 18AWG See appended table 5.6.6.2	—
5.6.4.2	Protective current rating (A) :	Protective current rating 20A; Size as given above complies.	N/A
5.6.5	Terminals for protective conductors	The earthing of appliance inlet was considered as protective earthing terminal.	P
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :		N/A
	Terminal size for connecting protective bonding conductors (mm) :		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective bonding system		P
5.6.6.1	Requirements		P
5.6.6.2	Test Method :		P
5.6.6.3	Resistance (Ω) or voltage drop :	(See appended table 5.6.6)	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm ²)..... :		N/A
	Class II with functional earthing marking :		N/A
	Appliance inlet cl & cr (mm) :		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	Figure 4 of IEC 60990:1999 was used in determining of the limit of ES1. (See appended table 5.2)	P
5.7.2.2	Measurement of 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
5.7.4	Unearthed accessible parts..... :	(See appended table 5.7.4)	P
5.7.5	Earthed accessible conductive parts :	(See appended table 5.7.5)	P
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (mA)..... :		N/A
	Instructional Safeguard :		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits	No external circuits.	N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits	No external circuits.	N/A
	a) Equipment connected to earthed external circuits, current (mA)..... :		N/A
	b) Equipment connected to unearthed external circuits, current (mA)..... :		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES :	No such battery backed up supplies	N/A
	Air gap (mm) :		N/A
6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P

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Clause	Requirement + Test	Result - Remark	Verdict
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. (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	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 B.1.5 and B.3)	P
	Combustible materials outside fire enclosure.....	No such materials	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	Method by control of fire spread applied, V-0 fire enclosure provided.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	No PS1 circuits.	N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	Method by control of fire spread applied as 6.4.1.	N/A
6.4.3.1	Supplementary safeguards		N/A
6.4.3.2	Single Fault Conditions.....		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.5	Control of fire spread in PS2 circuits	Compliance detailed as follows: <ul style="list-style-type: none"> – <u>Printed board</u>: rated min. V-0 – <u>Wire insulation</u>: complying with Clause 6 (See Table 4.1.2 for tubing used). The input wire and output cord are complied to UL 758 standard, which test method and testing condition equal to IEC/EN 60695-11-21. – <u>All other components</u>: at least V-2 except for parts mounted on min. V-0 material or small parts of combustible material (with mass less than 4g) or components complying to relevant IEC standard. – <u>Isolating transformer</u>: complying with G.5.3. 	P
6.4.5.2	Supplementary safeguards	(See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuits	Compliance detailed as follows: <ul style="list-style-type: none"> – Parts as in 6.4.5 above including wiring – 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
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier	No specific barrier provided.	N/A
6.4.8	Fire enclosures and fire barriers	V-0 Fire Enclosure used.	P
6.4.8.2	Fire enclosure and fire barrier material properties	Plastic material of output terminals: Min. V-1	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	The V-0 fire enclosure is used. See above.	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	No openings in fire enclosure.	P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties		N/A
	Openings dimensions (mm) :	No openings.	N/A
6.4.8.3.4	Bottom openings and properties		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Openings dimensions (mm)	No openings except for the opening filled by VW-1 output cord bushing.	N/A
	Flammability tests for the bottom of a fire enclosure		N/A
	Instructional Safeguard.....		N/A
6.4.8.3.5	Side openings and properties		N/A
	Openings dimensions (mm)		N/A
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c).....		N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating	V-0 Fire Enclosure used.	P
6.4.9	Flammability of insulating liquid.....		N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	Output lead wires comply with UL 758, which has the equivalent requirement with IEC/TS 60695-11-21.	P
6.5.2	Requirements for interconnection to building wiring.....	See appendant table 4.1.2	P
6.5.3	Internal wiring size (mm ²) for socket-outlets		N/A
6.6	Safeguards against fire due to the connection to additional equipment		N/A

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards or personal protective equipment (PPE)		N/A
	Personal safeguards and instructions.....		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....		—
7.6	Batteries and their protection circuits		N/A

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners		P
8.4.1	Safeguards		N/A
	Instructional Safeguard.....	Instructional safeguard is not required.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.4.2	Sharp edges or corners	Edges and corners of the enclosure are rounded.	P
8.5	Safeguards against moving parts		N/A
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	No moving parts.	N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m)		N/A
	Space between end point and nearest fixed mechanical part (mm).....		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N)		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps		N/A
	Explosion test.....		N/A
8.5.5.3	Glass particles dimensions (mm)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.6	Stability of equipment		N/A
8.6.1	General	Classification MS1 according to table 35, line 5 and no stability requirements.	N/A
	Instructional safeguard	Instructional safeguard is not required.	N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test.....		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test.....		N/A
8.7	Equipment mounted to wall, ceiling or other structure		N/A
8.7.1	Mount means type.....		N/A
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N).....		N/A
	Test 2, number of attachment points and test force (N).....		N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm)		N/A
8.8	Handles strength		N/A
8.8.1	General		N/A
8.8.2	Handle strength test		N/A
	Number of handles		—
	Force applied (N)		—
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test		N/A
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions.....		N/A
8.10.3	Cart, stand or carrier loading test		N/A
	Loading force applied (N).....		N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Force applied (N) :		—
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for slide-rail mounted equipment (SRME)		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard..... :		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied..... :		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	Telescoping or rod antennas		N/A
	Button/ball diameter (mm)..... :	No such parts.	—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications		P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts :	No part considered to be accessible other than enclosure and output cable. The equipment evaluated by temperature test (See appended table 5.4.1.4)	P
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		P
9.5	Requirements for safeguards		P
9.5.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P
9.5.2	Instructional safeguard :	Instructional safeguard is not required.	N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General	No wireless power transmitters.	N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10	RADIATION		P
10.2	Radiation energy source classification		P
10.2.1	General classification	RS1: The LED only used for indicating, which is considered as low power & inherently exempt group according to IEC 62471	P
	Lasers	No such radiation generated from the equipment.	—
	Lamps and lamp systems		—
	Image projectors		—
	X-Ray		—
	Personal music player.....		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		N/A
10.4.1	General requirements		N/A
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure		N/A
10.4.3	Instructional safeguard.....		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements		N/A
	Instructional safeguard for skilled persons.....	No such x-radiation generated from the equipment	—
10.5.3	Maximum radiation (pA/kg)		—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General	Not such equipment.	N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A)		N/A
	Unweighted RMS output voltage (mV).....		N/A
	Digital output signal (dBFS)		N/A
10.6.3	Requirements for dose-based systems		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30)		N/A
	Warning for MEL ≥ 100 dB(A)		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards.....		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV).....		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)		N/A

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	Normal operating conditions		P
B.2.1	General requirements	(See summary of testing for tested models, each loaded according to its output ratings. See also appended table B.2.5.)	P
	Audio Amplifiers and equipment with audio amplifiers.....	Not such equipment.	N/A
B.2.3	Supply voltage and tolerances	+10 % and -10 % considered.	P
B.2.5	Input test	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General	(See appended table B.3, B.4)	P
B.3.2	Covering of ventilation openings		N/A
	Instructional safeguard.....		N/A
B.3.3	DC 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 was used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	Audio amplifier abnormal operating conditions	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.4.1	General	(See appended table B.3, B.4)	P
B.4.2	Temperature controlling device	No such device used.	N/A
B.4.3	Blocked motor test	No motors used.	N/A
B.4.4	Functional insulation	See below.	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3, B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3, B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards used.	N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.3, B.4 for faults on electronic components)	P
B.4.6	Short circuit or disconnection of passive components	(See appended table 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	Compliance during and after single fault conditions..... :	(See appended table B.3, B.4)	P
B.4.9	Battery charging and discharging 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		N/A
C.1.2	Requirements	No UV generated from the equipment.	N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus..... :		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W)	Not such equipment.	—
	Rated load impedance (Ω)		—
	Open-circuit output voltage (V).....		—
	Instructional safeguard.....		—
E.2	Audio amplifier normal operating conditions		N/A
	Audio signal source type		—
	Audio output power (W)		—
	Audio output voltage (V)		—
	Rated load impedance (Ω)		—
	Requirements for temperature measurement		N/A
E.3	Audio amplifier abnormal operating conditions		N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60027-1.	P
F.2.2	Graphic symbols according to 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	The required marking is located on the enclosure of the equipment and is easily visible.	P
F.3.2	Equipment identification markings	See copy of marking plate.	P
F.3.2.1	Manufacturer identification	See copy of marking plate	P
F.3.2.2	Model identification	See model list.	P
F.3.3	Equipment rating markings	See the following details.	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.3.1	Equipment with direct connection to mains	The equipment is direct connected to AC mains, see F.3.3.3 to F.3.3.6.	P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of the supply voltage	See copy of marking plate	P
F.3.3.4	Rated voltage	See copy of marking plate	P
F.3.3.5	Rated frequency	See copy of marking plate	P
F.3.3.6	Rated current or rated power	See copy of marking plate	P
F.3.3.7	Equipment with multiple supply connections	Only one mains supply connection provided.	N/A
F.3.4	Voltage setting device	No voltage setting device.	N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings	No outlet used.	N/A
F.3.5.2	Switch position identification marking	No switch used.	N/A
F.3.5.3	Replacement fuse identification and rating markings	The current fuse is located within the equipment and not replaceable by an ordinary person or an instructed person. The current fuse is anyway marked with F1: T3.15AL/250Vac	P
	Instructional safeguards for neutral fuse		N/A
F.3.5.4	Replacement battery identification marking	No such battery on the equipment.	N/A
F.3.5.5	Neutral conductor terminal		N/A
F.3.5.6	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	Class I equipment, protective earthing symbol marked on the appliance inlet.	P
F.3.6.1.2	Protective bonding conductor terminals		P
F.3.6.2	Equipment class marking		N/A
F.3.6.3	Functional earthing terminal marking	Class I equipment	N/A
F.3.7	Equipment IP rating marking	IP X0	P
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

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Clause	Requirement + Test	Result - Remark	Verdict
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) Information prior to installation and initial use		P
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Equipment intended to be fastened in place		N/A
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard		P
	h) Protective conductor current exceeding ES2 limits		N/A
	i) Graphic symbols used on equipment		N/A
	j) Permanently connected equipment not provided with all-pole mains switch		N/A
	k) Replaceable components or modules providing safeguard function		N/A
	l) Equipment containing insulating liquid		N/A
	m) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	Relays		N/A
G.2.1	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	Protective devices		P
G.3.1	Thermal cut-offs	No thermal cut-off used.	N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links	No thermal link used.	N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors	No PTC thermistor used.	N/A
G.3.4	Overcurrent protection devices	Current fuse complying with IEC 60127 as overcurrent protection device and protected within 1 s.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		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 :	Mains inlet complied with standard.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	Output connector with a shape that insert into a mains connector is unlikely to occur.	P
G.5	Wound components		P
G.5.1	Wire insulation in wound components	Approved triple insulated wire used as Reinforced insulation for primary winding of transformer.	P
G.5.1.2	Protection against mechanical stress	Physical separation provided by tube.	P

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle)..... :		—
	Test temperature (°C)..... :		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A
G.5.3	Transformers		P
G.5.3.1	Compliance method..... :	The transformer meets the requirements given in G.5.3.2 and G.5.3.3.	P
	Position :	T2	P
	Method of protection :	By protection circuit design.	P
G.5.3.2	Insulation	Primary windings and secondary windings are separated by Reinforced insulation (The core is considered as primary part as it is not isolated from Primary)	P
	Protection from displacement of windings :	The end-turn of each winding is fixed by bobbin	—
G.5.3.3	Transformer overload tests	(See appended table 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	(See appended table B.3, B.4)	P
G.5.3.3.3	Winding temperatures - alternative test method	Alternative test method was not considered.	N/A
G.5.3.4	Transformers using FIW	No FIW used.	N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter :		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation..... :		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4	Motors	No motor used.	N/A
G.5.4.1	General requirements		N/A
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days)		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature		N/A
G.5.4.6.3	Alternative method		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 transformer secondary winding used as reinforced safeguard in the isolating transformer that has separately complied with Annex J.	P
G.6.2	Enamelled winding wire insulation	Insulation does not rely on solvent-based enamel.	N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements	No such cord provided	N/A
	Type		—
G.7.2	Cross sectional area (mm ² or AWG)		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)		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm).....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.3.2.4	Strain relief and cord anchorage 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	Test method and compliance		N/A
	Overall diameter or minor overall dimension, D (mm)..... :		—
	Radius of curvature after test (mm)..... :		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	Varistors		P
G.8.1	General requirements	VDE approved varistor used.	P
G.8.2	Safeguards against fire	Coating V-0, see table 4.1.2 for details	P
G.8.2.1	General		P
G.8.2.2	Varistor overload test	No risk of fire and equipment safeguards. All source of varistors in table 4.1.2 are considered.	P
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements	No IC current limiter provided within the equipment.	N/A
	IC limiter output current (max. 5A)..... :		—
	Manufacturers' defined drift :		—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	Resistors		N/A
G.10.1	General	Resistor bridging functional insulation	N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.10.6	Overload test		N/A
G.11	Capacitors 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
	Optocouplers comply with IEC 60747-5-5 with specifics	The optocoupler complied with standard IEC/EN 60747-5-5. (see appended table 4.1.2)	P
	Type test voltage $V_{ini,a}$	Min 4000Vpeak	—
	Routine test voltage, $V_{ini,b}$	Min 4000Vpeak	—
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 complied with the minimum clearance and creepage requirements	P
G.13.3	Coated printed boards	No coated printed board or multilayer board applied for within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
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.13.6.2	Test method and compliance		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	Pressurized liquid filled components		N/A
G.15.1	Requirements	No such device provided within the equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
G.16.1	Condition for fault tested is not required		N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test..... :		—
G.16.3	Capacitor discharge test :		N/A
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal	No telephone ringing signal generated within the equipment.	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		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
J.1	General		P
	Winding wire insulation :	Triple insulated winding wiring used as reinforced safeguard in the isolating transformer that has been evaluated to Annex J of this standard (for wires providing Reinforced insulation). See Table 4.1.2.	—
	Solid round winding wire, diameter (mm)..... :		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²) :		N/A
J.2/J.3	Tests and Manufacturing		—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard..... :	No safety interlock provided.	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
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance :		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm)..... :		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm)..... :		N/A
	Electric strength test before and after the test of K.7.2..... :		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	AC inlet used to disconnect from AC mains.	P

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Clause	Requirement + Test	Result - Remark	Verdict
L.2	Permanently connected equipment	Not permanently connected equipment.	N/A
L.3	Parts that remain energized	When AC inlet is disconnected no hazardous voltage in the equipment.	P
L.4	Single-phase equipment	The appliance coupler disconnects both poles simultaneously.	P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices	See above.	N/A
L.8	Multiple power sources	Only one a.c. mains connection.	N/A
	Instructional safeguard..... :		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Batteries and their cells comply with relevant IEC standards	No battery used.	N/A
M.3	Protection circuits for batteries provided within the equipment		N/A
M.3.1	Requirements		N/A
M.3.2	Test method		N/A
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance		N/A
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance		N/A
M.4.3	Fire enclosure..... :		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): :		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		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
	Calculated hydrogen generation rate..... :		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m³/h)..... :		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%)..... :		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate..... :		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%)..... :		N/A
M.7.4	Marking :		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m³/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

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Clause	Requirement + Test	Result - Remark	Verdict
M.10	Instructions to prevent reasonably foreseeable misuse		N/A
	Instructional safeguard..... :		N/A
N	ELECTROCHEMICAL POTENTIALS		P
	Material(s) used..... :	No risk of corrosion.	—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :	1.0	—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		P
P.1	General	No opening	P
P.2	Safeguards against entry or consequences of entry of a foreign object		P
P.2.1	General		P
P.2.2	Safeguards against entry of a foreign object		P
	Location and Dimensions (mm) :	No openings.	—
P.2.3	Safeguards against the consequences of entry of a foreign object		N/A
P.2.3.1	Safeguard requirements		N/A
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts :		N/A
P.2.3.2	Consequence of entry test :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General	No such liquids.	N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		N/A
P.4.1	General	No such construction.	N/A
P.4.2	Tests		N/A
	Conditioning, T _c (°C)..... :		—
	Duration (weeks) :		—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources	See appended table Annex Q.1	P
Q.1.1	Requirements		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	c) Regulating network limited output	A regulating network limits the output in compliance with table Q.1 both under normal operating conditions and after any single fault.	P
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance	See appended table Annex Q.1	P
	Current rating of overcurrent protective device (A)		N/A
Q.2	Test for external circuits – paired conductor cable	No such circuit for connection to the EUT	N/A
	Maximum output current (A)		N/A
	Current limiting method		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General		N/A
R.2	Test setup		N/A
	Overcurrent protective device for test.....		—
R.3	Test method		N/A
	Cord/cable used for test.....		—
R.4	Compliance		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		N/A
	Samples, material	Approved fire enclosure with V-0 material used.	—
	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
	- 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)		—

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Clause	Requirement + Test	Result - Remark	Verdict
S.3	Flammability test for the bottom of a fire enclosure		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		N/A
	Mounting of samples		—
	Wall thickness (mm)		—
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W		N/A
	Samples, material.....		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
T	MECHANICAL STRENGTH TESTS		P
T.1	General		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	No internal enclosure.	N/A
T.4	Steady force test, 100 N	(See appended table T.2, T.3, T.4, T.5)	P
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		N/A
T.7	Drop test	(See appended table T.7)	P
T.8	Stress relief test.....	(See appended table T.8)	P
T.9	Glass Impact Test.....	No glass used.	N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)		N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General		N/A
	Instructional safeguard :		N/A
U.2	Test method and compliance for non-intrinsically protected CRTs		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		P
V.1	Accessible parts of equipment		P
V.1.1	General	No access with test probes to any hazardous parts	P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		N/A
V.1.4	Plugs, jacks, connectors tested with blunt probe		N/A
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		N/A
V.2	Accessible part criterion		N/A
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)		N/A
	Clearance : (See appended table X)		N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General		N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by :		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure..... :		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods :		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means	(See Annex P.4)	N/A
Y.5	Protection of equipment within an outdoor enclosure		N/A
Y.5.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3 :		N/A
Y.5.3	Water spray test		N/A
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A
Y.5.5.1	General		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	Mechanical strength of enclosures		N/A
Y.6.1	General		N/A
Y.6.2	Impact test..... :	(See Table T.6)	N/A

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
Model: FJ-SW20175401200 (output load: 54.0V1.2A)							
264Va.c., 60Hz	Primary circuits supplied by a.c. mains supply	Normal	264Vrms	--	SS	Frequency: 60Hz	ES3
		Abnormal	--	--	--	--	
		Single fault	--	--	--	--	
264Va.c., 60Hz	T2 pin TA-TB	Normal	250.1Vpk	--	SS	Frequency: 53.6KHz	ES3
264Va.c., 60Hz	T2 secondary (after Q4)	Normal	54.0Vdc	--	SS	DC	ES1
		Single fault SC Q4 pin D-S	0 (Unit shut down)	--	SS	--	
264Va.c., 60Hz	Output “+” to “-” / earth	Normal	53.8Vdc Max.	--	SS	--	ES1
		Abnormal Output overload	53.8Vdc Max.	--	SS	--	
		Single fault: SC/OC (Refer to fault condition on table B.4, output shutdown)	0	--	SS	--	
		Single fault: SC/OC (Refer to fault condition on table B.4, fuse open)	0	--	SS	--	
264Va.c., 60Hz	Plastic enclosure to earth (CY1=2200pF/CY1=CY2=3300pF)	Normal	--	0.054m Apk	SS	--	ES1
		Abnormal Output overload	--	0.054m Apk	SS	--	
		Single fault: SC/OC (Refer to fault condition on table B.4, output shutdown)	--	0.054m Apk	SS	--	

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
		Single fault: SC/OC (Refer to fault condition on table B.4, fuse open)	--	0.054m Apk	SS	--	
Model: FJ-SW20173301970 (33Vdc 1.97A) (with opto-coupler OP1 only)							
264Va.c., 60Hz	Primary circuits supplied by a.c. mains supply	Normal	264Vrms	--	SS	Frequency: 60Hz	ES3
		Abnormal	--	--	--	--	
		Single fault	--	--	--	--	
264Va.c., 60Hz	T2 pin TA-TB	Normal	178.3Vpk	--	SS	Frequency: 53.6KHz	ES3
264Va.c., 60Hz	T2 pin TA-TB (after Q4)	Normal	33.6Vdc	--	SS	DC	ES1
		Single fault SC Q4 pin D-S	0 (Unit shut down)	--	SS	--	
264Va.c., 60Hz	Output "+" to "-" / earth	Normal	32.8Vdc Max.	--	SS	--	ES1
		Abnormal Output overload	32.8Vdc Max.	--	SS	--	
		Single fault: SC/OC (Refer to fault condition on table B.4, output shutdown)	0	--	SS	--	
		Single fault: SC/OC (Refer to fault condition on table B.4, fuse open)	0	--	SS	--	
264Va.c., 60Hz	Plastic enclosure to earth (CY1=2200pF/CY 1=CY2=3300pF)	Normal	--	0.054m Apk	SS	--	ES1
		Abnormal Output overload	--	0.054m Apk	SS	--	

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Clause	Requirement + Test			Result - Remark		Verdict
		Single fault: SC/OC (Refer to fault condition on table B.4, output shutdown)	--	0.054m Apk	SS	--
		Single fault: SC/OC (Refer to fault condition on table B.4, fuse open)	--	0.054m Apk	SS	--
Supplementary information: 1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc. 2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.						

5.4.1.8	TABLE: Working voltage measurement				P
Location		RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments
Model: FJ-SW20170906000					
Transformer T2 pin TA – pin1		179	344	--	--
Transformer T2 pin TA – pin3		182	404	--	--
Transformer T2 pin TA – pin4		228	340	--	--
Transformer T2 pin TA – pin6		280	524	--	--
Transformer T2 pin TB – pin1		180	364	--	--
Transformer T2 pin TB – pin3		186	440	--	--
Transformer T2 pin TB – pin4		228	344	--	--
Transformer T2 pin TB – pin6		288	530	53.6K	The highest working voltage
OP1 pin 1-3		192	336	--	--
OP1 pin 1-4		190	336	--	--
OP1 pin 2-3		192	336	--	--
OP1 pin 2-4		192	338	--	--
OP2 pin 1-3		198	342	--	--
OP2 pin 1-4		194	336	--	--
OP2 pin 2-3		198	340	--	--
OP2 pin 2-4		192	338	--	--
CY1 primary to secondary		179	344	--	--

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Clause	Requirement + Test		Result - Remark	Verdict
CY4 primary to secondary	242	334	--	--
Model: FJ-SW20171096000				
Transformer T2 pin TA – pin1	181	344	--	--
Transformer T2 pin TA – pin3	183	404	--	--
Transformer T2 pin TA – pin4	229	340	--	--
Transformer T2 pin TA – pin6	167	432	--	--
Transformer T2 pin TB – pin1	182	396	--	--
Transformer T2 pin TB – pin3	186	460	53.6K	The highest peak voltage
Transformer T2 pin TB – pin4	231	344	--	--
Transformer T2 pin TB – pin6	281	432	53.6K	The highest rms voltage
OP1 pin 1-3	192	336	--	--
OP1 pin 1-4	192	336	--	--
OP1 pin 2-3	192	336	--	--
OP1 pin 2-4	192	338	--	--
OP2 pin 1-3	198	350	--	--
OP2 pin 1-4	194	346	--	--
OP2 pin 2-3	196	344	--	--
OP2 pin 2-4	194	342	--	--
CY1 primary to secondary	178	344	--	--
CY4 primary to secondary	240	333	--	--
Model: FJ-SW20172003250				
Transformer T2 pin TA – pin1	178	344	--	--
Transformer T2 pin TA – pin3	188	404	--	--
Transformer T2 pin TA – pin4	237	340	--	--
Transformer T2 pin TA – pin6	266	420	--	--
Transformer T2 pin TB – pin1	184	444	--	--
Transformer T2 pin TB – pin3	192	504	53.6K	The highest peak voltage
Transformer T2 pin TB – pin4	235	356	--	--
Transformer T2 pin TB – pin6	295	444	53.6K	The highest rms voltage
OP1 pin 1-3	190	336	--	--
OP1 pin 1-4	190	338	--	--
OP1 pin 2-3	190	336	--	--

IEC 62368-1				
Clause	Requirement + Test		Result - Remark	
OP1 pin 2-4	190	338	--	--
OP2 pin 1-3	192	344	--	--
OP2 pin 1-4	188	340	--	--
OP2 pin 2-3	192	342	--	--
OP2 pin 2-4	192	342	--	--
CY1 primary to secondary	176	346	--	--
CY4 primary to secondary	242	333	--	--
Model: FJ-SW20175401200				
Transformer T2 pin TA – pin1	181	340	--	--
Transformer T2 pin TA – pin3	185	400	--	--
Transformer T2 pin TA – pin4	224	340	--	--
Transformer T2 pin TA – pin6	280	452	--	--
Transformer T2 pin TB – pin1	203	540	--	--
Transformer T2 pin TB – pin3	221	612	53.6K	The highest peak voltage
Transformer T2 pin TB – pin4	241	392	--	--
Transformer T2 pin TB – pin6	344	524	53.6K	The highest rms voltage
OP1 pin 1-3	192	336	--	--
OP1 pin 1-4	192	334	--	--
OP1 pin 2-3	190	336	--	--
OP1 pin 2-4	192	338	--	--
OP2 pin 1-3	190	356	--	--
OP2 pin 1-4	186	356	--	--
OP2 pin 2-3	190	354	--	--
OP2 pin 2-4	192	352	--	--
CY1 primary to secondary	182	346	--	--
CY4 primary to secondary	242	334	--	--
Supplementary information:				
Test voltage 240Vac, 60Hz				

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics			N/A
Method..... :	ISO 306 / B50			—
Object/ Part No./Material	Manufacturer/trademark	Thickness (mm)	T softening (°C)	

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Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information:			

5.4.1.10.3 TABLE: Ball pressure test of thermoplastics					P
Allowed impression diameter (mm)..... : ≤ 2 mm					—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)	
Transformer bobbin Material / 4130	Chang Chun Plastics	1)	125	1.0	
Insulation cover on transformer / FR530(I)(+)(f1)	E I DUPONT DE NEMOURS & CO INC	1)	125	0.5	
Insulation cover on transformer / FR530L(I)(+)(f1)	E I DUPONT DE NEMOURS & CO INC	1)	125	0.5	
Transformer bobbin Material / T375J(G5)(G6)	Chang Chun Plastics Co Ltd	1)	125	0.8	
Transformer bobbin Material / T375HF	Chang Chun Plastics Co Ltd	1)	125	0.9	
Transformer bobbin Material / T378J	Chang Chun Plastics Co Ltd	1)	125	0.8	
Transformer bobbin Material / T-378J	Chang Chun Plastics Co Ltd	1)	125	0.9	
Supplementary information: 1). See appended table 4.1.2.					
The other bobbin materials of transformer and filter are phenolic, no test is needed. No other parts applied.					

5.4.2, 5.4.3 TABLE: Minimum Clearances/Creepage distance								P
Clearance (cl) and creepage distance (cr) at/of/between:	U _p (V)	U _{rms} (V)	Freq ¹⁾ (kHz)	Required cl (mm)*	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
Line trace to Neutral trace before fuse F1 (B)	420	250	<30	2.3	5.5	--	2.5	5.5
PCB trace under fuse or F1 L pin to case after fuse (B)	420	250	<30	2.3	2.9	--	2.5	4.8
Line trace to primary trace for LF1 (B)	420	250	<30	2.3	3.3	--	2.5	3.3
PE to L/N trace (B)	420	250	<30	2.3	3.1		2.5	4.6

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Clause	Requirement + Test				Result - Remark			Verdict
PCB: primary to secondary traces under CY1(CY1&CY2 in series used) (B)	420	250	<30	2.3	7.0	--	2.5	7.0
PCB: primary to secondary traces under CY2(CY1&CY2 used series) (S)	420	250	<30	2.3	5.0	--	2.5	5.0
CY3 primary trace to PE (B)	420	250	<30	2.3	5.1	--	2.5	5.1
CY4 primary trace to PE (B)	420	250	<30	2.3	4.4		2.5	4.4
Primary heat-sink to accessible enclosure (R)	420	250	<30	4.5	7.8	--	5.0	7.8
Primary circuit (PCB trace under RT1) to enclosure screw (R)	420	250	<30	4.5	7.4	--	5.0	7.4
Primary circuit (PCB trace under primary line filter LF1) to enclosure screw (R)	420	250	<30	4.5	6.3	--	5.0	6.3
PCB: primary to secondary traces under CY1 (without CY2)(R)	420	250	<30	4.5	7.0	--	5.0	7.0
PCB: primary to secondary traces under OP1 (R)	420	250	<30	4.5	7.5	--	5.0	7.5
PCB: primary to secondary traces under OP2 (R)	420	250	<30	4.5	7.2	--	5.0	7.2
PCB: primary to secondary traces under T2 (R)	612	344	53.6	4.5	9.1	--	6.9	9.1
PCB: core of T2 to secondary heat-sink HS2 (bottom) through primary winding (R)	612	344	53.6	4.5	7.3	--	6.9	7.3
Component: primary heat-sink to secondary heat-sink (R)	420	250	<30	4.5	8.8	--	5.0	8.8
Transformer (T2): core to secondary heat-sink HS2 over top of the cover (R)	612	344	53.6	4.5	11.1	--	6.9	11.1

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Clause	Requirement + Test				Result - Remark			Verdict
Transformer (T2): primary EMC copper foil (bottom) to CY1 secondary pin (without CY2) (R)	612	344	53.6	4.5	8.0	--	6.9	8.0
Transformer (T2): primary winding (top) to C22 over the tube on secondary winding (TA) (R)	612	344	53.6	4.5	10.0	--	6.9	10.0
Supplementary information: B=Basic insulation, R=Reinforced insulation								
<p>Note 1: Only for frequency above 30 kHz</p> <p>Note 2: See table 5.4.2.4 if this is based on electric strength test</p> <p>Note 3: Provide Material Group: IIIb</p> <p>1) Triple insulated wire used in secondary side. Core of transformer (T2) is considered as primary. Insulation cover and tape used on transformer as reinforced insulation.</p> <p>2) Components LF1, LF2, CX1, BD1, C6, T2, Q4, C7 and heat-sink are additional by glue.</p> <p>3) 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.</p> <p>4) Unless otherwise specified, the worst conditions of Cl. & Cr. in above mentioned locations have been considered and listed.</p>								

5.4.4.2	TABLE: Minimum distance through insulation				P
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)	
Enclosure	420	Reinforce insulation	0.4	1)	
Bobbin of transformer (T2)	612	Reinforce insulation	0.4	1)	
Insulation cover on transformer	612	Reinforce insulation	0.4	1)	
Insulation tape used for transformer (T2)	612	Reinforce insulation	See only 5.4.4.9	See only 5.4.4.9	
Supplementary information:					
1). See appended table 4.1.2.					

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz					P
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)
Bobbin of transformer (T2)	17	53.6	0.70	0.90	Reinforce insulation	612
Insulation cover on transformer	33	53.6	0.35	0.40	Reinforce insulation	612

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Clause	Requirement + Test			Result - Remark		Verdict
Insulation tape used for transformer (T2)	52	53.6	0.46	0.10	Reinforce insulation	612
Supplementary information:						

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary:				
L and N of input (with fuse opened)		DC	2500	No
L/ N to earth		DC	2500	No
Reinforced:				
Unit primary to secondary		DC	4000	No
Unit primary to plastic enclosure (with metal foil)		DC	4000	No
Primary to secondary of transformer T2		DC	4000	No
Secondary to core of transformer T2		DC	4000	No
Insulation cover of transformer (T2)		DC	4000	No
Insulation tape used on transformer (single layer)		DC	4000	No
Supplementary information:				
Core of transformers T2 was considered as primary. Test after humidity treatment, heating test, and for unit primary to secondary, primary to plastic enclosure electric strength after each fault condition test. Tests were performed on product with each source listed in table 4.1.2.				
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
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (Vpk)	ES Class
Phase to Neutral	264Vac, 60Hz	N	--	32V	ES1
Phase to Neutral	264Vac, 60Hz	S (R2 open)	--	56V	ES1
Phase to Neutral	264Vac, 60Hz	S (R2 shorted)	--	20V	ES1
Supplementary information:					
The end system may be pluggable equipment type A. Limit of ES1 applied for mains terminal as accessible part.					
X-capacitors installed for testing: CX1=0.47µF±10%.					
[x] bleeding resistor rating: R=(1.8/2+1.8/2)MΩ=1.8MΩ; R2=R3=R37=R38=1.8MΩ.					
[] ICX:					
1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit					

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Clause	Requirement + Test	Result - Remark	Verdict

5.6.6	TABLE: Resistance of protective conductors and terminations				P
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
PE terminal to output cord terminal which connected to green/yellow wire terminal on secondary side of PWB	32	2	0.32	0.010	
PE terminal to output cord terminal which connected to green/yellow wire terminal on secondary side of PWB	40	2	0.60	0.015	
Supplementary information:					
North American deviation was considered.					

5.7.4	TABLE: Unearthed accessible parts					P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V _{rms} or V _{pk})	Current (A _{rms} or A _{pk})	Freq. (Hz)	
Plastic enclosure to earth	Normal	264Vac, 60Hz	--	0.054mA _{pk}	--	ES1
Plastic enclosure to earth	Abnormal Output overload	264Vac, 60Hz	--	0.054mA _{pk}	--	ES1
Plastic enclosure to earth	Abnormal Transformer overload	264Vac, 60Hz	--	0.054mA _{pk}	--	ES1
Plastic enclosure to earth	Single fault: SC/OC (Refer to fault condition on table B.4, output shutdown)	264Vac, 60Hz	--	0.054mA _{pk}	--	ES1
Plastic enclosure to earth	Single fault: SC/OC (Refer to fault condition on table B.4, Unit normal working)	264Vac, 60Hz	--	0.054mA _{pk}	--	ES1
Plastic enclosure to earth	Single fault: SC/OC (Refer to fault condition on table B.4, fuse open)	264Vac, 60Hz	--	0.054mA _{pk}	--	ES1
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

Abbreviation: SC=Short circuit, OC=open circuit

5.7.5	TABLE: Earthed accessible conductive part			P
Supply voltage (V).....:	264Vac, 60Hz			—
Phase(s)	[x] Single Phase; [] Three Phase: [] Delta [] Wye			
Power Distribution System	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
Model: FJ-SW20175401200 (CY1=CY3=CY4=2200pF)				
Output terminal	1(e opened, normal and reverse polarity p)	0.584 / 0.584	--	
Output terminal	2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)	N/A	--	
Output terminal	3 (for IT system, each phase conductor faulted to earth, one at a time (switch g)	N/A ^{a)}	--	
Output terminal	4 (for three-phase, each phase conductor open, one at a time switches l)	N/A ^{b)}	--	
Output terminal	5 (IT power system or three phase delta system)	N/A ^{c)}	--	
Output terminal	6 (three-phase for use on centre-earthed dalta supply system)	N/A ^{d)}	--	
Output terminal	8 (incidental electrically connected to other parts)	N/A ^{e)}	--	
Model: FJ-SW20175401200 (CY1=CY2=3300pF, CY3=CY4=2200pF)				
Output terminal	1(e opened, normal and reverse polarity p)	0.520 / 0.520	--	
Output terminal	2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)	N/A	--	
Output terminal	3 (for IT system, each phase conductor faulted to earth, one at a time (switch g)	N/A ^{a)}	--	
Output terminal	4 (for three-phase, each phase conductor open, one at a time switches l)	N/A ^{b)}	--	

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Clause	Requirement + Test	Result - Remark	Verdict
Output terminal	5 (IT power system or three phase delta system)	N/A ^{c)}	--
Output terminal	6 (three-phase for use on centre-earthed delta supply system)	N/A ^{d)}	--
Output terminal	8 (incidental electrically connected to other parts)	N/A ^{e)}	--
Supplementary Information:			
[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 delta supply system. e) Not such parts.			

5.8	TABLE: Backfeed safeguard in battery backed up supplies					N/A
Location	Supply voltage (V)	Operating and fault condition	Time (s)	Open-circuit voltage (V)	Touch current (A)	ES Class
Supplementary information:						
Abbreviation: SC= short circuit, OC= open circuit						

6.2.2	TABLE: Power source circuit classifications					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power ¹⁾ (W)	Time (S)	PS class
Model: FJ-SW20170906000						
Output + to -	Normal condition	9.0	7.7	65.1	5	PS2
Output + to -	OP1 pin1-2 short circuit	0*	0*	0*	3	PS1
Output + to -	OP1 pin3-4 short circuit	9.0&	7.7&	65.1&	5	PS2
Output + to -	OP1 pin1 open circuit	0*	0*	0*	3	PS1
Output + to -	OP1 pin3 open circuit	9.0&	7.7&	65.1&	5	PS2

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Clause	Requirement + Test			Result - Remark		Verdict
Output + to -	OP2 pin1-2 short circuit	0*	0*	0*	3	PS1
Output + to -	OP2 pin3-4 short circuit	9.0&	7.7&	65.1&	5	PS2
Output + to -	OP2 pin1 open circuit	0*	0*	0*	3	PS1
Output + to -	OP2 pin3 open circuit	9.0&	7.7&	65.1&	5	PS2
Output + to -	R1 short circuit	0#	0#	0#	3	PS1
Model: FJ-SW20171096000						
Output + to -	Normal condition	10.8	7.0	73.0	5	PS2
Output + to -	OP1 pin1-2 short circuit	0*	0*	0*	3	PS1
Output + to -	OP1 pin3-4 short circuit	10.8&	7.0&	73.0&	5	PS2
Output + to -	OP1 pin1 open circuit	0*	0*	0*	3	PS1
Output + to -	OP1 pin3 open circuit	10.8&	7.0&	73.0&	5	PS2
Output + to -	OP2 pin1-2 short circuit	0*	0*	0*	3	PS1
Output + to -	OP2 pin3-4 short circuit	10.8&	7.0&	73.0&	5	PS2
Output + to -	OP2 pin1 open circuit	0*	0*	0*	3	PS1
Output + to -	OP2 pin3 open circuit	10.8&	7.0&	73.0&	5	PS2
Output + to -	R1 short circuit	0#	0#	0#	3	PS1
Model: FJ-SW20172003250						
Output + to -	Normal condition	19.7	3.5	68.2	5	PS2
Output + to -	OP1 pin1-2 short circuit	0*	0*	0*	3	PS1
Output + to -	OP1 pin3-4 short circuit	19.7&	3.5&	68.2&	5	PS2
Output + to -	OP1 pin1 open circuit	0*	0*	0*	3	PS1
Output + to -	OP1 pin3 open circuit	19.7&	3.5&	68.2&	5	PS2
Output + to -	OP2 pin1-2 short circuit	0*	0*	0*	3	PS1
Output + to -	OP2 pin3-4 short circuit	19.7&	3.5&	68.2&	5	PS2

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
Output + to -	OP2 pin1 open circuit	0*	0*	0*	3	PS1
Output + to -	OP2 pin3 open circuit	19.7&	3.5&	68.2&	5	PS2
Output + to -	R1 short circuit	0#	0#	0#	3	PS1
Model: FJ-SW20175401200						
Output + to -	Normal condition	53.8	1.54	83.0	5	PS2
Output + to -	OP1 pin1-2 short circuit	0*	0*	0*	3	PS1
Output + to -	OP1 pin3-4 short circuit	54.7&	1.50&	80.5&	5	PS2
Output + to -	OP1 pin1 open circuit	0*	0*	0*	3	PS1
Output + to -	OP1 pin3 open circuit	54.7&	1.50&	80.5&	5	PS2
Output + to -	OP2 pin1-2 short circuit	0*	0*	0*	3	PS1
Output + to -	OP2 pin3-4 short circuit	54.7&	1.50&	80.5&	5	PS2
Output + to -	OP2 pin1 open circuit	0*	0*	0*	3	PS1
Output + to -	OP2 pin3 open circuit	54.7&	1.50&	80.5&	5	PS2
Output + to -	R1 short circuit	0#	0#	0#	3	PS1
Supplementary information: Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3. Note: * Unit shutdown immediately recoverable, no hazard; & Unit worked normally, no hazard; # F1 opened immediately, Q3 damaged, no hazard.						

6.2.3.1	TABLE: Determination of Arcing PIS				P
Location	Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No	
Primary circuits and secondary circuit / parts	--	--	--	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.					

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.3.2	TABLE: Determination of resistive PIS		P
Location	Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No
All internal circuits/components	--	--	Yes (declaration)
Supplementary information:			
Abbreviation: SC= short circuit; OC= open circuit Considered resistive PIS in all primary and secondary circuit. 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
Lamp manufacturer	Lamp type	Explosion method	Longest axis of glass particle (mm)	Particle found beyond 1 m Yes / No	
Supplementary information:					

9.6	TABLE: Temperature measurements for wireless power transmitters							N/A
Supply voltage (V)..... :								—
Max. transmit power of transmitter (W) :								—
Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)
Supplementary information:								

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Clause	Requirement + Test			Result - Remark	Verdict
5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements				P
Supply voltage (VAC)..... :	90Vac, 50Hz	90Vac, 50Hz	264Vac, 60Hz	264Vac, 60Hz	—
Ambient temperature during test T_{amb} (°C) :	--	--	--	--	—
Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)
Model: FJ-SW20170906000	Label up 90Vac, 50Hz	Label down 90Vac, 50Hz	Label up 264Vac, 60Hz	Label down 264Vac, 60Hz	--
AC Inlet	56.9	57.2	54.0	53.7	70
Y-capacitor CY3	85.5	85.4	77.7	77.0	125
Line chock of LF1	73.1	73.2	66.2	65.4	130
Varistor RV1	91.7	90.3	77.4	76.9	105
X-capacitor CX1	83.9	83.7	72.0	71.0	100
Line chock of LF2	92.8	91.9	76.8	76.1	130
PCB under BD1	101.1	99.6	87.8	88.0	130
E-capacitor C6	93.4	92.6	82.8	82.2	105
PCB under Q3	105.0	103.7	94.0	94.0	130
Y-capacitor CY1	84.4	85.7	81.9	80.4	125
T2 coil	101.8	102.8	101.4	99.6	110
T2 core	94.2	97.8	96.8	92.9	110
PCB under Q4	94.1	92.5	87.5	88.4	130
Opto coupler OP1	97.3	93.3	91.1	94.6	110
Opto coupler OP2	96.6	91.9	89.8	94.0	110
E-capacitor C7	97.3	96.8	98.4	96.5	105
Line chock of LF3	80.7	83.7	82.7	80.0	130
Output wire	73.6	77.4	76.5	73.2	80
PE wire (near heat-sink HS1)	84.0	85.6	82.7	81.0	105
Plastic enclosure inside near T2	94.1	97.7	97.0	93.0	115
Ambient	45.1	45.4	45.5	45.5	--
Plastic enclosure outside near T2	58.3	68.1	67.7	58.5	77*
Ambient	25.0	25.0	25.0	25.0	--
Model: FJ-SW20171096000	Label up 90Vac, 50Hz	Label down 90Vac, 50Hz	Label up 264Vac, 60Hz	Label down 264Vac, 60Hz	--

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Clause	Requirement + Test		Result - Remark		Verdict
AC Inlet	59.5	61.8	60.4	56.8	70
Y-capacitor CY3	84.3	84.2	75.9	71.8	125
Line chock of LF1	83.0	82.7	77.2	72.9	130
Varistor RV1	92.3	91.1	82.2	77.6	105
X-capacitor CX1	90.8	90.2	83.9	79.4	100
Line chock of LF2	100.3	98.5	84.4	79.9	130
PCB under BD1	110.1	104.2	96.3	88.7	130
E-capacitor C6	98.5	97.4	88.1	84.9	105
PCB under Q3	115.0	108.7	100.5	93.2	130
Y-capacitor CY1	81.2	83.9	80.0	77.0	125
T2 coil	105.5	105.1	102.0	96.7	110
T2 core	100.5	101.2	97.0	92.8	110
PCB under Q4	99.9	98.8	96.0	90.7	130
Opto coupler OP1	99.9	93.2	94.7	85.4	110
Opto coupler OP2	98.1	92.4	93.4	84.8	110
E-capacitor C7	90.3	90.1	86.7	81.8	105
Line chock of LF3	77.5	74.3	71.4	69.9	130
Output wire	72.7	70.9	67.1	66.7	80
PE wire (near heat-sink HS1)	81.3	85.4	75.5	73.8	105
PE wire (near LF2)	74.5	73.3	69.6	68.7	105
Plastic enclosure inside near T2	96.6	99.5	94.0	91.3	115
Ambient	45.2	45.5	45.5	45.5	--
Plastic enclosure outside near T2	70.2	69.1	61.1	62.3	77*
Ambient	25.0	25.0	25.0	25.0	--
Model: FJ-SW20172003250	Label up 90Vac, 560Hz	Label down 90Vac, 50Hz	Label up 264Vac, 50Hz	Label down 264Vac, 50Hz	--
AC Inlet	67.8	68.8	61.3	62.2	70
Y-capacitor CY3	95.3	97.5	78.1	79.4	125
Line chock of LF1	87.3	89.5	76.3	77.7	130
Varistor RV1	102.3	100.0	89.1	90.4	105
X-capacitor CX1	95.4	97.7	87.2	88.3	100
Line chock of LF2	107.5	110.4	86.2	87.5	130
PCB under BD1	100.2	102.5	85.8	87.0	130
E-capacitor C6	101.6	102.1	90.1	91.5	105

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Clause	Requirement + Test		Result - Remark		Verdict
PCB under Q3	113.6	116.1	101.3	102.3	130
Y-capacitor CY1	88.8	91.0	85.7	87.1	125
T2 coil	106.3	105.4	106.2	106.9	110
T2 core	103.2	101.6	101.9	103.2	110
PCB under Q4	103.7	109.5	112.2	114.5	130
Opto coupler OP1	97.7	100.5	97.3	98.6	110
Opto coupler OP2	97.7	100.8	98.5	100.1	110
E-capacitor C7	88.5	92.9	93.4	95.3	105
Line chock of LF3	69.1	71.3	70.0	71.7	130
Output wire	64.5	66.6	65.5	67.2	80
PE wire (near heat-sink HS1)	83.9	85.8	74.2	75.3	105
Plastic enclosure inside near T2	97.7	100.4	96.6	98.3	115
Ambient	45.2	45.4	45.3	45.4	--
Plastic enclosure outside near T2	65.2	66.1	64.7	64.8	77*
Ambient	25.0	25.0	25.0	25.0	--
Model: FJ-SW20175401200	Label up 90Vac, 60Hz	Label down 90Vac, 60Hz	Label up 264Vac, 50Hz	Label down 264Vac, 50Hz	--
AC Inlet	54.3	53.5	48.6	47.6	70
Y-capacitor CY3	82.2	78.4	60.2	61.6	125
Line chock of LF1	67.8	64.3	54.6	54.6	130
Varistor RV1	86.0	81.2	63.9	65.3	105
X-capacitor CX1	83.1	78.0	63.3	64.3	100
Line chock of LF2	95.6	90.3	66.9	68.9	130
PCB under BD1	93.8	90.3	66.7	67.8	130
E-capacitor C6	96.2	91.1	69.7	71.2	105
PCB under Q3	102.5	97.6	77.8	80.4	130
Y-capacitor CY1	83.3	83.3	72.3	75.8	125
T2 coil	102.2	99.4	90.7	91.9	110
T2 core	99.3	97.1	89.9	91.6	110
PCB under Q4	107.9	107.5	98.4	100.0	130
Opto coupler OP1	92.1	90.2	76.0	78.2	110
Opto coupler OP2	94.4	90.8	76.8	80.2	110
E-capacitor C7	70.1	70.3	67.3	66.4	105
Line chock of LF3	95.4	92.9	70.3	71.8	130

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Clause	Requirement + Test				Result - Remark		Verdict
Output wire	71.5	71.7	68.6	67.7	80		
PE wire (near heat-sink HS1)	80.3	78.7	75.9	76.1	105		
Plastic enclosure inside near T2	80.4	77.1	87.2	87.9	115		
Ambient	45.2	45.6	45.0	45.0	--		
Plastic enclosure outside near T2	51.0	48.8	51.6	48.1	77*		
Ambient	25.0	25.0	25.0	25.0	--		
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:							
<p>* Temperature limit for TS1 of accessible enclosure according to Table 38.</p> <p>Note 1: The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (T_{ma}) of 45°C.</p> <p>Note 2: The temperatures were measured under the worst case normal mode defined in clause B.2.1.</p> <p>Note 3: Temperature limits are calculated as follows:</p> <p>Winding components providing safety isolation:</p> <p>Class B → T_{max} = 120 – 10 = 110 °C</p>							

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: FJ-SW20170906000								
90	50	1.212	--	65.94	--	F1	1.212	Load with 9Vdc/6A
90	60	1.148	--	65.72	--	F1	1.148	Same as above
100	50	1.034	1.5	64.85	--	F1	1.034	Same as above
100	60	1.005	1.5	65.00	--	F1	1.005	Same as above
240	50	0.503	1.5	63.18	--	F1	0.503	Same as above
240	60	0.445	1.5	63.28	--	F1	0.445	Same as above
264	50	0.467	--	63.24	--	F1	0.467	Same as above
264	60	0.434	--	63.43	--	F1	0.434	Same as above
Model: FJ-SW20171096000								
90	50	1.341	--	76.76	--	F1	1.341	Load with 10.9Vdc/6A
90	60	1.287	--	76.72	--	F1	1.287	Same as above
100	50	1.176	1.5	75.64	--	F1	1.176	Same as above
100	60	1.119	1.5	75.88	--	F1	1.119	Same as above
240	50	0.580	1.5	74.24	--	F1	0.580	Same as above

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Clause	Requirement + Test					Result - Remark		Verdict
240	60	0.527	1.5	74.31	--	F1	0.527	Same as above
264	50	0.532	--	74.45	--	F1	0.532	Same as above
264	60	0.490	--	74.62	--	F1	0.490	Same as above
Model: FJ-SW20172003250								
90	50	1.358	--	77.83	--	F1	1.358	Load with 20Vdc/3.25A
90	60	1.313	--	77.49	--	F1	1.313	Same as above
100	50	1.185	1.5	76.93	--	F1	1.185	Same as above
100	60	1.160	1.5	76.38	--	F1	1.160	Same as above
240	50	0.584	1.5	75.45	--	F1	0.584	Same as above
240	60	0.524	1.5	74.94	--	F1	0.524	Same as above
264	50	0.540	--	75.77	--	F1	0.540	Same as above
264	60	0.502	--	75.12	--	F1	0.502	Same as above
Model: FJ-SW20175401200								
90	50	1.294	--	73.20	--	F1	1.294	Load with 54Vdc/1.2A
90	60	1.291	--	73.32	--	F1	1.291	Same as above
100	50	1.164	1.5	72.58	--	F1	1.164	Same as above
100	60	1.174	1.5	72.56	--	F1	1.174	Same as above
240	50	0.546	1.5	70.94	--	F1	0.546	Same as above
240	60	0.544	1.5	70.91	--	F1	0.544	Same as above
264	50	0.515	--	70.94	--	F1	0.515	Same as above
264	60	0.512	--	70.93	--	F1	0.512	Same as above
Supplementary information:								
The maximum measured current under rated voltage did not exceed 110% of the rated current.								

B.3, B.4		TABLE: Abnormal operating and fault condition tests					P
Ambient temperature T _{amb} (°C)					See below		—
Power source for EUT: Manufacturer, model/type, outputrating....					--		—
Component No.	Condition	Supply voltage (Vac)	Test time	Fuse no.	Fuse current (A)	Observation	
Model: FJ-SW20175401200							
Output	o-l	264	3h36min	F1	0.515→ 0.582→ 0.049	Output overload to 1.5A and unit shutdown at 1.6A, Recoverable when fault removed and no hazards observed.	

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Clause	Requirement + Test			Result - Remark		Verdict
						T2 winding: 106.4°C; T2 core: 105.7°C; Ambient: 45.0°C. Plastic enclosure outside near T2: 54.9 °C; Ambient: 25.0°C. Uout=53.8Vdc Max. Plastic enclosure to earth: 0.054mApeak
Transformer	o-l	264	6h06min	F1	0.515→ 0.597→ 0.044	Output normal loading. Transformer overload to 0.4A and unit shutdown at 0.5A, Recoverable when fault removed and no hazards observed. T2 winding: 109.5°C; T2 core: 104.0°C; Ambient: 45.2°C. Enclosure outside near T2: 57.1°C; Ambient: 25.0°C. Uout=53.8Vdc Max. Plastic enclosure to earth: 0.054mApeak
Model: FJ-SW2017090600						
Output	o-l	264	4h54min	F1	0.467→ 0.512→ 0.024	Output overload to 7.5A and unit shutdown at 7.6A, Recoverable when fault removed and no hazards observed. T2 winding: 104.8 °C; T2 core: 97.8 °C; Ambient: 45.5°C. Enclosure outside near T2: 70.3°C; Ambient: 25.0°C. Uout=9.0Vdc Max. Plastic enclosure to earth: 0.054mApeak
Transformer	o-l	264	4h20min	F1	0.467→ 0.520→ 0.048	Output normal loading. Transformer overload to 1.6A and unit shutdown at 1.7A, Recoverable when fault removed and no hazards observed. T2 winding: 107.3°C;

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Clause	Requirement + Test			Result - Remark		Verdict
						T2 core: 101.9°C; Ambient: 45.0°C. Enclosure outside near T2: 74.1°C; Ambient: 25.0°C. Uout=9.0Vdc Max. Plastic enclosure to earth: 0.054mApeak
Model: FJ-SW20171096000						
Output	o-l	264	5h24min	F1	0.532→ 0.570→ 0.020	Output overload to 7.0A and unit shutdown at 7.1A, Recoverable when fault removed and no hazards observed. T2 winding: 107.3°C; T2 core: 102.3°C; Ambient: 45.0°C. Enclosure outside near T2: 65.3 °C; Ambient: 25.0°C. Uout=10.8Vdc Max. Plastic enclosure to earth: 0.054mApeak
Transformer	o-l	264	4h48min	F1	0.532→ 0.585→ 0.060	Output normal loading. Transformer overload to 1.0A and unit shutdown at 1.1A, Recoverable when fault removed and no hazards observed. T2 winding: 110.5°C; T2 core: 104.7°C; Ambient: 45.0°C. Enclosure outside near T2: 69.1°C; Ambient: 25.0°C. Uout=10.8Vdc Max. Plastic enclosure to earth: 0.054mApeak
Model: FJ-SW20172003250						
Output	o-l	264	6h06min	F1	0.540→ 0.562→ 0.045	Output overload to 3.5A and unit shutdown at 3.6A, Recoverable when fault removed and no hazards observed. T2 winding: 115.5°C;

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Clause	Requirement + Test			Result - Remark		Verdict
						T2 core: 110.1°C; Ambient: 45.0°C. Enclosure outside near T2: 70.1°C; Ambient: 25.0°C. Uout=19.7Vdc Max. Plastic enclosure to earth: 0.054mApeak
Transformer	o-l	264	5h48min	F1	0.540→ 0.577→ 0.046	Output normal loading. Transformer overload to 0.3A and unit shutdown at 0.4A, Recoverable when fault removed and no hazards observed. T2 winding: 118.4°C; T2 core: 112.4°C; Ambient: 45.2°C. Enclosure outside near T2: 73.3°C; Ambient: 25.0°C. Uout=19.7Vdc Max. Plastic enclosure to earth: 0.054mApeak
Model: FJ-SW20175401200						
RV1	s-c	264	1s	F1	0	F1 opened immediately, no hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
BD1 pin AC-V+	s-c	264	1s	F1	0	F1 opened immediately, no hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
C6	s-c	264	1s	F1	0	F1 opened immediately, no hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
Q3 pin G-D	s-c	264	1s	F1	0	F1 opened immediately, Q3 damaged no hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
Q3 pin D-S	s-c	264	1s	F1	0	F1 opened immediately, Q3

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Clause	Requirement + Test				Result - Remark	Verdict
						damaged, no hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
Q3 pin G-S	s-c	264	30min	F1	0.019	Unit shutdown immediately and recoverable, No hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
R1	s-c	264	1s	F1	0	F1 opened immediately, Q3 damaged, no hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
U1 pin 5-1	s-c	264	30min	F1	0.045	Unit shutdown immediately and recoverable, No hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
U1 pin 5-2	s-c	264	30min	F1	0.05	Unit shutdown immediately and recoverable, No hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
OP1 pin1-2	s-c	264	30min	F1	0.049	Unit shutdown immediately and recoverable, No hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
OP1 pin3-4	s-c	264	30min	F1	0.515	Unit normal working, No hazard. Uout=53.8Vdc; Plastic enclosure to earth: 0.054mApeak
OP1 pin1	o-c	264	30min	F1	0.042	Unit shutdown immediately and recoverable, No hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
OP1 pin3	o-c	264	30min	F1	0.515	Unit normal working, No hazard. Uout=53.8Vdc; Plastic enclosure to earth: 0.054mApeak
OP2 pin1-2	s-c	264	30min	F1	0.05	Unit shutdown immediately

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	Verdict
						and recoverable, No hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
OP2 pin3-4	s-c	264	30min	F1	0.515	Unit normal working, No hazard. Uout=53.8Vdc; Plastic enclosure to earth: 0.054mApeak
OP2 pin1	o-c	264	30min	F1	0.043	Unit shutdown immediately and recoverable, No hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
OP2 pin3	o-c	264	30min	F1	0.515	Unit normal working, No hazard. Uout=53.8Vdc; Plastic enclosure to earth: 0.054mApeak
T2 pin 1-3	s-c	264	30min	F1	0.015	Unit shutdown immediately and recoverable, No hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
T2 pin 4-6	s-c	264	30min	F1	0.015	Unit shutdown immediately and recoverable, No hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
T2 pin TA-TB	s-c	264	30min	F1	0	F1 opened immediately, Q3 damaged, no hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
Q4 pin D-pin S	s-c	264	30min	F1	0.036	Unit shutdown immediately and recoverable, No hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
C7	s-c	264	30min	F1	0.03	Unit shutdown immediately and recoverable, No hazard. Uout=0Vdc; Plastic enclosure to earth: 0.054mApeak
Output	s-c	264	30min	F1	0.049	Unit shutdown immediately

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Clause	Requirement + Test				Result - Remark	Verdict
					and recoverable, No hazard. U _{out} =0Vdc; Plastic enclosure to earth: 0.054mA _{peak}	
Supplementary information:						
<p>s-c=short circuit, o-c=open circuit, o-l=overload</p> <p>Test table is provided to record abnormal for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test. Specify if test condition by indicating "Single Fault" then the condition for Clause B.4.</p> <p>1) The overloaded condition is applied according to annex G.5.3.3. Winding Limit for Transformer: 175-10 =165°C. Enclosure outside: TS2=87°C.</p> <p>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.</p> <p>3) The test result showed no Class 1 or 2 energy source become Class 3 level during and after single fault condition.</p> <p>4) The tests where fuse opened were repeated with each source of fuse and with same result observed.</p> <p>5) Output voltage measured under abnormal or Single fault conditions were not increase by more than 10% of its rated output voltage under normal operating condition.</p>						

M.3	TABLE: Protection circuits for batteries provided within the equipment						N/A
Is it possible to install the battery in a reverse polarity position?.....:						—	
Equipment Specification	Charging						
	Voltage (V)			Current (A)			
Manufacturer/type	Battery specification						
	Non-rechargeable batteries		Rechargeable batteries				
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)	
			Voltage (V)	Current (A)			
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C)							
Component No.	Fault condition	Charge/discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
Supplementary information:							
Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.							

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery						N/A
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IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Maximum specified charging voltage (V)..... :					—
Maximum specified charging current (A) :					—
Highest specified charging temperature (°C) :					
Lowest specified charging temperature (°C) :					
Battery manufacturer/type	Operating and fault condition	Measurement			Observation
		Charging voltage (V)	Charging current (A)	Temp. (°C)	
Supplementary information:					
Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature					

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						P
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
Model: FJ-SW20170506000							
Output	Normal conditions	5.20	5	7.0	8	33.1	100
OP1 pin 1-2	SC	0	1	0*	8	0*	100
OP1 pin 3-4	SC	5.20	5	7.0	8	33.1	100
OP1 pin 1	OC	0	1	0*	8	0*	100
OP1 pin 3	OC	5.20	5	7.0	8	33.1	100
OP2 pin 1-2	SC	0	1	0*	8	0*	100
OP2 pin 3-4	SC	5.20	5	7.0	8	33.1	100
OP2 pin 1	OC	0	1	0*	8	0*	100
OP2 pin 3	OC	5.20	5	7.0	8	33.1	100
R1	SC	0	1	0**	8	0**	100
Model: FJ-SW20170906000							
Output	Normal conditions	9.0	5	7.7	8	65.1	100
OP1 pin 1-2	SC	0	1	0*	8	0*	100
OP1 pin 3-4	SC	9.0	5	7.7	8	65.1	100
OP1 pin 1	OC	0	1	0*	8	0*	100
OP1 pin 3	OC	9.0	5	7.7	8	65.1	100

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
OP2 pin 1-2	SC	0	1	0*	8	0*	100
OP2 pin 3-4	SC	9.0	5	7.7	8	65.1	100
OP2 pin 1	OC	0	1	0*	8	0*	100
OP2 pin 3	OC	9.0	5	7.7	8	65.1	100
R1	SC	0	1	0**	8	0**	100
Model: FJ-SW20171096000							
Output	Normal conditions	10.8	5	7.0	8	73.0	100
OP1 pin 1-2	SC	0	1	0*	8	0*	100
OP1 pin 3-4	SC	10.8	5	7.0	8	73.0	100
OP1 pin 1	OC	0	1	0*	8	0*	100
OP1 pin 3	OC	10.8	5	7.0	8	73.0	100
OP2 pin 1-2	SC	0	1	0*	8	0*	100
OP2 pin 3-4	SC	10.8	5	7.0	8	73.0	100
OP2 pin 1	OC	0	1	0*	8	0*	100
OP2 pin 3	OC	10.8	5	7.0	8	73.0	100
R1	SC	0	1	0**	8	0**	100
Model: FJ-SW20172003250							
Output	Normal conditions	19.7	5	3.5	8	68.2	100
OP1 pin 1-2	SC	0	1	0*	8	0*	100
OP1 pin 3-4	SC	19.7	5	3.5	8	68.2	100
OP1 pin 1	OC	0	1	0*	8	0*	100
OP1 pin 3	OC	19.7	5	3.5	8	68.2	100
OP2 pin 1-2	SC	0	1	0*	8	0*	100
OP2 pin 3-4	SC	19.7	5	3.5	8	68.2	100
OP2 pin 1	OC	0	1	0*	8	0*	100
OP2 pin 3	OC	19.7	5	3.5	8	68.2	100
R1	SC	0	1	0**	8	0**	100
Model: FJ-SW20175401200							

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
Output	Normal conditions	53.8	5	1.54	2.78	83.0	100
OP1 pin 1-2	SC	0	1	0*	8	0*	100
OP1 pin 3-4	SC	54.7	5	1.50	2.74	80.5	100
OP1 pin 1	OC	0	1	0*	8	0*	100
OP1 pin 3	OC	54.7	5	1.50	2.74	80.5	100
OP2 pin 1-2	SC	0	1	0*	8	0*	100
OP2 pin 3-4	SC	54.7	5	1.50	2.74	80.5	100
OP2 pin 1	OC	0	1	0*	8	0*	100
OP2 pin 3	OC	54.7	5	1.50	2.74	80.5	100
R1	SC	0	1	0**	8	0**	100
Supplementary Information:							
Abbreviation: SC= short circuit, OC= open circuit.							
* Unit shutdown immediately recoverable, no hazard.							
** F1 opened immediately, Q3 damaged, no hazard.							

T.2, T.3, T.4, T.5	TABLE: Steady force test						P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation	
Enclosure top, closed to transformer (T.4, T.5)	1)	1)	--	100/250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Enclosure side (T.4, T.5)	1)	1)	--	100/250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	

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Clause	Requirement + Test			Result - Remark		Verdict
Enclosure bottom, closed to transformer (T.4, T.5)	1)	1)	--	100/250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Internal components near the gap between primary and secondary (T.2)	--	--	--	10	5	No insulation breakdown. No reduction the clearances and creepage distances
Supplementary information:						
1). See appended table 4.1.2. Each source of enclosure in table 4.1.2 was applied and passed the relevant tests.						

T.6, T.9	TABLE: Impact test				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
Enclosure top, front, side, closed to transformer	1)	1)	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Supplementary information:					
1). See appended table 4.1.2. Each source of enclosure in table 4.1.2 was applied and passed the relevant tests.					

T.7	TABLE: Drop test				P
Location/Part		Material	Thickness (mm)	Height (mm)	Observation
Three sides of enclosure		1)	1)	1000	After the drop test, enclosure remained intact, no cracking/opening developed in the enclosure joint. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Supplementary information:					
1). See appended table 4.1.2.					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Each source of enclosure in table 4.1.2 was applied and passed the relevant tests.			

T.8	TABLE: Stress relief test					P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Enclosure	1)	1)	111	7	Enclosure remained intact, no cracking/opening developed in the enclosure joint. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Insulation barrier on transformer	1)	1)	127	7	No insulation breakdown.	
Supplementary information:						
1). See appended table 4.1.2.						
Each source in table 4.1.2 was applied and passed the relevant tests.						

X	TABLE: Alternative method for determining minimum clearances distances			N/A
Clearance distanced between:	Peak of working voltage (V)	Required cl (mm)	Measured cl (mm)	
Supplementary information:				

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
4.1.2	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
Enclosure	SABIC INNOVATIVE PLASTICS US L L C	940(f1)(gg*)	PC, V-0, 120°C, min. 1.5mm thickness	UL 94	UL E121562
(Alternative)	SILVER AGE ENGINEERING PLASTICS (DONGGUAN) CO LTD	PC2330	PC, V-0, 115°C, min. 1.5mm thickness	UL 94	UL E225348
(Alternative)	KINGFA SCI & TECH (USA), INC	JH860 (ddd) (f1)	PC, V-0, 120°C, min. thickness 1.5mm	UL 94	UL E484599
AC Inlet (CN1)	LECI Electronics Co., Ltd	DB-14	10A, 250Vac, Standard sheet C14, 70°C	IEC/EN/UL 60320-1	VDE 40032137 UL E302229
(Alternative)	LECI Electronics Co., Ltd	DB-6	2.5A, 250Vac, Standard sheet C6, 70°C	IEC/EN/UL 60320-1	VDE 40032465 UL E302229
(Alternative)	DONGGUAN HUACONN ELECTRONICS CO LTD	HC-99	10A, 250Vac, Standard sheet C14, 70°C	IEC/EN/UL 60320-1	VDE 40032734 UL E340249
(Alternative)	DONGGUAN HUACONN ELECTRONICS CO LTD	HC-66	2.5A, 250Vac, Standard sheet C6, 70°C	IEC/EN/UL 60320-1	VDE 40032581 UL E340249
(Alternative)	Zhe Jiang Bei Er Jia Electronic Co., Ltd.	ST-A01-003J	10A, 250Vac, Standard sheet C14, 70°C	IEC/EN/UL 60320-1	ENEC-03639- M1 UL E225980
(Alternative)	Zhe Jiang Bei Er Jia Electronic Co., Ltd.	ST-A04-002	2.5A, 250Vac, Standard sheet C6, 70°C	IEC/EN/UL 60320-1	ENEC-03721- M1 UL E225980
Protective bonding wire	SHENZHEN FUJIA APPLIANCE CO LTD	1672	Green and Yellow, VW-1, Min.18AWG, 105°C, 300V	UL 758	UL E354605
(Alternative)	Interchangeable	Interchangeable	Green and Yellow, VW-1, min. 18AWG, min. 105°C, min. 300V	UL 758	UL
Output cord	Interchangeable	Interchangeable	VW-1, 300V, Min. 80°C, min. 24AWG	UL 758	UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Strain Relief	Interchangeable	Interchangeable	Min. V-1, Integral to cord	UL 94, UL 746C	UL
Plastic of output connector	Interchangeable	Interchangeable	V-1 or better	UL 94, UL 746C	UL
PCB	Interchangeable	Interchangeable	V-1 or better, 130°C	UL 796	UL
Fuse (F1)	XC Electronics (Shen Zhen) Corp. Ltd.	3T	T3.15A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248	VDE 40019614 UL E249609
(Alternative)	Shenzhen Lanson Electronics Co., Ltd.	3K Series	T3.15A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248	VDE 40010682 UL E221465
(Alternative)	Honghu Bluelight Electronic Co., Ltd.	L3T	T3.15A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248	TÜV Rheinland: R 50551762 UL E324232
Thermistor (RT1) (optional)	Interchangeable	Interchangeable	Min. 3.0A, Min. 1.0Ω, at 25°C	UL 1434	UL
Heat shrinkable tube used on F1, LF2	Interchangeable	Interchangeable	VW-1, 600Vac, 125°C	UL 224	UL
Line filter (LF1) (Optional)	Interchangeable	Interchangeable	Min.0.7mH, 130°C	IEC/EN 62368-1	Tested with appliance
- Magnet wire	Interchangeable	Interchangeable	130°C	UL 1446	UL
- Triple insulated wire	Furukawa Electric Co.,Ltd.	TEX-E	130°C	IEC/EN 62368-1 UL 2353	VDE 006735 UL E206440
(Alternative)	HUIZHOU HUAYING ELECTRONIC TECHNOLOGY CO LTD	MIW-B	130°C	IEC/EN 62368-1 UL 2353	VDE 40047994 UL E470559
(Alternative)	SHENZHEN KAIZHONG HEDONG NEW MATERIALS CO LTD	TIW-B	130°C	IEC/EN 62368-1 UL 2353	VDE 40038861 UL E357240
(Alternative)	Shanghai Lucky Trade Co Ltd	TIW-B	Min.130°C	IEC/EN 62368-1 UL 2353	VDE 40023686 UL E305883
(Alternative)	SHENZHEN JIUDING NEW MATERIAL CO., LTD.	DTFW-B, DTFW-F	Min. 130°C	IEC/EN 62368-1 UL 2353	VDE 40037495 UL E357999

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
- Bobbin (optional)	Sumitomo Bakelite Co. Ltd	PM-9820, PM-9630, PM-9823	Phenolic, V-0, 150°C, Min. thickness 0.51 mm	UL 94	UL E41429
(Alternative)	Chang Chun Plastics	T-378J, T378J, T375J(G5)(G6), T375HF	PMC, V-0, 150°C, Min. thickness 0.6mm	UL 94	UL E59481
Line filter (LF2) (Optional)	Shenzhen Fujia Appliance Co., Ltd.	T16*12*8	130°C, Min. 12mH	IEC/EN 62368-1	Tested with appliance
- Bobbin	Sumitomo Bakelite Co. Ltd	PM-9820, PM-9630, PM-9823	Phenolic, V-0, 150°C, Min. thickness 0.9 mm	UL 94	UL E41429
(Alternative)	Chang Chun Plastics	4130	PBT, V-0, 140 °C, Min. thickness 0.9 mm	UL94	UL E59481
(Alternative)	Chang Chun Plastics	T-378J, T378J, T375J(G5)(G6), T375HF	PMC, V-0, 150°C, Min. thickness 0.6mm	UL 94	UL E59481
- Magnet wire	Interchangeable	Interchangeable	130°C	UL 1446	UL
- Insulation tape	3M Corp	1350F-1(b), 1350-1(c)	130°C	UL 510A	UL E17385
(Alternative)	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	CT*(c)(g), PZ*(b)	130°C	UL 510A	UL E165111
(Alternative)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX Series	130°C	UL 510	UL E246820
(Alternative)	SHEN ZHEN XINHUAHUI ELECTRONIC MATERIALS CO LTD	HMT, HWT	130°C	UL 510	UL E328315
(Alternative)	DONGGUAN SHIN YAHUA ELECTRONIC MATERIAL CO LTD	CT* (b)(g), CT* (c)(g), PZ* (b), WF* (c)(h)	130°C	UL 510	UL E324093
-PCB (optional)	Interchangeable	Interchangeable	V-1 or better, 130°C	UL 796	UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Bridge diode (BD1)	Interchangeable	Interchangeable	Min. 2.0A, min. 600V	IEC/EN 62368-1	Tested with appliance
Electrolytic capacitor (C6)	Interchangeable	Interchangeable	68-200µF, min. 400Vdc, min. 105°C	IEC/EN 62368-1	Tested with appliance
Transistor (Q3)	Interchangeable	Interchangeable	Min. 7A, min. 600V	IEC/EN 62368-1	Tested with appliance
Current sense resistor (R1)	Interchangeable	Interchangeable	Min. 0.47 ohm, Min. 1/2 W	IEC/EN 62368-1	Tested with appliance
Current sense resistor (R5) (output power< 36W not provided, ≥36W optional)	Interchangeable	Interchangeable	Min. 0.47 ohm, Min. 1/4 W	IEC/EN 62368-1	Tested with appliance
Current sense resistor (R29) (output power< 36W not provided, ≥36W optional)	Interchangeable	Interchangeable	Min. 0.47 ohm, Min. 1/4 W	IEC/EN 62368-1	Tested with appliance
Bleeder resistor (R2, R3, R37, R38)	Interchangeable	Interchangeable	Each max. 1.8M ohm, min. 1/4 W	IEC/EN 62368-1	Tested with appliance
X-Capacitor (CX1) (optional)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	MPX	Max.0.47µF± 10%, min. 250Vac, 110°C, X2 type	IEC/EN/UL 60384-14	VDE 40034679 UL E208107
(Alternative)	DONGGUAN CITY DAFU ELECTRONICS CO LTD	MPX	Max.0.47µF± 10%, min. 250Vac, 110°C, X2 type	IEC/EN/UL 60384-14	VDE 40044620 UL E465278
(Alternative)	Dongguan Cigu Electronic Technology Co., Ltd	MPX	Max.0.47µF± 10%, min. 250Vac, 110°C, X2 type	IEC/EN/UL 60384-14	VDE 40050231 UL E481614
(Alternative)	XIANGTAI ELECTRONIC (SHENZHEN) CO LTD	MPX/MKP	Max.0.47µF± 10%, min. 250Vac, 110°C, X2 type	IEC/EN/UL 60384-14	VDE 40036065 UL E357475

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Y-Capacitor (CY1, CY2) (when CY1&CY2 in series use) (Bridging Pri. And Sec. circuit) (optional)	Shantou High-New Technology Development Zone Songtian Enterprise Co Ltd	CD series (for VDE) CD (for UL)	Each Max. 3300pF; min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40025754 UL E208107
(Alternative)	Shantou High-New Technology Development Zone Songtian Enterprise Co Ltd	CE	Each Max. 3300pF; min. 250Vac, 125°C, Y2 type	IEC/EN/UL 60384-14	VDE 40025748, UL E208107
(Alternative)	DONGGUAN CITY DAFU ELECTRONICS CO LTD	CT7 Y1 Series, (for VDE) CT7 Y1(for UL)	Each Max. 3300pF; min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40041523, UL E465278
(Alternative)	DONGGUAN CITY DAFU ELECTRONICS CO LTD	CT7 Y2	Each Max. 3300pF; min. 250Vac, 125°C, Y2 type	IEC/EN/UL 60384-14	VDE 40041521, UL E465278
(Alternative)	Dongguan Cigu Electronic	CD series, (for VDE) CD (for UL)	Each Max. 3300pF; min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40043434, UL E481614
(Alternative)	Dongguan Cigu Electronic	CE	Each Max. 3300pF; min. 250Vac, 125°C, Y2 type	IEC/EN/UL 60384-14	VDE 40043430, UL E481614
(Alternative)	XIANGTAI ELECTRONIC (SHENZHEN) CO LTD	YO-series, (for VDE) YOF(for UL)	Each Max. 3300pF; min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40036880 UL E319473
(Alternative)	XIANGTAI ELECTRONIC (SHENZHEN) CO LTD	YT	Each Max. 3300pF; min. 250Vac, 125°C, Y2 type	IEC/EN/UL 60384-14	VDE 40044114, UL E319473
Y-Capacitor (CY1) (when CY2 not use) (Bridging Pri. And Sec. circuit) (optional)	Shantou High-New Technology Development Zone Songtian Enterprise Co Ltd	CD series (for VDE) CD (for UL)	Max. 2200pF; min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40025754 UL E208107

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	DONGGUAN CITY DAFU ELECTRONICS CO LTD	CT7 Y1 Series, (for VDE) CT7 Y1(for UL)	Max. 2200pF; min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40041523, UL E465278
(Alternative)	Dongguan Cigu Electronic	CD series, (for VDE) CD (for UL)	Max. 2200pF; min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40043434, UL E481614
(Alternative)	XIANGTAI ELECTRONIC (SHENZHEN) CO LTD	YO-series, (for VDE) YOF(for UL)	Max. 2200pF; min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40036880 UL E319473
Y-Capacitor (CY3, CY4) (optional)	Shantou High-New Technology Development Zone Songtian Enterprise Co Ltd	CD series (for VDE) CD (for UL)	Each Max. 2200pF; min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40025754 UL E208107
(Alternative)	Shantou High-New Technology Development Zone Songtian Enterprise Co Ltd	CE	Each Max. 2200pF; min. 250Vac, 125°C, Y2 type	IEC/EN/UL 60384-14	VDE 40025748, UL E208107
(Alternative)	DONGGUAN CITY DAFU ELECTRONICS CO LTD	CT7 Y1 Series, (for VDE) CT7 Y1(for UL)	Each Max. 2200pF; min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40041523, UL E465278
(Alternative)	DONGGUAN CITY DAFU ELECTRONICS CO LTD	CT7 Y2	Each Max. 2200pF; min. 250Vac, 125°C, Y2 type	IEC/EN/UL 60384-14	VDE 40041521, UL E465278
(Alternative)	Dongguan Cigu Electronic	CD series, (for VDE) CD (for UL)	Each Max. 2200pF; min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40043434, UL E481614
(Alternative)	Dongguan Cigu Electronic	CE	Each Max. 2200pF; min. 250Vac, 125°C, Y2 type	IEC/EN/UL 60384-14	VDE 40043430, UL E481614
(Alternative)	XIANGTAI ELECTRONIC (SHENZHEN) CO LTD	YO-series, (for VDE) YOF(for UL)	Each Max. 2200pF; min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40036880 UL E319473
(Alternative)	XIANGTAI ELECTRONIC (SHENZHEN) CO LTD	YT	Each Max. 2200pF; min. 250Vac, 125°C, Y2 type	IEC/EN/UL 60384-14	VDE 40044114, UL E319473

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Varistor (RV1) (Optional)	Shantou High-New Technology Development Zone Songtian Enterprise Co Ltd	10D621K	Min. 300V ac, Min. 105°C, (tested for 6KV/3KA combination pulse), coating V-0	IEC/EN 61051-1 UL 1449	VDE 40023049, UL E330837
(Alternative)	Cerglass MFG Inc	10D621K	Min. 300V ac, Min. 105°C, (tested for 6KV/3KA combination pulse), coating V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2 UL1449	VDE 40028836, UL E317616
(Alternative)	DONGGUAN CITY DAFU ELECTRONICS CO LTD	10D621K (for VDE) NDF10D621K (for UL)	Min. 300V ac, Min. 105°C, (tested for 6KV/3KA combination pulse), coating V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2 UL1449	VDE 40050909, UL E502211
Opto-coupler (OP1, OP2) (OP2 optional)	Everlight Electronics Co Ltd	EL1018, EL1019	Ext.Cr&Cl: >8.0 mm. 110°C	IEC/EN 60747- 5-5, UL 1577	VDE 40028391 UL E214129
(Alternative)	CRM ICBG (Wuxi) Co., Ltd.	1018, 1019, HK1018, HK1019	Ext.Cr&Cl: >8.0 mm. 110°C	IEC/EN 60747- 5-5, UL 1577	VDE 40042139 UL E465130
(Alternative)	CT Micro International Corporation (for VDE) CT Microelectronics Far East Ltd (for UL)	CT1018, CT1019	Ext.Cr&Cl: >8.0 mm. 110°C	IEC/EN 60747- 5-5, UL 1577	VDE 40039590 UL E364000
(Alternative)	SHENZHEN ORIENT COMPONENTS CO LTD	OR1018, OR1019	Ext.Cr&Cl: >8.0 mm. 110°C	IEC/EN 60747- 5-5, UL 1577	UL E323844 VDE 40029733
Insulation cover on transformer	E I DUPONT DE NEMOURS & CO INC	FR530(I)(+)(f1), FR530L(I)(+)(f1)	PET, V-0, 155 °C. min. thickness 0.4mm	UL 94	UL E41938
Glue	Interchangeable	Interchangeable	Min. V-2	UL 94, UL 746C	UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Transformer (T2)	Shenzhen Fujia Appliance Co., Ltd.	2017-T1 (for output voltage 5.0-9.0V) 2017-T2 (for output voltage 9.5-19.5V) 2017-T3 (for output voltage 20.0-33.0V) 2017-T4 (for output voltage 36.0-54.0V)	Class B	Applicable part of IEC/EN 62368-1 and according to IEC 60085	Tested with appliance
- Bobbin	Sumitomo Bakelite Co. Ltd	PM-9820, PM-9630, PM-9823	Phenolic, V-0, 150°C, min. thickness: 0.51mm.	UL 94	UL E41429
(Alternative)	Chang Chun Plastics	T-378J, T378J, T375J(G5)(G6), T375HF	PMC, V-0, 150°C, Min. thickness 0.6mm	UL 94	UL E59481
(Alternative)	Chang Chun Plastics	4130	PBT, V-0, 140°C, Min. thickness 0.74 mm	UL 94	UL E59481
- Secondary Triple insulated wire	Furukawa Electric Co., Ltd.	TEX-E	130°C	IEC/EN 62368-1 UL 2353	VDE 006735, UL E206440
(Alternative)	HUIZHOU HUAYING ELECTRONIC TECHNOLOGY CO LTD	MIW-B	130°C	IEC/EN 62368-1 UL 2353	VDE 40047994 UL E470559
(Alternative)	SHENZHEN KAIZHONG HEDONG NEW MATERIALS CO LTD	TIW-B	130°C	IEC/EN 62368-1 UL 2353	VDE 40038861 UL E357240
(Alternative)	Shanghai Lucky Trade Co Ltd	TIW-B	Min. 130°C	IEC/EN 62368-1 UL 2353	VDE 40023686 UL E305883
(Alternative)	SHENZHEN JIUDING NEW MATERIAL CO., LTD.	DTFW-B, DTFW-F	Min. 130°C	IEC/EN 62368-1 UL 2353	VDE 40037495, UL E357999
- Magnet wire	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Insulation tape	3M Company Electrical Markets Div (EMD)	1350F-1(b), 1350-1(c)	130°C	UL 510A	UL E17385

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
(Alternative)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT*(b)(g), PZ*(b)	130°C	UL 510A	UL E165111
(Alternative)	P LEO & CO LTD	1P801, 1P802	130°C	UL 510A	UL E126174
(Alternative)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX Series	130°C	UL 510	UL E246820
(Alternative)	SHEN ZHEN XINHUAHUI ELECTRONIC MATERIALS CO LTD	HMT, HWT	130°C	UL 510	UL E328315
(Alternative)	DONGGUAN SHIN YAHUA ELECTRONIC MATERIAL CO LTD	CT* (b)(g) CT* (c)(g) PZ* (b) WF* (c)(h)	130°C	UL 510	UL E324093
-Tube	Great Holding Industrial Co Ltd	TFL, TFS, TFT	200°C	UL 224	UL E156256
(Alternative)	Zeus Industrial Products Inc	TFE-LW-150, TFE-TW-300, TFE-SW-600	200°C	UL 224	UL E64007
(Alternative)	SHENGZHENG HANGXUAN S&T CO LTD	XH-TFS	200°C	UL 224	UL E361862
(Alternative)	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L, CB-TT-S, CB-TT-T, CB-HFT, CB-HFT(XY), CYG-MT	Min. 125°C	UL 224	UL E180908
-Varnish	Showa Denko Materials Co., Ltd.	WP-2952F-2G	130°C	UL 1446	UL E72979
(Alternative)	ELANTAS PDG, Inc.	468-2(d)	Min. 130°C	UL 1446	UL E75225
(Alternative)	LIANGSHENG SHENZHEN NEW MATERIAL TECHNOLOGY.C O., LTD	MZ-850K	155°C	UL 1446	UL E514406
(Alternative)	HANG CHEUNG COATINGS (HUIYANG) LTD	8562*	155°C	UL 1446	UL E200154

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Transformer (T2) (Alternative)	Dongguan Xingshangcheng Electronics Co Ltd	2017-T1 (for output voltage 5.0-9.0V) 2017-T2 (for output voltage 9.5-19.5V) 2017-T3 (for output voltage 20.0-33.0V) 2017-T4 (for output voltage 36.0-54.0V)	Class B	Applicable part of IEC/EN 62368-1 and according to IEC 60085	Tested with appliance
- Bobbin	Sumitomo Bakelite Co. Ltd	PM-9820, PM-9630, PM-9850 PM-9750	Phenolic, V-0, 150°C, min. thickness: 0.51mm.	UL 94	UL E41429
(Alternative)	Chang Chun Plastics	T200NA T200HF T375J(G5)(G6), T375HF	PMC, V-0, 150°C, Min. thickness 0.6mm	UL 94	UL E59481
(Alternative)	Chang Chun Plastics	4130	PBT, V-0, 140°C, Min. thickness 0.74 mm	UL 94	UL E59481
- Secondary Triple insulated wire	YOUNG CHANG SILICONE CO LTD	STW-B	Min.130°C	IEC/EN 62368-1 UL 2353	VDE 40013359 UL E242198
(Alternative)	SHENZHEN KAIZHONG HEDONG NEW MATERIALS CO LTD	TIW-B	Min.130°C	IEC/EN 62368-1 UL 2353	VDE 40038861 UL E357240
(Alternative)	Guangzhou Wanbao Electronic Material Co Ltd	DTM-B	Min.130°C	IEC/EN 62368-1 UL 2353	VDE 40044801 UL E323485
- Magnet wire	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Insulation tape	3M Company Electrical Markets Div (EMD)	1350F-1(b) 1350F-2(c) 44	130°C	UL 510	UL E17385
(Alternative)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ* (b), CT * (b)(g), WF*(c)(h)	130°C	UL 510	UL E165111

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX Series	130°C	UL 510	UL E246820
-Varnish	Showa Denko Materials Co., Ltd.	WP-2952F-2G	130°C	UL 1446	UL E72979
(Alternative)	ELANTAS PDG, Inc.	468-2(d) V1630 V1630FS	Min. 130°C	UL 1446	UL E75225
(Alternative)	JOHN C DOLPH CO	BC-346A, BC-359	130°C	UL 1446	UL E317427
- Tube	GREAT HOLDING INDUSTRIAL CO LTD	TFL, TFS, TFT	200°C	UL 224	UL E156256
(Alternative)	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L, CB-TT-S, CB-TT-T, CB-HFT, CB-HFT(XY), CYG-MT	Min. 125°C	UL 224	UL E180908
Transformer (T2) (Alternative)	SHENZHEN LANYIN TECHNOLOGY CO LTD	2017-T1 (for output voltage 5.0-9.0V) 2017-T2 (for output voltage 9.5-19.5V) 2017-T3 (for output voltage 20.0-33.0V) 2017-T4 (for output voltage 36.0-54.0V)	Class B	Applicable part of IEC/EN 62368-1 and according to IEC 60085	Tested with appliance
- Bobbin	Sumitomo Bakelite Co. Ltd	PM-9820, PM-9630, PM-9823	Phenolic, V-0, 150°C, min. thickness: 0.51mm.	UL 94	UL E41429
(Alternative)	Chang Chun Plastics	T-378J, T378J, T375J(G5)(G6), T375HF	PMC, V-0, 150°C, Min. thickness 0.6mm	UL 94	UL E59481
(Alternative)	Chang Chun Plastics	4130	PBT, V-0, 140°C, Min. thickness 0.74 mm	UL 94	UL E59481
- Secondary Triple insulated wire	Furukawa Electric Co., Ltd.	TEX-E	130°C	IEC/EN 62368-1 UL 2353	VDE 006735, UL E206440

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
(Alternative)	HUIZHOU HUAYING ELECTRONIC TECHNOLOGY CO LTD	MIW-B	130°C	IEC/EN 62368-1 UL 2353	VDE 40047994 UL E470559
(Alternative)	SHENZHEN KAIZHONG HEDONG NEW MATERIALS CO LTD	TIW-B	130°C	IEC/EN 62368-1 UL 2353	VDE 40038861 UL E357240
(Alternative)	Shanghai Lucky Trade Co Ltd	TIW-B	Min. 130°C	IEC/EN 62368-1 UL 2353	VDE 40023686 UL E305883
(Alternative)	SHENZHEN JIUDING NEW MATERIAL CO., LTD.	DTFW-B, DTFW-F	Min. 130°C	IEC/EN 62368-1 UL 2353	VDE 40037495 UL E357999
- Magnet wire	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Insulation tape	3M Company Electrical Markets Div (EMD)	1350F-1(b)	130°C	UL 510	UL E17385
(Alternative)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT*(b)(g), PZ*(b)	130°C	UL 510	UL E165111
(Alternative)	P LEO & CO LTD	1P801, 1P802	130°C	UL 510	UL E126174
(Alternative)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX Series	130°C	UL 510	UL E246820
(Alternative)	SHEN ZHEN XINHUAHUI ELECTRONIC MATERIALS CO LTD	HMT, HWT	130°C	UL 510	UL E328315
(Alternative)	DONGGUAN SHIN YAHUA ELECTRONIC MATERIAL CO LTD	CT* (b)(g) CT* (c)(g) PZ* (b) WF* (c)(h)	130°C	UL 510	UL E324093
-Varnish	Showa Denko Materials Co., Ltd.	WP-2952F-2G	130°C	UL 1446	UL E72979
(Alternative)	ELANTAS PDG, Inc.	468-2(d)	Min. 130°C	UL 1446	UL E75225

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
(Alternative)	LIANGSHENG SHENZHEN NEW MATERIAL TECHNOLOGY.C O., LTD	MZ-850K	155°C	UL 1446	UL E514406
(Alternative)	HANG CHEUNG COATINGS (HUIYANG) LTD	8562*	155°C	UL 1446	UL E200154
- Tube	GREAT HOLDING INDUSTRIAL CO LTD	TFL, TFS, TFT	200°C	UL 224	UL E156256
(Alternative)	ZEUS INDUSTRIAL PRODUCTS INC	TFE-LW-150, TFE-TW-300, TFE-SW-600	200°C	UL 224	UL E64007
(Alternative)	SHENGZHENG HANGXUAN S&T CO LTD	XH-TFS	200°C	UL 224	UL E361862
(Alternative)	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L, CB-TT-S, CB-TT-T, CB-HFT, CB-HFT(XY), CYG-MT	Min. 125°C	UL 224	UL E180908
Supplementary information: License available upon request. Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

IEC62368_1E- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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 IEC 62368-1:2020+A11:2020		
Attachment Form No.: EU_GD_IEC62368_1E		
Attachment Originator: UL(Demko)		
Master Attachment: 2021-02-04		
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	CENELEC COMMON MODIFICATIONS (EN)	
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed "Z".	P
	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
1	Modification to Clause 3.	
3.3.19	Sound exposure <i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>	N/A


IEC62368_1E- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.1	momentary exposure level, MEL metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2. Note 1 to entry: MEL is measured as A-weighted levels in dB. Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.		N/A
3.3.19.3	sound exposure, E A-weighted sound pressure (p) squared and integrated over a stated period of time, T Note 1 to entry: The SI unit is $\text{Pa}^2 \text{ s}$. $E = \int_0^T p(t)^2 dt$		N/A
3.3.19.4	sound exposure level, SEL logarithmic measure of sound exposure relative to a reference value, E_0 , typically the 1 kHz threshold of hearing in humans. Note 1 to entry: SEL is measured as A-weighted levels in dB. $SEL = 10 \lg \left(\frac{E}{E_0} \right) \text{ dB}$ Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.		N/A
3.3.19.5	digital signal level relative to full scale, dBFS levels reported in dBFS are always r.m.s. Full scale level, 0 dBFS, is the level of a dc-free 997-Hz sine wave whose undithered positive peak value is positive digital full scale, leaving the code corresponding to negative digital full scale unused Note 1 to entry: It is invalid to use dBFS for non-r.m.s. levels. Because the definition of full scale is based on a sine wave, the level of signals with a crest factor lower than that of a sine wave may exceed 0 dBFS. In particular, square wave signals may reach +3,01 dBFS.		N/A
2	Modification to Clause 10		
10.6	Safeguards against acoustic energy sources Replace 10.6 of IEC 62368-1 with the following:		N/A

IEC62368_1E- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.1.1	<p>Introduction</p> <p>Safeguard requirements for protection against long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment intended for use by an ordinary person, that:</p> <ul style="list-style-type: none"> – is designed to allow the user to listen to audio or audiovisual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). <p>EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment.</p> <p>Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3.</p> <p>NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360.</p> <p>NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible.</p> <p>Listening devices sold separately shall comply with the requirements of 10.6.6.</p> <p>These requirements are valid for music or video mode only.</p> <p>The requirements do not apply to:</p> <ul style="list-style-type: none"> – professional equipment; <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p> <ul style="list-style-type: none"> – hearing aid equipment and other devices for assistive listening; 	No such part in this equipment	N/A

IEC62368_1E- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>– the following type of analogue personal music players:</p> <ul style="list-style-type: none"> • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>– a player while connected to an external amplifier that does not allow the user to walk around while in use.</p> <p>For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply.</p> <p>The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>		
10.6.1.2	<p>Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</p> <p>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).</p> <p>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.</p>	Added. The equipment is a low power POWER SUPPLY, it does incorporate only non-intentional radiators, but does not contain radio transmitters; the typical usage, installation and physical characteristics make the equipment inherently compliant with all applicable EMF exposure levels (EN 62479:2010 clause 4.1 Route A).	N/A
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A
10.6.2.1	<p>General</p> <p>This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3.</p> <p>For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period.</p>	No such part in this equipment	N/A

IEC62368_1E- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, T becomes the duration of the song.</p> <p>NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit.</p> <p>For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.</p>		
10.6.2.2	<p>RS1 limits (to be superseded, see 10.6.3.2)</p> <p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 85 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1. – The RS1 limits will be updated for all devices as per 10.6.3.2. 		N/A
10.6.2.3	<p>RS2 limits (to be superseded, see 10.6.3.3)</p> <p>RS2 is a class 2 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed “programme simulation noise” as described in EN 50332-1. 		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed “programme simulation noise” as described in EN 50332-1.		
10.6.2.4	RS3 limits RS3 is a class 3 acoustic energy source that exceeds RS2 limits.		N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	General Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.		N/A
10.6.3.2	RS1 limits (new) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.		N/A
10.6.3.3	RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed “programme		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	simulation noise" described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1.		
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	Measurement methods All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.		N/A
10.6.4.2	Protection of persons Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3. NOTE 1 Volume control is not considered a safeguard . Between RS2 and an ordinary person , the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except that the instructional safeguard shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the instructional safeguard may be given through the equipment display during use. The elements of the instructional safeguard shall be as follows: – element 1a: the symbol  , IEC 60417-6044 (2011-01) – element 2: "High sound pressure" or equivalent wording – element 3: "Hearing damage risk" or equivalent wording – element 4: "Do not listen at high volume levels for long periods." or equivalent wording An equipment safeguard shall prevent exposure of an ordinary person to an RS2 source without intentional physical action from the ordinary		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>person and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off.</p> <p>The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time.</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off.</p> <p>A skilled person shall not be unintentionally exposed to RS3.</p>		
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	<p>General requirements</p> <p>Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause.</p> <p>The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration.</p> <p>The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.</p>		N/A
10.6.5.2	Dose-based warning and requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	<p>When a dose of 100 % <i>CSD</i> is reached, and at least at every 100 % further increase of <i>CSD</i>, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1.</p> <p>The warning shall at least clearly indicate that listening above 100 % <i>CSD</i> leads to the risk of hearing damage or loss.</p>		
10.6.5.3	<p>Exposure-based requirements</p> <p>With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at.</p> <p>The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3.</p> <p>The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster.</p> <p>Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface.</p> <p>NOTE In case the source is known not to be music (or test signal), the EL may be disabled.</p>		N/A

10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	<p>Corded listening devices with analogue input</p> <p>With 94 dB L_{Aeq} acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed "programme simulation</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	noise" as described in EN 50332-1 shall be ≥ 75 mV. NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.		
10.6.6.2	Corded listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the $L_{Aeq,\tau}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.3	Cordless listening devices In cordless mode, – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq,\tau}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.4	Measurement method <i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i>		N/A
3	Modification to the whole document		

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Clause	Requirement + Test			Result - Remark		Verdict	
	Delete all the “country” notes in the reference document according to the following list:					N/A	
	0.2.1	Note 1 and 2	1	Note 4 and 5	3.3.8.1		Note 2
	3.3.8.3	Note 1	4.1.15	Note	4.7.3		Note 1 and 2
	5.2.2.2	Note	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4		Note 1 and 3
	5.4.2.3.2.4 Table 13	Note 2	5.4.2.5	Note 2	5.4.5.1		Note
	5.4.10.2.1	Note	5.4.10.2.2	Note	5.4.10.2.3		Note
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1		Note 2 and 3 and 4
	5.6.8	Note 2	5.7.6	Note	5.7.7.1		Note 1 and Note 2
	8.5.4.2.3	Note	10.2.1 Table 39	Note 3 and 4 and 5	10.5.3		Note 2
	10.6.1	Note 3	F.3.3.6	Note 3	Y.4.1		Note
	Y.4.5	Note					
4	Modification to Clause 1					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	
5	Modification to 4.Z1					N/A	

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Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	<p>Add the following new subclause after 4.9:</p> <p>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):</p> <p>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;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		N/A
6	Modification to 5.4.2.3.2.4		N/A
5.4.2.3.2.4	<p>Add the following to the end of this subclause:</p> <p>The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.</p>	No external circuits.	N/A
7	Modification to 10.2.1		N/A
10.2.1	<p>Add the following to ^{c)} and ^{d)} in table 39:</p> <p>For additional requirements, see 10.5.1.</p>	No such radiation from the equipment.	N/A
8	Modification to 10.5.1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	<p>Add the following after the first paragraph:</p> <p>For RS 1 compliance is checked by measurement under the following conditions:</p> <p>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 pre-sets 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.</p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p>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.</p> <p>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.</p> <p>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>		N/A
9	Modification to G.7.1		N/A
G.7.1	<p>Add the following note:</p> <p>NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>		N/A
10	Modification to Bibliography		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Add the following notes for the standards indicated:		P
	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.		
11	ADDITION OF ANNEXES		P
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 jordnet stikkontakt" In Sweden : "Apparaten skall anslutas till jordat uttag"		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>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</p>		N/A
5.2.2.2	<p>Denmark</p> <p>After the 2nd paragraph add the following:</p> <p>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.</p>	No high touch current.	N/A
5.4.11.1 and Annex G	<p>Finland and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>For separation of the telecommunication network from earth the following is applicable:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>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</p> <ul style="list-style-type: none"> • 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), <p>and</p> <ul style="list-style-type: none"> • is subject to routine testing for electric strength 	No TNV circuits.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>during manufacturing, using a test voltage of 1,5 kV.</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; the additional testing shall be performed on all the test specimens as described in EN 60384-14; <p>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.</p>		
5.5.2.1	<p>Norway</p> <p>After the 3rd paragraph the following is added:</p> <p>Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>		N/A
5.5.6	<p>Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>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.</p>	No such resistors.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.1	<p>Denmark</p> <p>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.</p>		N/A
5.6.4.2.1	<p>Ireland and United Kingdom</p> <p>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.</p>		N/A
5.6.4.2.1	<p>France</p> <p>After the indent for pluggable equipment type A, the following is added: – in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A.</p>		N/A
5.6.5.1	<p>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 mm² to 1,5 mm² in cross-sectional area.</p>		N/A
5.6.8	<p>Norway</p> <p>To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as class I equipment. See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.</p>		N/A
5.7.6	<p>Denmark</p> <p>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.</p>	No high protective conductor current.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	<p>Denmark</p> <p>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 .</p>		N/A
5.7.7.1	<p>Norway and Sweden</p> <p>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.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>“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)”</p> <p>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.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkøp utstyr – og er tilkøp et koaksialbasert kabel-TV nett, kan forårsake brannfare.</p>	Not such system.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet."</p> <p>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."</p>		
8.5.4.2.3	<p>United Kingdom</p> <p>Add the following after the 2nd dash bullet in 3rd paragraph:</p> <p>An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.</p>		N/A
B.3.1 and B.4	<p>Ireland and United Kingdom</p> <p>The following is applicable:</p> <p>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</p>		N/A
G.4.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>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.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a polyphase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>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.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>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</p> <p><i>Justification:</i> Heavy Current Regulations, Section 6c</p>		
G.4.2	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.</p>		N/A
G.7.1	<p>United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>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.</p> <p>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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)		
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	No CRT within the equipment.	N/A

IEC62368_1E- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)			
	Type of flexible cord	Code designations		N/A
		IEC	CENELEC	
	PVC insulated cords			
	Flat twin tinsel cord	60227 IEC 41	H03VH-Y	
	Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F	
	Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F	
	Rubber insulated cords			
	Braided cord	60245 IEC 51	H03RT-F	
	Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F	
	Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F	
	Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F	
	Cords having high flexibility			
	Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H	
	Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H	
	Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H	
	Cords insulated and sheathed with halogen-free thermoplastic compounds			
Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F		
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 U.S.A. AND CANADA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)	
Differences according to	CSA/UL 62368-1:2019
TRF template used	IECEE OD-2020-F3, Ed. 1.1
Attachment Form No.	US_CA_ND_IEC62368_1E
Attachment Originator	UL(US)
Master Attachment	Dated 2022-03-04
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IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1 (1DV.1) (1.3)	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part 1, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.	In accordance with the National Electrical Code (NEC) and the Canadian Electrical Code (CEC) part 1 CAN/CSA C22.1, ANSI/NFPA 70, and unless marked or otherwise identified, the Standard for Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	P
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.		N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.		N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in either UL 2391 or CSA/UL 60950-21. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits ($\leq 200V$ per conductor to earth).		N/A
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.	Considered.	P
4.1 (4.1.17)	<i>For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.</i>		N/A
	<i>For lengths 3.05 m or less, external interconnecting cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.</i>	Output lead wire not exceed 3.05m	P
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.		N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.	No such batteries	N/A
5.4.2.3.2 (5.4.2.3.2.1)	<i>Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.</i>		N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943, and CAN/CSA C22.2 No.144.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.		N/A
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No TNV circuits within the equipment.	N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.	No such parts.	N/A
Annex F (F.3.3.9)	Output terminals provided for supply of other equipment, except mains supply, are required to be marked with a maximum rating or reference to equipment permitted to be connected.	See copy of marking plate.	P
Annex F (F.3.7)	Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E, or CAN/CSA C22.2 No. 94.1 or 94.2.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex G (G.7)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
	Power supply cords for outdoor equipment are required to be suitable outdoor use type as required by Section 400.4 of the NEC and Rule 4-012 of the CEC, i.e., marked "W."		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuits within the equipment.	N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuits within the equipment.	N/A
Annex Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring are required to have special voltage, current, power and marking requirements.		N/A
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and complies with Article 230 of the National Electrical Code (NEC), NFPA 70 and Section 6 of the Canadian Electrical Code, Part I, CSA C22.1.		N/A
	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.	The equipment not intended to be used within such environments.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	Not such equipment.	N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. and Canadian Regulations.	The equipment is not for children used.	N/A
	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.	Not a baby monitors.	N/A
	Storage batteries and battery management equipment, other than associated with lead-acid batteries, and including battery backup systems that are not an integral part of stationary AV and ICT equipment, such as provided in separate cabinets, are required to be certified (listed) to the appropriate standard(s) for such storage batteries and equipment.		N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered.	P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquids within the equipment.	N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.	No such application.	N/A
Annex DVA (10.3)	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No such parts.	N/A
Annex DVA (10.5)	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No such parts.	N/A
Annex DVA (F.3.3.4)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or that are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."	Single phase only.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.	Not such application.	N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position, where mounted in an enclosure, vertically mounted disconnect switches and circuit breakers with vertical operating means extending outside the enclosure are required to indicate in a location visible when accessing the external operating means whether the switch or circuit breaker is in the open (off) or closed (on) position.	No such parts.	N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No standard supply outlets, receptacles, medium-base or smaller lampholders provided.	N/A
	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.	No such parts.	N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-400 and 10-612.	No such parts.	N/A
Annex DVA (G.4.3)	Interconnection of units by conductors supplied by a limited power source, or a Class 2 circuit defined in the NEC/CEC may have field wiring connections other than specified in DVH.3, such as wire-wrap and crimp-on types, if the limited power source and Class 2 circuits are separated from all other circuits by barriers, routing or fixing.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	No such parts.	N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).	No such parts.	N/A
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix "W" marked on the flexible cord.	No such parts.	N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.	Not such application.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (Q)	If applicable per NEC 725.121(C), some limited power sources supplied from AV/ICT equipment are required to have a label indicating the maximum voltage and maximum current, or maximum voltage and nominal current output for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.		N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 are required to be marked with the voltage rating and "Class 2" or equivalent. The marking is located adjacent to the terminals and visible during wiring.	Not applicable for the equipment.	N/A
	Applicable parts of Chapter 8 of the NEC, and Rules 54 and 60 of the CEC, may be applicable to ITE installed outdoors with connections to communication systems.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.	Not such application.	N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.	Not such application.	N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These equipment and components include: appliance couplers, attachment plugs, battery backup systems, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, modular data centers, power supply cords, some power distribution equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	UL approved components used. Refer to main test report for details.	P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.	The equipment is not permanently connected equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are required to be in accordance with the NEC/CEC.	Pluggable equipment type A.	N/A
Annex DVH (DVH.2.1)	For safe and reliable connection to a mains, permanently connected equipment is to be provided.		N/A
Annex DVH (DVH.2.2)	Additional considerations for D.C. mains.		N/A
Annex DVH (DVH.3.2.1)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.		N/A
Annex DVH (DVH.3.2.3)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
Annex DVH (DVH.3.2.4)	All associated mains supply terminals are located in proximity to each other and to the main protective earthing terminal, if any.		N/A
Annex DVH (DVH.3.2.5)	Terminals are located, guarded or insulated so that, should a strand of a conductor escape when the conductor is fitted, there is no likelihood of accidental contact between such a strand and accessible conductive parts or unearthed conductive parts separated from accessible conductive parts by supplementary insulation only.		N/A
Annex DVH (DVH.3.3)	When field connection to an external circuit is via wires (example, free conductors), the wires are not smaller than 18 AWG (0.82 mm ²) and the free length of the wire inside an outlet box or wiring compartment is 150 mm or more.		N/A
Annex DVH (DVH.3.4)	Size of protective earthing conductors and terminals	(See sub-clause 5.6.5)	N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	The equipment is not permanently connected equipment.	N/A
Annex DVH (DVH.4.1)	Wire bending space		N/A
Annex DVH (DVH.4.2)	Volume of wiring compartment		N/A
Annex DVH (DVH.4.3)	Separation of circuits		N/A
Annex DVH (DVH.5)	Equipment markings and instructional safeguards		N/A
Annex DVH (DVH.5.1)	Identification of protective earthing terminal		N/A
Annex DVH (DVH.5.2)	Identification of terminal for earthed conductor (neutral)		N/A
Annex DVH (DVH.5.3)	Identification of terminals for aluminium conductors		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.5.4)	Wire temperature ratings		N/A
Annex DVH (DVH.5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.	The equipment not connected to a centralized d.c. power system.	N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.	No TNV circuits within the equipment.	N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.	No TNV circuits within the equipment.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT			
IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment)			
Differences according to..... : AS/NZS 62368.1:2022			
TRF template used: : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No..... : AU_NZ_ND_IEC62368_1E			
Attachment Originator : JAS-ANZ			
Master Attachment..... : 2022-07-01			
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	National Differences		P
Appendix ZZ	Variations to IEC 62368-1:2018 (ED. 3.0) for Australia and New Zealand		P
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2018 (ED. 3.0)		P
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		P
2	<p>After the first paragraph, <i>add</i> the following:</p> <p>The Australian or Australian/New Zealand Standards listed below are modified adoptions of, or not equivalent to, the IEC normative references and are required for the application of this Standard. All references in the source text to those IEC normative references shall be replaced by references to the corresponding Australian or Australian/New Zealand Standards. Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably</p> <p>-AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i></p> <p>-AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i></p> <p>-AS/NZS 3191, <i>Electric flexible cords</i></p> <p>-AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i></p> <p>-IEC 60086-2 <i>Primary batteries — Part 2: Physical and electrical specifications</i></p> <p>-AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i></p> <p>-AS/NZS 60320.1, <i>Appliance couplers for household and similar general purposes,</i></p>		P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p><i>Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)</i></p> <p><i>-AS/NZS 60320.2.2, Appliance couplers for household and similar general purposes</i></p> <p><i>Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)</i></p> <p><i>-AS/NZS 60695.2.11, Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products</i></p> <p><i>-AS/NZS 60695.11.5, Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance</i></p> <p><i>-AS/NZS 60695.11.10, Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods</i></p> <p><i>-AS/NZS 60884.1, Plugs and socket-outlets for household and similar purposes,</i></p> <p><i>Part 1: General requirements</i></p> <p><i>-AS/NZS 60950.1, Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</i></p> <p><i>IEC 61032:1997, Protection of persons and equipment by enclosures—Probes for verification</i></p> <p><i>-AS/NZS 61558.1, Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 3, MOD)</i></p> <p><i>-AS/NZS 61558.2.16, Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.</i></p>		
4.7.2	<p>Requirements</p> <p><i>Delete the text of the second paragraph and replace with the following:</i></p> <p>Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet conforming to AS/NZS 3112, shall conform to the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.</p> <p>Conformity is checked by inspection and, if necessary, by the tests in AS/NZS 3112.</p> <p>NOTE: Equipment with plug portions for use in countries other than Australia and New Zealand will need to conform to other countries' requirements</p>		N/A

IEC62368_1E - ATTACHMENT				
Clause	Requirement + Test		Result - Remark	
	Note Additional AS/NZS 3112 Appendix J, TRF is appended to end of this TRF.			
4.7.3	Compliance Criteria <i>Delete</i> this clause			
4.8.1	General After second list, <i>add</i> the following: NOTE: Refer to the Consumer Goods (Products Containing Button/Coin Batteries) Safety Standard 2020 and Consumer Goods (Products Containing Button/Coin Batteries) Information Standard 2020 for more information on button cell batteries in Australia..			
5.4.10.2.1	General <i>Delete</i> the first paragraph and <i>replace</i> with the following: In Australia, the separation is checked by the test given in both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test given in either 5.4.10.2.2 or 5.4.10.2.3..			
Table 28	<i>Delete</i> Table 28 and <i>replace</i> with the following:			N/A
Parts	Impulse test		Steady state test	
	New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) ^a	2.5 kV	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment.	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) ^b	1.5 kV ^c		1.0 kV	1.5 kV
^a Surge suppressors shall not be removed. ^b Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment. ^c During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.				
5.4.10.2.2	<i>Delete</i> "NOTE" and <i>replace</i> with "NOTE 1". After NOTE 1, <i>add</i> the following: NOTE 2: For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 3: For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.			
5.4.10.2.3	<i>Delete</i> "NOTE" and <i>replace</i> with "NOTE 1". After NOTE 1, <i>add</i> the following: NOTE 2: For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 3: The 3 kV and 1.5 kV values for Australia have been determined considering the low			

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	frequency induced voltages from the power supply distribution system.		
6	Electrically-caused fire		P
6.6	After Clause 6.6, <i>add</i> the new Clauses 6.201 as follows: 6.201 External power supplies, docking stations and other similar devices (see special national conditions)		P
8.6	Stability of equipment		N/A
Table 36	Footnote ^a , after first sentence, <i>add</i> the following: Equipment having displays with moving images shall include "television sets and display devices".		N/A
8.6.1	After Clause 8.6.1 <i>add</i> the following new clauses: 8.6.201 Restraining Device fixing point (see special national conditions) 8.6.202 Restraining device (see special national conditions)		N/A
Annex F Paragraph F.3.3.4	Rated Voltage <i>Delete</i> "NOTE" and <i>replace</i> with NOTE1" After NOTE 1, <i>add</i> the following Equipment that is intended for connection to the supply mains in Australia and New Zealand shall be marked with: (a) A rated voltage of: <ul style="list-style-type: none">• 230 V for single phase equipment• 400 V for poly phase equipment Or (b) A rated voltage range that includes: <ul style="list-style-type: none">• 230 V for single phase equipment• 400 V for poly phase equipment NOTE 2: equipment that is not rated as above is not suitable for direct connection to the supply mains in Australia or new Zealand.		N/A
Annex F.3.3.5	After the list, <i>add</i> the following Equipment that is intended for connection to supply mains in Australia or New Zealand shall be marked with a rated frequency of 50 Hz or a rated frequency range or nominal value which includes 50Hz		N/A
Annex F.3.8	After "The DC output of an external power supply", insert "or docking stations and other similar external devices"		N/A
Annex G	Mains connectors		P

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Clause	Requirement + Test	Result - Remark	Verdict
Paragraph G.4.2	<p>1 After "IEC 60320", insert "or AS/NZS 60320 series".</p> <p>2 After "IEC 60906-1", insert "or AS/NZS 3123"</p> <p>3 <i>After</i> first paragraph <i>add</i> the following:</p> <p>10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.</p>		
Paragraph G.5.3.1	<p>Transformers, General</p> <p>1 Third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2'.</p> <p>2 Fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.</p>	Transformer meets the requirements given in G.5.3.2 and G.5.3.3	N/A
Annex G.7.1	<p>Mains supply cords, General</p> <p>Fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'.</p>	No such cord provided	N/A
Table G.7	<p>Sizes of conductors</p> <p>1 First column, second row, <i>delete</i> "6" and <i>replace</i> with "7.5"</p> <p>2 Second column, second row, <i>delete</i> '0,75' and <i>replace</i> with '0.75^b'</p> <p>3 <i>Delete</i> NOTE 1.</p> <p>4 <i>Replace</i> 'NOTE 2' with 'NOTE:'.</p> <p>5 <i>Delete</i> 'Footnote b' and <i>replace</i> with the following:</p> <p>^b This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm² three-core supply flexible cords are not permitted; see AS/NZS 3191).</p> <p>6 Footnote c <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'.</p> <p>7 Footnote d <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'.</p>		N/A
Annex M M 2.1	<i>Add</i> "IEC 60086-2" to the list		N/A
Annex M Paragraph M.3.2	<p>Test method</p> <p>Delete "NOTE" and replace with "NOTE 1"</p> <p>After NOTE 1 <i>add</i> the following:</p> <p>NOTE 2: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of ES1 may be applied to the source input under assumed single fault conditions</p>		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	in the source when assessing the charging circuit in the equipment under test.		
	Special national conditions (if any)		P
6.201	<p>External power supplies, docking stations and other similar devices</p> <p>For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage—</p> <p>(a) at all ES1 outlets or connectors shall not increase by more than 10 % of the output rated voltage under normal operating conditions, measured after 3 s of introducing a single fault condition and after 3 s of introducing abnormal operating conditions; and</p> <p>(b) of a USB outlet or connector shall not increase by more than 3 V or 10 % of the output rated voltage under normal operating conditions, whichever is higher, measured after 3 seconds of introducing a single fault condition and after 3 s of introducing abnormal operating conditions</p> <p>For equipment with multiple rated voltages at the output, the requirements apply with the equipment configured for each output rated voltage in turn</p> <p>NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. The 3 s measurement delay is based on IEC document 108/742/INF, <i>TC 108, Standards Interpretation Panel Question 15 — Output voltage</i>, in relation to similar requirements in IEC 62368-3:2017.</p> <p>Conformity shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single fault conditions of Annex B.4.</p>	See main report	P
8.6.201	<p>Restraining device fixing point</p> <p>Freestanding-capable MS2 and MS3 television sets and display devices shall be provided with a fixing point to facilitate the anchoring of the equipment from toppling</p> <p>The fixing point shall conform to Clause 8.7 where the fixing point uses a wall, ceiling or other structure mount. Alternatively, the fixing point shall be capable of withstanding a pull equal to the mass of the equipment in all directions without damage</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point		
8.6.202	<p>Restraining device MS2 and MS3 television sets and display devices shall be provided with a restraining device and associated hardware to attach to the television set or display device.</p> <p>The restraining device shall be capable of withstanding a pull equal to the mass of the equipment in all directions.</p> <p>Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point</p>		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

AS/NZS 3112:2017 Appendix J			
ATTACHMENT TO TEST REPORT AS_NZS_3112:2017_+A1:2021 Appendix J AUSTRALIAN / NEW ZEALAND NATIONAL DIFFERENCES (Approval and test specification—Plugs and socket-outlets)			
Differences according to : AS_NZS_3112:2017_Amendment 1:2021_Appendix J			
TRF template used : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : AS_NZS_3112:2017_Appendix J			
Attachment Originator : JAS-ANZ			
Master Attachment : 2022-06			
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	Note: AS/NZS 3112 is NOT covered by IECEE Accreditation for Testing / Reporting Please State Laboratory Accreditation for this Standard		
	Accreditation		
	Accreditation Stamp		

J1 SCOPE	<p>General: This Appendix specifies additional dimensional and constructional requirements for detachable plug portions, or equipment incorporating integral supply pins or equipment incorporating detachable plug portions.</p> <p>This Appendix shall be read in conjunction with Section 2 of this Standard.</p> <p>For the purposes of this Appendix, where the term 'plug' is used in Section 2 it shall be taken to mean the plug portion of equipment or the detachable plug portion.</p> <p>The equipment shall comply with the relevant product Standard. The tests and requirements specified in this Appendix are in addition to any test and requirements of the relevant product Standard for the equipment.</p> <p>(AS/NZS 3112:2017/A1:2021)</p>	N/A
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J2	DEFINITION	N/A
J2.1	<p>Detachable plug portion</p> <p>A plug portion that is detachable from the equipment and with connections including the following standardized outputs and other contacts</p> <p>(a) Type A (see Figure J1):</p> <p>A detachable plug portion with a connection intended for plugging directly into equipment. The connection being via the equipment group 1 appliance inlet within the scope of AS/NZS 60320.1.</p> <p>(b) Type B (see Figure J2):</p> <p>A detachable plug portion with a non-standardized connection intended for</p>	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	plugging directly into equipment (c) Type C (see Figure J3): A detachable plug portion with a connection intended for use with an adaptor connected to a flexible cord so as to replicate a supply plug and flexible cord configuration. The connection being via a group 1 appliance outlet within scope of AS/NZS 60320.2.2, which is integral with the plug portion (AS/NZS 3112:2017)		
J2.2	Integral plug portion A plug portion that is integral to the equipment enclosure and is not detachable (AS/NZS 3112:2017)		N/A
J2.3	Plug portion A plug portion is that portion of equipment with pins for insertion into a socket-outlet, including the plug pins, terminals of the plug pins, external dimensions of the 'maximum projection' and any connections of a detachable plug portion. (AS/NZS 3112:2017/A1:2021)		N/A

J3	REQUIREMENTS FOR THE PLUG PORTION	N/A
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J3.1	General The following provisions apply to the dimensional and constructional requirements of plug portions of equipment and any detachable connection between the plug portion and the equipment:		N/A
(a)	For detachable plug portions intended for connection to the equipment in multiple orientations, the relevant tests are performed in the most onerous orientation.		N/A
(b)	For Type A detachable plug portion, the relevant requirements of AS/NZS 3105:2014 are applicable, in addition to conformance with relevant clauses of this Appendix		N/A
(c)	For Type B detachable plug portions, the conformance is shown by the relevant clauses of this Appendix.		N/A
(d)	For Type C detachable plug portions, conformance is shown by assessment to Section 2 of this Standard (plugs) and relevant clauses of this Appendix (AS/NZS 3112:2017)		N/A

J3.2	Plug pins of plug portions The requirements of Clause 2.2 are applicable for plug pins.	N/A
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2.2	PLUG PINS	N/A
2.2.1	Current carrying parts of plug pins of metal having	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	sufficient mechanical strength, electrical conductivity and resistance to corrosion adequate for the intended use		
	Plug pin material?		N/A
2.2.3	Plug pins adequately proportioned throughout and portion adjacent to the connection designed to not introduce a stress concentration which may lead to a fracture of the pin, and suitably shaped to prevent abrasion or cutting of conductor strands due to flexure in normal use		N/A
	Exposed ends of plug pins have a lead-in, bevel or radius to facilitate entry into socket-outlets and to operate shutters		N/A
	Flat-pins with the following profile are deemed to comply:		N/A
(a)	Flat-pins with a radius on the end with side bevels may have a width and thickness profile as specified in Figure 2.1(h)		N/A
(b)	Flat-pins square on the end with corner and side bevels may have a width and thickness profile as specified in Figure 2.1(i)		N/A
(c)	Flat-pins square on the end with corner bevels and a radius on the sides may have a width and thickness profile as specified in Figure 2.1(j)		N/A
	Contact portion of the pins smooth and free from openings or indentations		N/A
	Flat pin plugs having a longitudinal seam or opening in the contact portion of one face; width not exceeding 0.3 mm and		N/A
	Thickness not exceeding 1.58 mm		N/A
	Exposed portion of earthing pins and pins other than insulated pins free from any non-metallic coverings or coatings (AS/NZS 3112:2017)		N/A
2.2.4	Live parts of insulated pin plugs not exposed when plug is partially or fully engaged with associated socket		N/A
	Compliance by measurement to Figure 2.4	(see appended table)	N/A
	Lacquer, enamel or sprayed insulating coating not considered to be insulation material		N/A
	All live pins on low voltage plugs except for those shown in Figure 2.1 (a2), (b) and (g) of the insulated pin type		N/A
	Colour green or green / yellow not used for insulation of insulated pins		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	(AS/NZS 3112:2017)		
J3.3	Ratings and dimensions for low-voltage plug portions Requirements of clauses 2.8.1 and 2.8.4 apply for rating and dimensions		N/A
2.8	Ratings and Dimensions of Low Voltage Plugs		N/A
2.8.1	Plugs with ratings up to and including 20A; shall conform to the appropriate dimensions shown in Figure 2.1	(see appended results)	N/A
	Rating of plug	___A	N/A
	Nominal dimensions covering disposition of pins checked by gauge of Appendix A		N/A
	Distance between live pin and edge of moulding to not less than 9 mm		N/A
	Measured distance	___mm	N/A
	No point on plug face protrudes more than 0.5 mm		N/A
	Measured protrusion	___mm	N/A
	Dimensional requirements of Figure 2.1(e2) did not applied to plugs with greater than three pins (AS/NZS 3112:2017)		N/A
2.8.4	Low voltage plugs comply with dimensions of Figure 2.1	(see appended table 2.8.1)	N/A
	Disposition of pins checked by gauge complying with Appendix A, B or F as appropriate		N/A
	Low voltage plug having rating up to 15A and of the Figure 2.1 (a1), (c), (d), (f) or (g) type; comply with dimensional requirements of Figure 2.1 (e1 and e2)		N/A
	20A plug of Figure 2.1 (a2) type complies with dimensional requirements of Figure 2.1 (e2)		N/A
	Plugs with insulated pins need not comply with dimension $R20.0 \pm 1$ mm requirement of Figure 2.1 (e3) provided there is at least 9mm from the edge of the live pins to the edge of the plug face Figure 2.1(e3). (AS/NZS 3112:2017)		N/A
J3.4	Internal connections for plug portions Requirements of clause 2.9 apply for internal connections, unless requirements contained in the relevant product standard (AS/NZS 3112:2017)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.9	INTERNAL CONNECTIONS		N/A
	Plug provided with earthing connections designed and constructed so that when plug is correctly wired and assembled:		N/A
(a)	Loose terminal screw or conductive material cannot bridge any live or earthed parts		N/A
(b)	Earthing parts effectively isolated from contact with live conductor which may become detached		N/A
(c)	Live parts effectively isolated from contact with any earthing conductor which may become detached		N/A
	Any connections for auxiliary devices comply with above requirements (AS/NZS 3112:2017)		N/A
J3.5	Arrangement of earthing connections for plug portions Requirements of clause 2.10 apply for arrangement of earthing connections		N/A
2.10	Arrangement of earthing connections		N/A
	Earthing pin radial to the circle embracing the pins (AS/NZS 3112:2017)		N/A
J3.6	Configuration of plug portions Requirements of clause 2.12.6 apply for configuration of the plug portion (AS/NZS 3112:2017)		N/A
2.12	Marking		N/A
2.12.6	Configuration of plugs		N/A
	Pins disposed so that configuration, as viewed from the pins, is earth, neutral and active in a clockwise direction		N/A
	Where there is no earthing pin; live pins conform to this configuration (AS/NZS 3112:2017)		N/A
J4	Tests		N/A
J4.1	General Plug portions of equipment shall be subjected to the following tests and unless stated otherwise, shall comply with the requirements specified in Section 2 for each test. The number of test samples shall be in accordance with Table J1 For equipment with a detachable plug portion, the assessment(s) of Table J1 tests 2, 3, 5, 10 and 11 shall be conducted on the—		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	(a) assembled equipment with the detachable plug portion connected; and (b) the detachable plug portion after it has been separated from the equipment (AS/NZS 3112:2017/A1:2021)		
J4.2	High voltage test The requirements of Clause 2.13.3 are applicable unless requirements are contained in the relevant product standard (AS/NZS 3112:2017)		N/A
2.13.3	Test No.1 - High voltage test		N/A
	Plug withstands without failure electric strength test as specified (AS/NZS 3112:2017)	(see appended table)	N/A
J4.3	Mechanical strength		N/A
J4.3.1	Tumbling barrel test The tumbling barrel test is applied to determine the mechanical strength of the plug portions and equipment having integral or detachable plug portions. For equipment with a detachable plug portion, the detachable plug portion may become detached during the test. If this occurs the detachable plug portion shall be reassembled with the equipment when the pins are straightened as per (a) and (b) below. Three samples (Samples BCD in Table J1) that have not been subjected to any previous test are tested as specified in Clause 2.13.7.1 , however the test is modified as follows:		
	They are tested in a tumbling barrel as described in AS 60068.2.32 or test Free fall repeated – Procedure 2 in IEC 60068-2.31. The samples shall be dropped from a height of 500 mm onto a steel plate, 3 mm thick. The barrel shall be turned at a rate of 5 r/min, to yield 10 falls per minute. Only one sample shall be tested at a time. A sample is dropped— (a) 500 times if the mass of the specimen does not exceed 250 g. The pins being straightened after each 100 drops and at the completion of the test to pass through the appropriate gauge of Figure A1 , Figure B1 or Figure F1 ; and (b) 250 times if the mass of the specimen exceeds 250 g. The pins being straightened after each 25 drops and at the completion of the test to pass through the appropriate gauge of Figures A1 , Figure B1 or Figure F1 . (AS/NZS 3112:2017/A1:2021)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Mass of sample	_____ Grams	N/A
	Number of drops	500 / 250	N/A
	Compliance shall be checked by Paragraph J4.3.3	(See appended table)	N/A

J4.3.2	Test No.3 Impact test. Plug portions and equipment having integral plug portions or detachable plug portions shall withstand lateral impact forces. All samples that were subjected to the tests in Paragraph J4.3.1 (Samples BCD in Table J1) shall be tested as follows:		N/A
	(a) The sample shall be positioned at the centre of a steel plate with a thickness of at least 6 mm. Apertures in the steel plate for the plug pins to pass through shall conform to the corresponding socket Standard. The sample shall be held against the steel plate by clamping all the pins.		N/A
	(b) Samples shall be subjected to blows, with an impact energy of 1.0 ± 0.05 J by any means having the same performance as the spring-operated impact-test apparatus of AS/NZS 3100.		N/A
	(c) Three blows shall be applied to every point that is most likely to directly or indirectly stress the enclosure joints of the sample		N/A
	Compliance shall be checked by Paragraph J4.3.3		N/A

J4.3.3	Specific compliance criteria This Paragraph provides the common compliance assessment criteria for tests specified in Paragraphs J4.3.1 and J4.3.2 .		N/A
	Following each test, the samples shall comply with Clause 2.13.7.1		N/A
(a)	assembled equipment with the detachable plug portion connected;		N/A
	After the test, samples show no damage	(See appended table)	N/A
(b)	the detachable plug portion after it has been separated from the equipment.		N/A
	After the test, samples show no damage	(See appended table)	N/A

4.3.4	Pin bending test The pins of the plug portion of three samples (Samples EFG in Table J1) not subjected to any previous tests shall be tested for compliance with the pin bending test of Clause 2.13.7.2 (AS/NZS 3112:2017/A1:2021)		N/A
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2.13.7.2	Test No.4 – Pin bending test		N/A
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Clause	Requirement + Test	Result - Remark	Verdict

	All flat-pin plugs rated up to and including 15 A shall be subjected to the pin bending test		N/A
	Three samples are subjected by clamping the plug in a rigid holding block and applying the bending force as specified		N/A
	After the test the pins shall not be broken off. (AS/NZS 3112:2017)		N/A

J4.8.3	Test No.5 Plug portion detachment requirements		N/A
	For all Type B or C devices and for Type A devices where the outlet of the detachable plug portion is parallel to the plug supply pins, disengagement of the detachable plug portion from the equipment shall require at least two simultaneous independent actions or the use of a tool.		N/A
	The plug portion and the equipment/adaptor shall be connected and disconnected 50 times (100 strokes).		N/A
	Compliance is verified by the plugging test, a force which, over a period of 10 s, shall be increased steadily to 60 ± 0.6 N and held at this value for a further 10 s, shall be applied evenly at the connecting equipment in a direction parallel to the pins. This procedure shall be conducted three times on the same plug portion, at intervals of 5 min, without disturbing the plug portions between tests		N/A
	During the test the plug portion shall not separate		N/A
	The test of AS/NZS 3112 'temperature rise test' for plugs shall be conducted immediately after the above test without disturbing the sample. Test No 6 Temperature Rise test J4.4 (AS/NZS 3112:2017/A1:2021)		N/A

J4.4	Temperature rise test The relevant requirements of Clause 2.13.8 are applicable for the temperature rise test, except that the test current shall be that specified in the relevant product standard		N/A
	The temperature rise of the pins shall not exceed 45 K irrespective of the temperature rise of parts specified in end-product standards.		N/A
	For detachable plug portions the temperature rise of terminals and contacts shall not exceed 45 K. (AS/NZS 3112:2017)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.13.8	Test No.6 – Temperature rise test		N/A
	Plug tested in draught free environment as specified using clamping units as specified in Figure 2.10		N/A
	Test Current Relevant Product Standard	_____ Amps _____ (Standard?)	N/A
	Temperature of terminals and contacts of detachable plug portion not exceeding 45 K (AS/NZS 3112:2017)	(see appended table)	N/A
J4.5	Securement of pins of the plug portion The requirements of Clause 2.13.9 are applicable for the securement of pins. (AS/NZS 3112:2017)		N/A
2.13.9	Test No.7. Securement of pins		N/A
2.13.9.1	Movement of pins		N/A
	Plug pins clamped 5 ± 0.5 mm from pin face; test equipment and sample pre-conditioning for 1 h at $40 \pm 1^\circ\text{C}$		N/A
	Force of 18 ± 1 N applied to pin 14 ± 0.5 mm from plug face; applied gradually over 10 s and maintained for 10 s; applied in four directions		N/A
	Maximum deflection during test not exceeding 2.0 mm	(see appended results)	N/A
	Any distortion 5 minutes after test does not prevent insertion of plug into standard gauge(s) (AS/NZS 3112:2017 + A1:2021)		N/A
2.13.9.2	Fixing of pins		N/A
	Plug heated to $50 \pm 2^\circ\text{C}$ for 1h		N/A
	Force of 60 ± 0.6 N applied to each pin over 10 s and maintained for 10 minutes; applied in two directions along length of pin		N/A
	Maximum displacement during test not exceeding 2.4 mm		N/A
	Maximum measured displacement		N/A
	Pin returns to within 0.8 mm of nominal length within 5 minutes of removal of test force (AS/NZS 3112:2017)		N/A
J4.6	Tests on the insulation material of insulated pin-plug portions The requirements of Clause 2.13.13 are applicable for insulating material of		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	insulated plug pins. (AS/NZS 3112:2017)		
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2.13.13	Test No.8 Tests for insulation material of insulated pin plugs		N/A
2.13.13.1	Material of pin-insulation resistant to stresses at temperature likely to occur		N/A
2.13.13.2	Pressure test at high temperature		N/A
	Specimen tested as per Figure 2.5 with force of 2.5 N applied as specified; maintained for 2 h at $160 \pm 5^{\circ}\text{C}$; removed and cooled by immersion in water within 10 s		N/A
	Thickness of insulation at point of impression not reduced by more than 50%		N/A
	Initial thickness	mm	N/A
	Thickness after test	mm	N/A
	No visible cracks on insulation material		N/A
	Dimension of insulating material not below minimum size in Figure 2.4 (AS/NZS 3112:2017)		N/A

2.13.13.3	Static damp heat test		N/A
	Specimen subjected to two damp heat cycles in accordance with IEC 60068-2-30; Db (12 + 12h), 95% RH, $25 \pm 3^{\circ}\text{C}$; 40°C		N/A
	After this treatment and recovery to room temperature; specimen subjected to:		N/A
(a)	Insulation resistance test in accordance with clause 2.13.2 (e)	(see appended table)	N/A
(b)	High voltage test in accordance with clause 2.13.3	(see appended table)	N/A
(c)	Abrasion test in accordance with clause 2.13.13.6		N/A
2.13.13.4	Low temperature test		N/A
	Plug maintained at $-15 \pm 2^{\circ}\text{C}$ for minimum of 24 h and returned to room temperature; after which specimen subjected to:		N/A
(a)	Insulation resistance test in accordance with clause 2.13.2 (e)	(see appended table)	N/A
(b)	High voltage test in accordance with clause 2.13.3	(see appended table)	N/A
(c)	Abrasion test in accordance with clause 2.13.13.6		N/A
2.13.13.5	Impact test at low temperature		N/A
	Specimen maintained at $-15 \pm 2^{\circ}\text{C}$ for 24 h		N/A
	Specimen placed in position and subjected to impact test as per Figure 2.6; mass of $100 \pm 1\text{ g}$		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	falling through 100 mm		
	Four impacts applied; specimen rotated through 90° between impacts		N/A
	After return to room temperature; no visible cracks of insulating material		N/A
2.13.13.6	Abrasion test		N/A
	Plug held in clamp and tested as per Figure 2.7; pin loaded at 4 N; 20 000 movements		N/A
	After test; pins show no damage affecting safety or impairing further use of the plug		N/A
	Insulating sleeve not punctured or rucked up (AS/NZS 3112:2017)		N/A
J4.7	Test no.9 Equipment with a plug portion intended to be supported by the contacts of a socket-outlet		N/A
	Equipment with pins intended to be introduced into fixed socket-outlets not imposing undue strain on socket-outlet		N/A
	Applied torque not exceeding 0.25 Nm		N/A
	Measured torque (AS/NZS 3112:2017)	_____Nm	N/A
J4.8	Additional requirements for detachable plug portions		N/A
J4.8.1	Test no.10 Access to live parts		N/A
	Small test finger of Figure 13 of IEC 61032 was not possible to contact live parts with the force of 20N		N/A
	incorrectly assemble the plug portion was not possible (AS/NZS 3112:2017)		N/A
J4.8.2	Test No.11 Construction of detachable contacts where the input current of the equipment exceeds 0.2 A		N/A
	Contacts of the equipment shall be such that they make and maintain, under normal service conditions, satisfactory electrical and mechanical contact with the corresponding contact of the detachable plug portion.		N/A
	For connections intended to accommodate pins, contact shall be made on two surfaces diametrically opposite, except if a single spring-assisted contact is used. (AS/NZS 3112:2017/A1:2021)		N/A
	Contacts shall not rely exclusively on the resilience of the contact material and shall have		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	an opposite face of material other than thermoplastic or resilient insulating material. (AS/NZS 3112:2017/ A1:2021)		
	The alignment and contact-making properties of contacts shall be independent of terminal screws		N/A
	The effectiveness of the contacts shall be independent of pressure from any thermoplastic or resilient moulding.		N/A
	A visual inspection is conducted to determine the existence of interference between the metal contacts and the thermoplastic or resilient moulding to provide supplementary contact pressure to the metal contacts.		N/A
	Conformance of the effectiveness of the contacts is checked by inspection and by the inspection and tests in J4.8.3 (AS/NZS 3112:2017)		N/A

J4.8.4	Resistance of insulating material to heat and fire		N/A
J4.8.4.1	Test no.12 Resistance to heat For Type B detachable plug portions parts of non-metallic material, parts of insulating material supporting live parts including connections, and parts of thermoplastic material providing supplementary insulation or reinforced insulation, shall be sufficiently resistant to heat if their deterioration could cause the appliance to fail to comply with this Standard.		N/A
	Ball pressure test conducted in accordance with IEC 60695-10-2		N/A
(a)	75°C ± 2°C, for external parts;		N/A
(b)	125°C ± 2°C, for parts supporting live parts.		N/A

J4.8.4.2	Test no.13 Resistance to fire		N/A
	Plug portions comply with resistance to fire requirements of AS/NZS 3100 Annex A as follows:		N/A
	The glow wire test temperature 'T' for 'retaining parts' of fixed socket outlets shall be 750 C (AS/NZS 3112:2017)		N/A

TABLES OF RESULTS

2.2.4	TABLE: Dimensions of insulation on insulated pin plugs		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Phase pin			8.7 ± 0.5
Neutral pin			8.7 ± 0.5

2.8.1	TABLE: Dimensions of plugs- 10A (a1)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			6.35 ± 0.15
Earth pin width (B)			6.35 ± 0.15
Pin thickness (C)			1.63 + 0.15, -0.05
Pin disposition (D)			checked by test gauge
Pin disposition (E)			checked by test gauge
Phase and neutral pin length (F)			17.06 ± 0.4
Earth pin length (G)			19.94 ± 0.8
Pin boss radius - maximum			21.0 max
Pin boss height			8.6 min

2.8.1	TABLE: Dimensions of plugs- 15A (a1)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			6.35 ± 0.15
Earth pin width (B)			9.08 ± 0.15
Pin thickness (C)			1.63 + 0.15, -0.05
Pin disposition (D)			checked by test gauge
Pin disposition (E)			checked by test gauge
Phase and neutral pin length (F)			17.06 ± 0.4
Earth pin length (G)			19.94 ± 0.8
Pin boss radius - maximum			21.0 max
Pin boss height			8.6 min

2.8.1	TABLE: Dimensions of plugs-20A (a2)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			9.08 ± 0.15
Earth pin width (B)			9.08 ± 0.15
Pin thickness (C)			1.63 + 0.15, -0.05
Pin disposition (D)			checked by test gauge
Pin disposition (E)			checked by test gauge
Phase and neutral pin length (F)			17.06 ± 0.4

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Earth pin length (G)		19.94 ± 0.8
	Pin boss radius - maximum		21.0 max
	Pin boss height		8.6 min

2.8.1	TABLE: Projection from plug face centroid		N/A
Direction of projection		Measured (mm)	Allowed (mm)
Left			≤ 21.9 or ≥ 27.0
Right			≤ 21.9 or ≥ 27.0
Up			≤ 21.9 or ≥ 27.0
Down			≤ 21.9 or ≥ 27.0

2.13.3	TABLE: Test No. 1 – High voltage test		N/A
Test voltage applied between:		Test voltage (V)	Breakdown
All poles of the plug; taken in pairs		1000	Yes / No
Live poles of the plug and any external metal		3500	Yes / No
Live poles of the plug and the earthing terminal		1000	Yes / No
Live poles of the plug and a flexible electrode		3500	Yes / No
Live poles and metal foil applied around insulation on pins		1250	Yes / No

2.13.7.1	Test No.2 – Tumbling barrel test		N/A
	Following the test, the samples shall comply with Clause 2.13.7.1(a..e)		N/A
	(a) Live parts shall not have become exposed to the standard test finger		N/A
	(b) For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained. AS/NZS 3100 Cl 8.5 The resistance shall not exceed 0.1 Ω	___ Ω.	N/A
	(c) Any other function affecting safety shall not be impaired		N/A
	(d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created (see Clause 2.9)		N/A
	(e) The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	Test No.3 Impact test for assembled equipment with the detachable plug portion connected and for equipment with an integral plug portion.		N/A
	Following the test, the samples shall comply with Clause 2.13.7.1 (a..e) as follows:		N/A
	(a) Live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	(b) For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained so that the resistance between the earthing terminal of any socket-outlet provided with an earthing contact and the earthing terminal of the plug used for testing shall be of a low resistance. Compliance is by the test of earthing connection in AS/NZS 3100 Clause 8.5. The resistance shall not exceed 0.1 Ω	___ Ω.	N/A
	(c) Any other function affecting safety shall not be impaired		N/A
	(d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created		N/A
	(e) The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.		N/A
	Following the test, the samples shall conform to the 'Guarding of live parts' requirements of AS/NZS 3100:2015 cl 5.1 as follows:		N/A
	Except for equipment intended for use only in a position not accessible to unauthorized persons, all equipment shall be so designed and constructed that, when the equipment is standing, supported, or fixed, in a normal manner, no person can inadvertently come into contact with any live part		N/A
	If a hole giving access to preset controls is marked as such on the enclosure or reference made to it in the instructions and the setting of this control requires a screwdriver or other tool, the adjustment of the control shall not allow contact with any live parts. A metal test pin having a diameter of 2 mm and a length of 100 mm shall not become live when it is inserted through the hole in every position with a force of 10 N.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	In addition, the opening or removal of any cover or component, with or without tools, where such opening or removal is necessary as a normal operation of the equipment as distinct from maintenance, repairs, or adjustment, shall not expose live parts to inadvertent personal contact.		N/A
	Any metal cover or casing enclosing live parts shall be of a strength sufficient to ensure that it cannot be deformed readily so as to come into contact with live parts.		N/A
	Compliance is checked by inspection, test and checking that live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Class II equipment and class II constructions shall be constructed and enclosed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only.		N/A
	It shall only be possible to touch parts which are separated from live parts by double insulation or reinforced insulation.		N/A
	Compliance is checked by application of the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Following the test, the samples shall conform to the 'Separation of live parts from non-current-carrying conductive parts' requirements of AS/NZS 3100.CI 5.2.2 as follows:		N/A
	The support and insulation of every live part shall be such as will ensure that no live part can make contact with any non-current-carrying conductive part exposed to personal contact.		N/A
	In respect of terminals of components such as switches, adequate clearances shall be maintained or insulation shall be provided to prevent contact of the terminals, or loose strands of flexible cords intended to be terminated therein, with exposed conductive parts. Where necessary, provision shall be made to ensure that conductors protruding through terminals, when normally connected, will not contact exposed conductive parts.		N/A
	Compliance is checked by inspection.		

	Test No.3 Impact test for the detachable plug portion after it has been separated from the equipment		N/A
	Following the test, the samples shall comply with Clause 2.13.7.1 (a..e)		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	(a) Live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	(b) For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained so that the resistance between the earthing terminal of any socket-outlet provided with an earthing contact and the earthing terminal of the plug used for testing shall be of a low resistance. Compliance is by the test of earthing connection in AS/NZS 3100 Clause 8.5. The resistance shall not exceed 0.1 Ω	___ Ω .	N/A
	(c) Any other function affecting safety shall not be impaired		N/A
	(d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created		N/A
	(e) The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.		N/A
	Following the test, the samples shall conform to the 'Guarding of live parts' requirements of AS/NZS 3100:2015 cl 5.1 as follows:		N/A
	Except for equipment intended for use only in a position not accessible to unauthorized persons, all equipment shall be so designed and constructed that, when the equipment is standing, supported, or fixed, in a normal manner, no person can inadvertently come into contact with any live part		N/A
	If a hole giving access to preset controls is marked as such on the enclosure or reference made to it in the instructions and the setting of this control requires a screwdriver or other tool, the adjustment of the control shall not allow contact with any live parts. A metal test pin having a diameter of 2 mm and a length of 100 mm shall not become live when it is inserted through the hole in every position with a force of 10 N.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	In addition, the opening or removal of any cover or component, with or without tools, where such opening or removal is necessary as a normal operation of the equipment as distinct from maintenance, repairs, or adjustment, shall not expose live parts to inadvertent personal contact.		N/A
	Any metal cover or casing enclosing live parts shall be of a strength sufficient to ensure that it cannot be deformed readily so as to come into contact with live parts.		N/A
	Compliance is checked by inspection, test and checking that live parts shall not have become exposed to the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Class II equipment and class II constructions shall be constructed and enclosed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only.		N/A
	It shall only be possible to touch parts which are separated from live parts by double insulation or reinforced insulation.		N/A
	Compliance is checked by application of the standard test finger (Figure 8.10 in AS/NZS 3100 or Test Probe B in IEC 61032)		N/A
	Following the test, the samples shall conform to the 'Separation of live parts from non-current-carrying conductive parts' requirements of AS/NZS 3100.CI 5.2.2 as follows:		N/A
	The support and insulation of every live part shall be such as will ensure that no live part can make contact with any non-current-carrying conductive part exposed to personal contact.		N/A
	In respect of terminals of components such as switches, adequate clearances shall be maintained or insulation shall be provided to prevent contact of the terminals, or loose strands of flexible cords intended to be terminated therein, with exposed conductive parts. Where necessary, provision shall be made to ensure that conductors protruding through terminals, when normally connected, will not contact exposed conductive parts.		N/A
	Compliance is checked by inspection.		N/A

2.13.8	TABLE: Test No. 6 - Temperature rise test		N/A
	Ambient temperature	°C	
	Test current	A	

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Measured part	dT measured (K)	dT allowed (K)
Active (phase) terminal		45
Neutral terminal		45
Earthing terminal		45

2.13.9.1	TABLE: Movement of pins		N/A
	Earth and neutral pins clamped – phase pin loaded		
Force direction	Measured deflection (mm)	Allowed deflection (mm)	
Force towards neutral plane parallel to pin plane		2.0	
Force from neutral plane parallel to pin plane		2.0	
Force outwards at 90° to pin plane		2.0	
Force inwards at 90° to pin plane		2.0	

2.13.9.1	TABLE: Movement of pins		N/A
	Phase and neutral pins clamped – earth pin loaded		
Force direction	Measured deflection (mm)	Allowed deflection (mm)	
Force inwards parallel to pin plane		2.0	
Force outwards parallel to pin plane		2.0	
Force towards neutral		2.0	
Force towards phase		2.0	

2.13.9.1	TABLE: Movement of pins		N/A
	Phase and earth pins clamped – neutral pin loaded		
Force direction	Measured deflection (mm)	Allowed deflection (mm)	
Force towards phase plane parallel to pin plane		2.0	
Force from phase plane parallel to pin plane		2.0	
Force outwards at 90° to pin plane		2.0	
Force inwards at 90° to pin plane		2.0	

2.13.13.3	TABLE: Test No. 13(b) – Insulation resistance test after static damp heat test		N/A
Applied between:	Insulation resistance (MΩ)	Minimum required (MΩ)	
Live poles and metal foil applied around insulation on pins		5	

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

2.13.13.3	TABLE: Test No.1 – High voltage test after static damp heat test		N/A
Test voltage applied between:		Test voltage (V)	Breakdown
Live poles and metal foil applied around insulation on pins		1250	Yes / No

2.13.13.4	TABLE: Test No.1 – Insulation resistance test after low temperature test		N/A
Applied between:		Insulation resistance (MΩ)	Minimum required (MΩ)
Live poles and metal foil applied around insulation on pins			5

2.13.13.4	TABLE: Test No.1 – High voltage test after low temperature test		N/A
Test voltage applied between:		Test voltage (V)	Breakdown
Live poles and metal foil applied around insulation on pins		1250	Yes / No

J4.8.4.1	TABLE: Test no.12 Resistance to heat		N/A
Component tested		Temperature (°C)	Diameter of impression (mm)

Conformance is checked by subjecting the relevant part to the ball pressure test of IEC 60695-10-2.

J4.8.4.2	TABLE: Test no.13 Resistance to Fire		N/A
	Plug portions shall comply with the requirements for resistance to fire in accordance with AS/NZS 3100:2017 Annex A. The glow-wire test temperature 'T' shall be 750°C.		N/A

Glow-wire testing was conducted in accordance with IEC 60695-2-11.

Test specimens arranged so that the surface in contact with the tip of the glow-wire was vertical and glow wire tip applied to surface of the specimen likely to be subjected to thermal stresses in normal use.

A layer of white pine board and wrapping tissue was placed beneath the sample at 200mm ± 5mm distance.



ATTACHMENT 1

Report No. CN22WTWW 001

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

SPECIMEN NUMBER	1	2	3	4	5	6	7	8
SPECIMEN DESCRIPTION								
Material								
Colour								
Test specimen								
Glow wire tip temperature (°C)	750	750	750	750	750	750	750	750
Duration of glow wire application (t _a) (s)	30	30	30	30	30	30	30	30
OBSERVATIONS								
Duration from beginning of glow-wire tip application to ignition of specimen or layer (t _i) (s)								
Duration from beginning of glow-wire tip application to when flames extinguish (t _e) (s)								
Maximum height of flames after initial 1s (to nearest 5 mm) (mm)								
Flame impingement on other parts								
Degree of tip penetration								
Degree of specimen distortion								
Scorching of pinewood board								
EVALUATION CRITERIA								



ATTACHMENT 1

Report No. CN22WTWW 001

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Visible flame or sustained glowing								
Visible Flame Duration in Seconds during test.								
Duration of flaming or glowing after tip removal (max. allowable 30 s) (s)								
Surrounding parts burned away completely (not permitted)								
Ignition of wrapping tissue layer (not permitted)								
RESULTS If parts tested withstand the glow-wire test, but during the test produce a flame that persists for longer than 2 s, then the consequential needle flame test of AS/NZS 3100:2017 Annex A 6.1.5 applies.								

LEGEND:

CE Complete Equipment	SA Sub Assembly	SE Self Extinguished
EBD Emitted Burning Droplets	SBD Specimen Burned and Distorted	SMD Specimen Melted and Distorted
ME Manually Extinguished	SC Separate Component	SS Specimen Scorched
NA Not Applicable	SCC Specimen Completely Consumed	WPNI Wall Penetrated but no Ignition
NI No Ignition	X Flame Appeared for an Instant	

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE: Needle- flame test (NFT)					N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Supplementary information:					
- NFT not relevant (or applicable) for Parts of material classified as V-0 or V-1					
- NFT not relevant (or applicable) for Base material of PCBs classified as V-0 or if relevant VTM-0					

	PHOTOGRAPHS	
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Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxyyyy

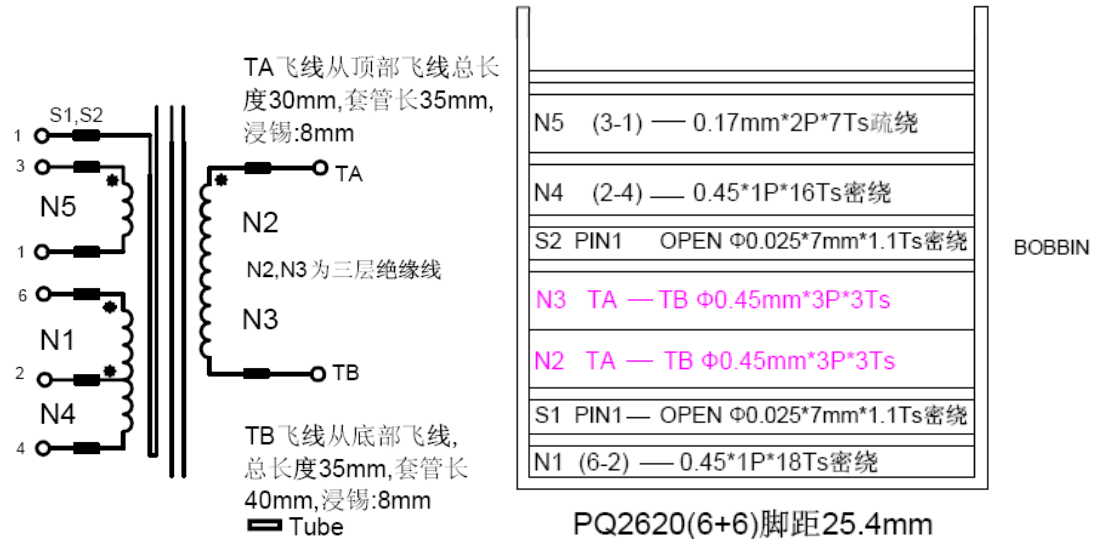
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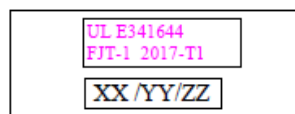
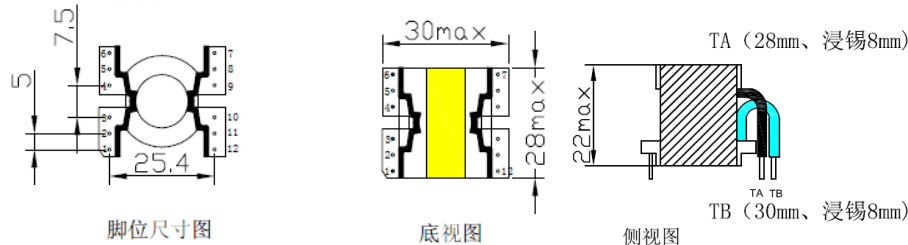
Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxyyy

Construction: (2017-T1)



8. 结构图



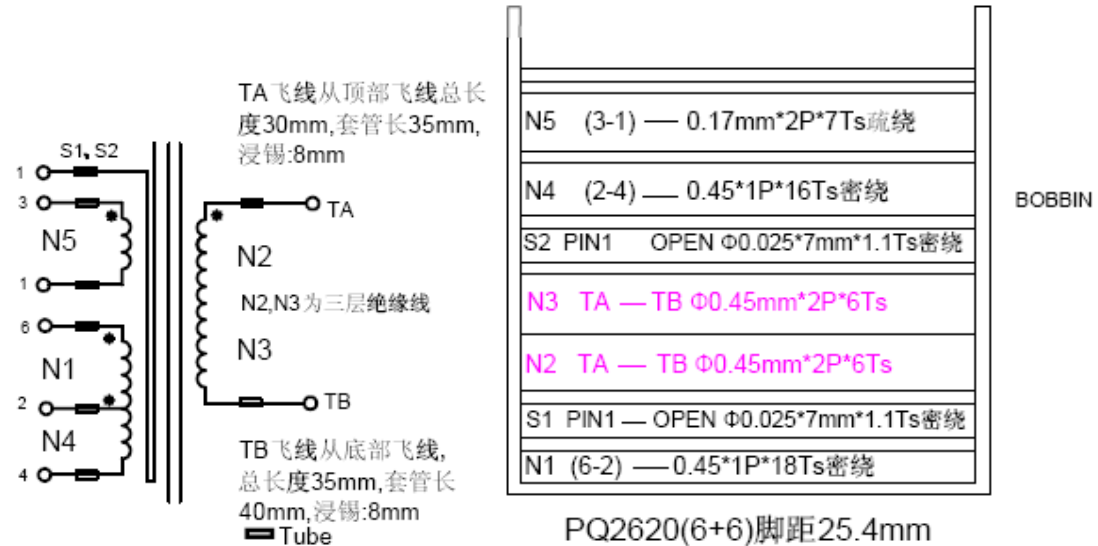
生产厂代号/年份/周期:

1. 使用PQ2620: CORE: 44材料
2. 使用PQ2620: 6+6PIN立式骨架排距25.4mm
3. 线层与层之间用9.5mm宽亚华胶布2Ts
4. 装好磁芯用6mm宽胶带2.5Ts固定磁芯,再沿线包方向包0.025*7.0mm宽背胶铜箔,铜箔短接后用 $\Phi 0.2mm$ 线接至Pin1.
5. 沿磁芯用20mm宽胶带包2Ts.
6. 用13mm宽胶带沿线包,包2Ts.
7. 剪掉5, 7-12脚,绕制完成去掉2脚。
8. 浸好漆后,套好变压器护套并整型!

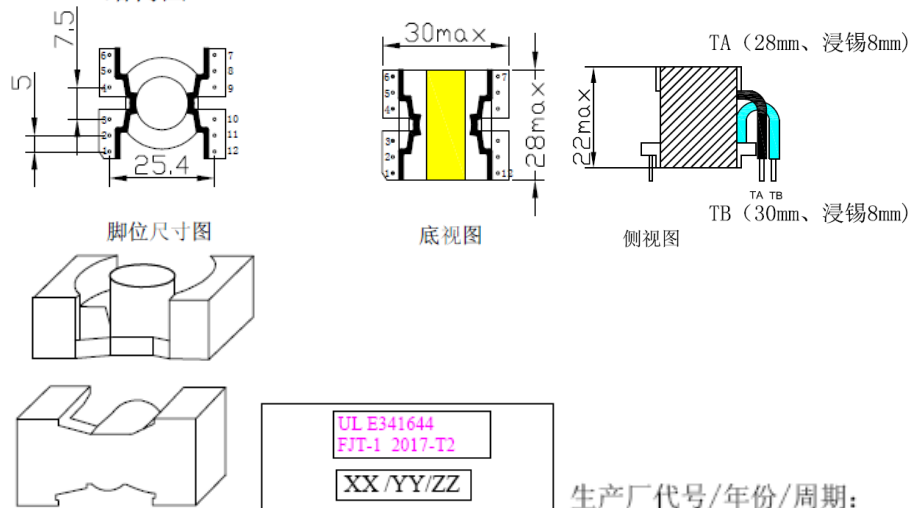
Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxyyy

Transformer: (2017-T2)



8. 结构图

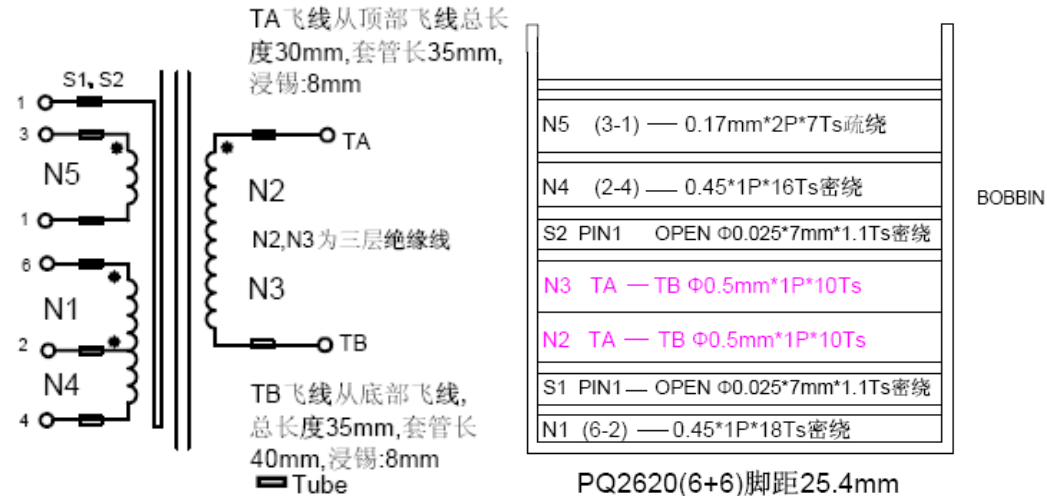


1. 使用PQ2620: CORE: 44材料
2. 使用PQ2620: 6+6PIN立式骨架排距25.4mm
3. 线层与层之间用9.5mm宽亚华胶布2Ts
4. 装好磁芯用6mm宽胶带2.5Ts固定磁芯,再沿线包方向包0.025*7.0mm宽背胶铜箔,铜箔短接后用 $\phi 0.2\text{mm}$ 线接至Pin1.
5. 沿磁芯用20mm宽胶带包2Ts.
6. 用13mm宽胶带沿线包,包2Ts.
7. 剪掉5, 7-12脚,绕制完成去掉2脚。
8. 浸好漆后,套好变压器护套并整型!

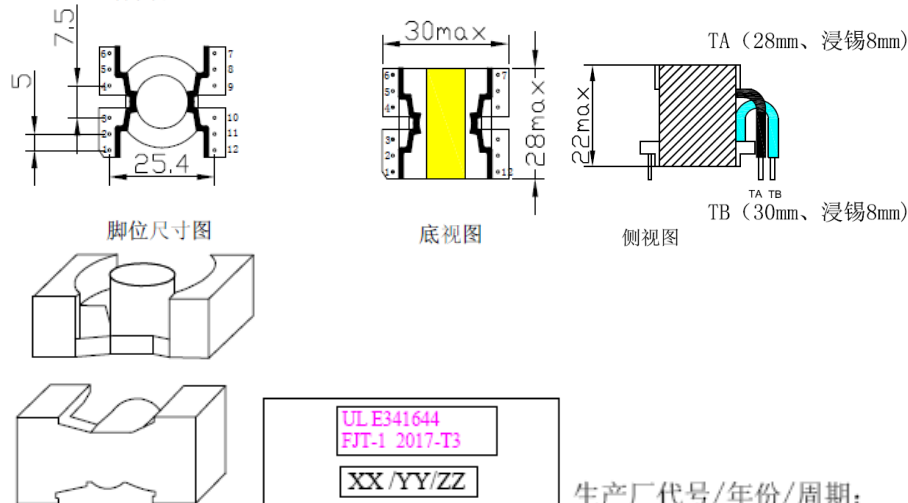
Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxyyy

Transformer: (2017-T3)



8. 结构图

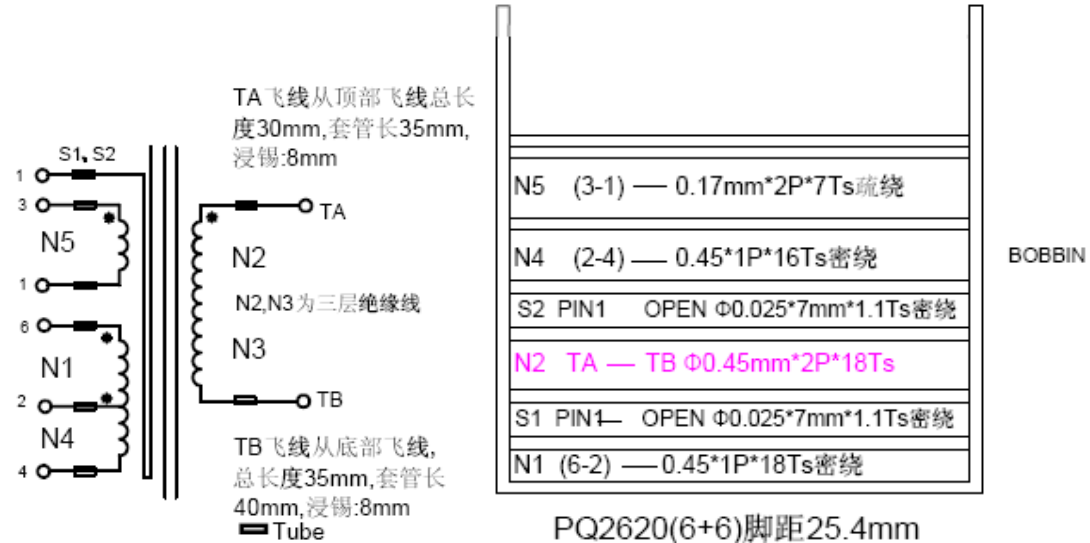


1. 使用PQ2620: CORE: 44材料
2. 使用PQ2620: 6+6PIN立式骨架排距25.4mm
3. 线层与层之间用9.5mm宽亚华胶布2Ts
4. 装好磁芯用6mm宽胶带2.5Ts固定磁芯,再沿线包方向包0.025*7.0mm宽背胶铜箔,铜箔短接后用 $\Phi 0.2\text{mm}$ 线接至Pin1.
5. 沿磁芯用20mm宽胶带包2Ts.
6. 用13mm宽胶带沿线包,包2Ts.
7. 剪掉5, 7-12脚,绕制完成去掉2脚。
8. 浸好漆后,套好变压器护套并整型!

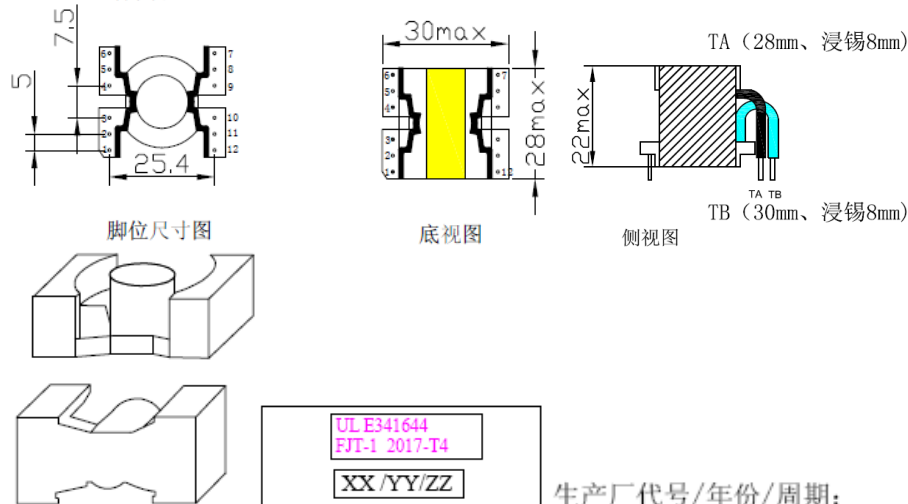
Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxyyy

Transformer: (2017-T4)



8. 结构图



1. 使用PQ2620: CORE: 44材料
2. 使用PQ2620: 6+6PIN立式骨架排距25.4mm
3. 线层与层之间用9.5mm宽亚华胶布2Ts
4. 装好磁芯用6mm宽胶带2.5Ts固定磁芯,再沿线包方向包0.025*7.0mm宽背胶铜箔,铜箔短接后用 $\Phi 0.2\text{mm}$ 线接至Pin1.
5. 沿磁芯用20mm宽胶带包2Ts.
6. 用13mm宽胶带沿线包,包2Ts.
7. 剪掉5,7-12脚,绕制完成去掉2脚。
8. 浸好漆后,套好变压器护套并整型!

Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxyyy



Figure 1. Overall view of unit



Figure 2. Overall view of unit (AC inlet: C14)

Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxyyy



Figure 3. Overall view of unit (AC inlet: C6)

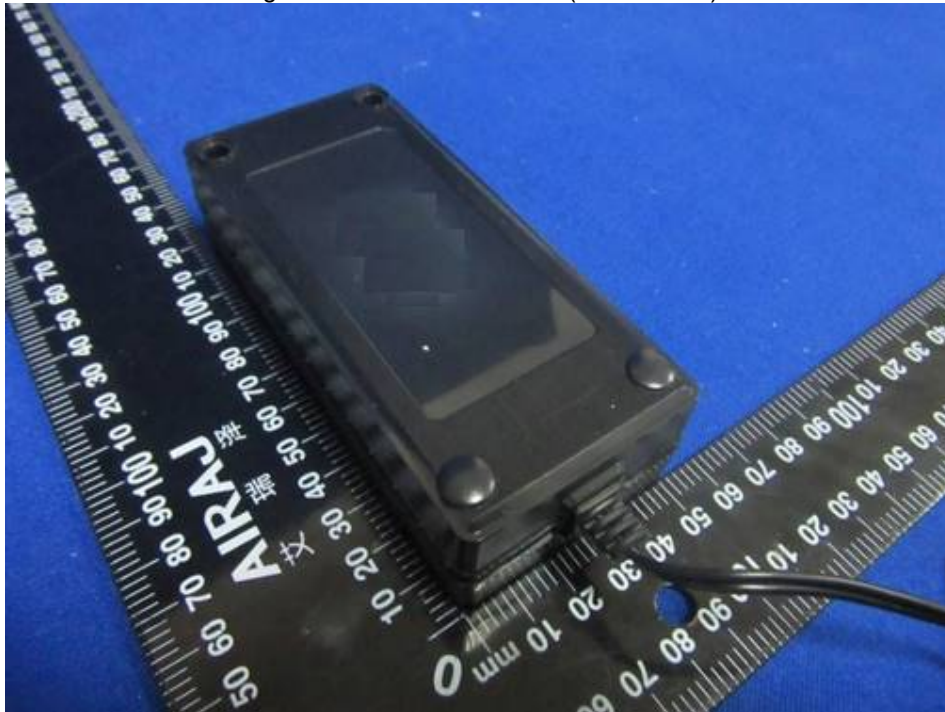


Figure 4. Overall view of unit

Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxyyy

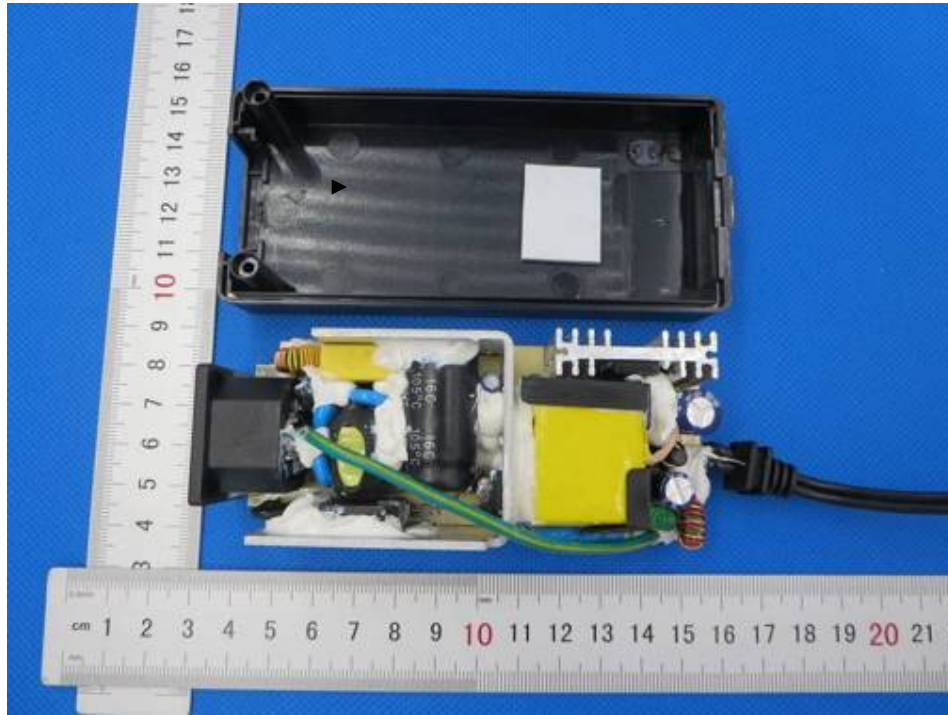


Figure 5. Internal view of unit

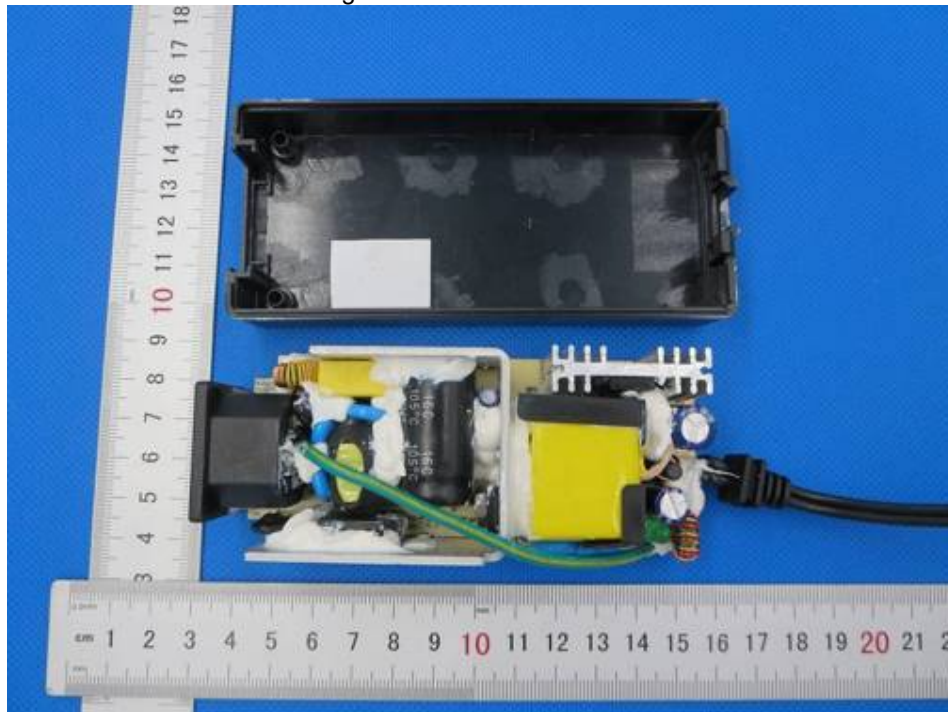


Figure 6. Internal view of unit

Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxyyy



Figure 7. Component side view of PCB

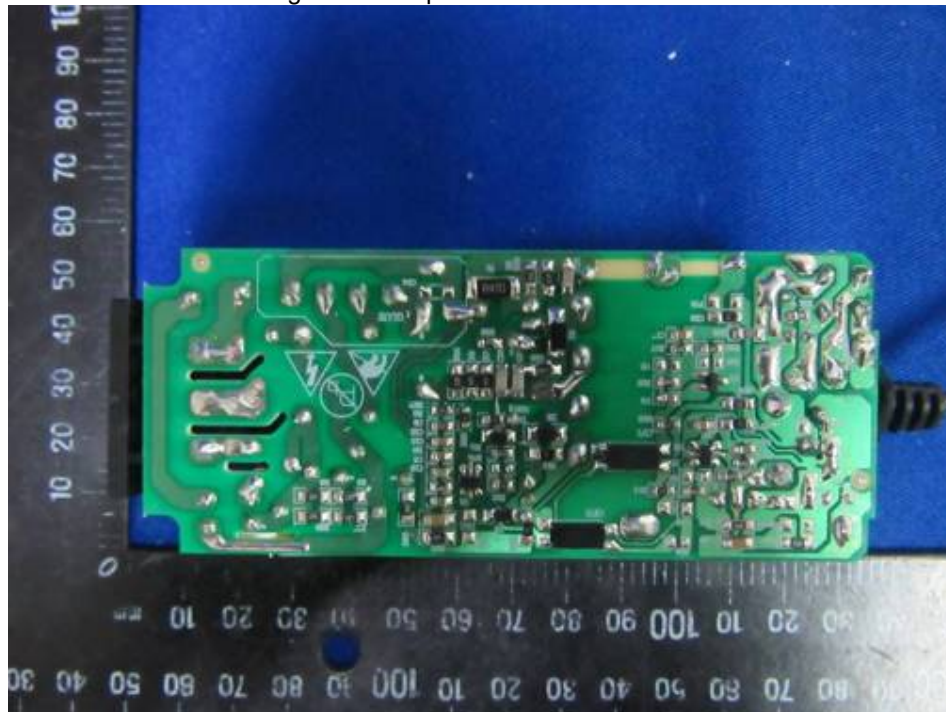


Figure 8. Trace side view of PCB

Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxyyy

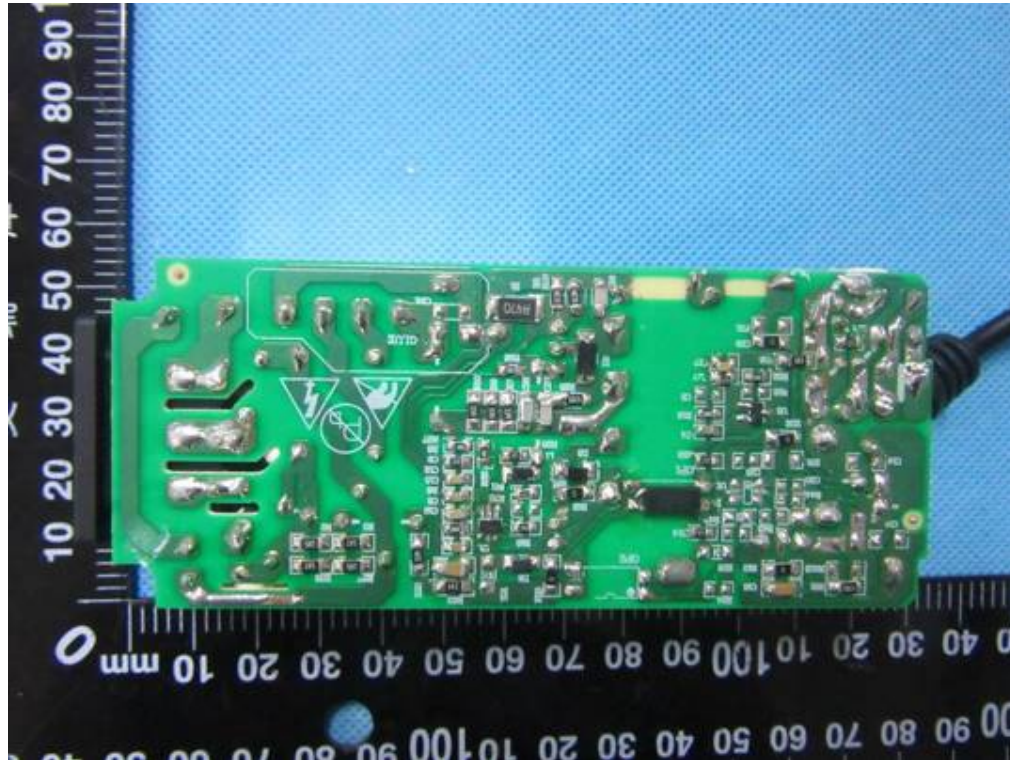


Figure 9. Trace side view of PCB (Single optocoupler)

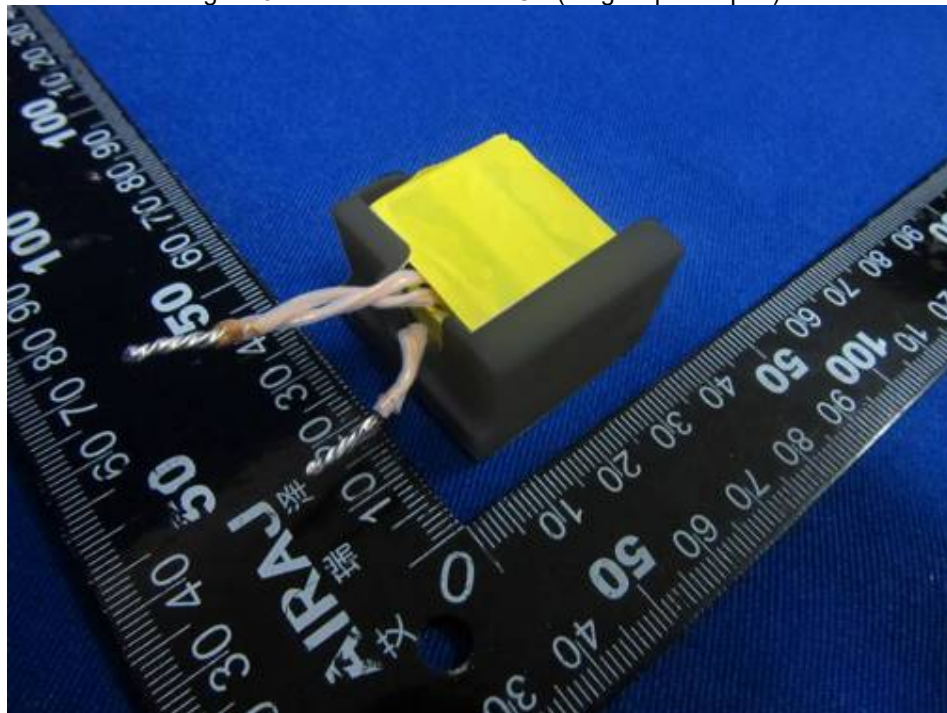


Figure 10. Overall view of transformer

Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxyyy

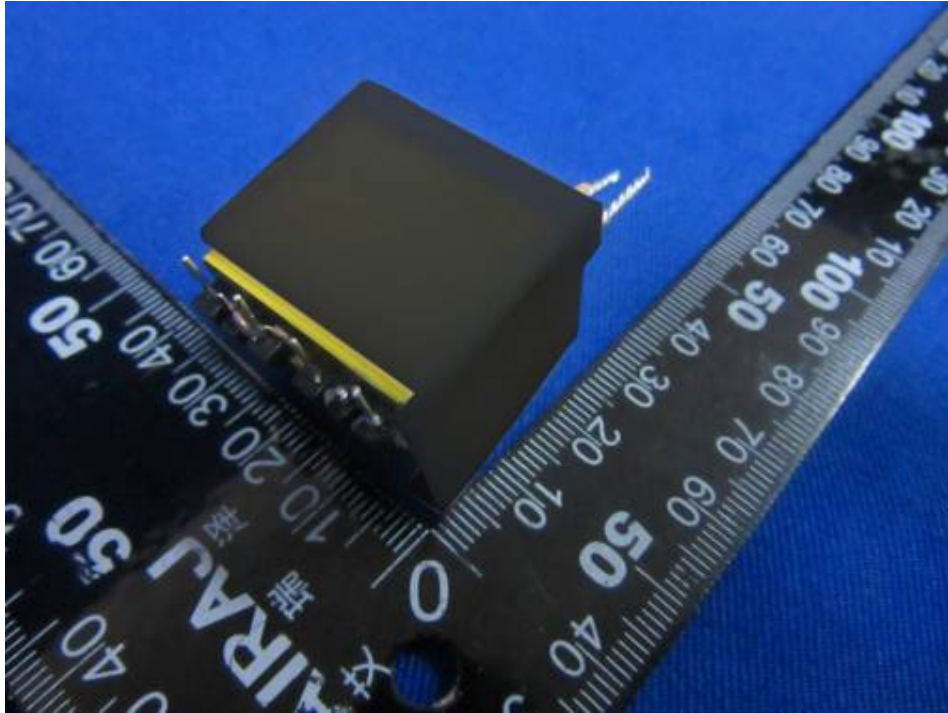


Figure 11. Overall view of transformer

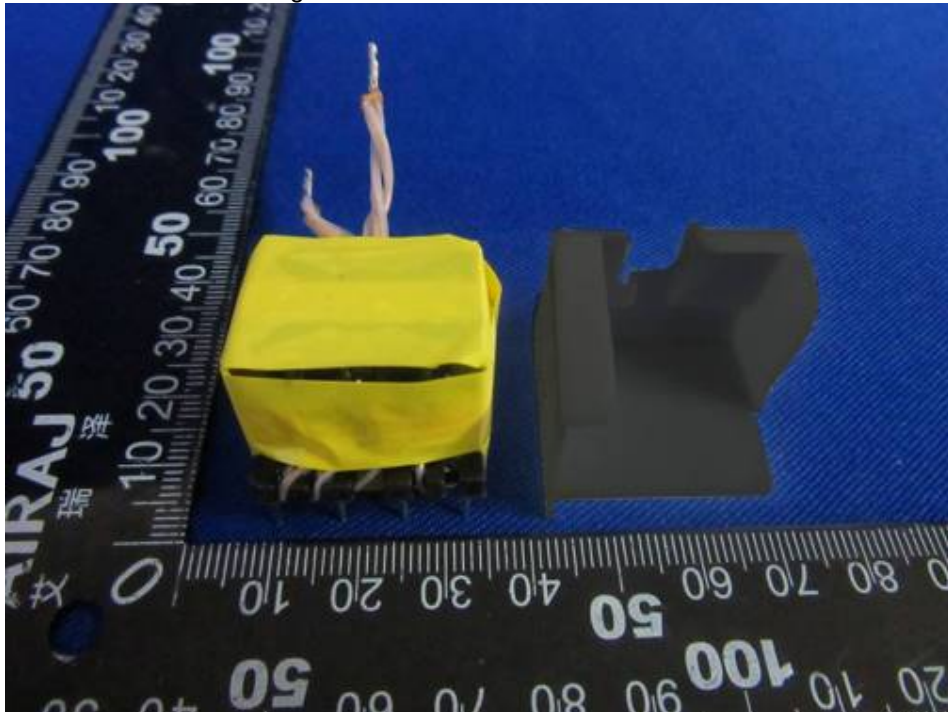


Figure 12. Detail view of transformer

Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxxxx

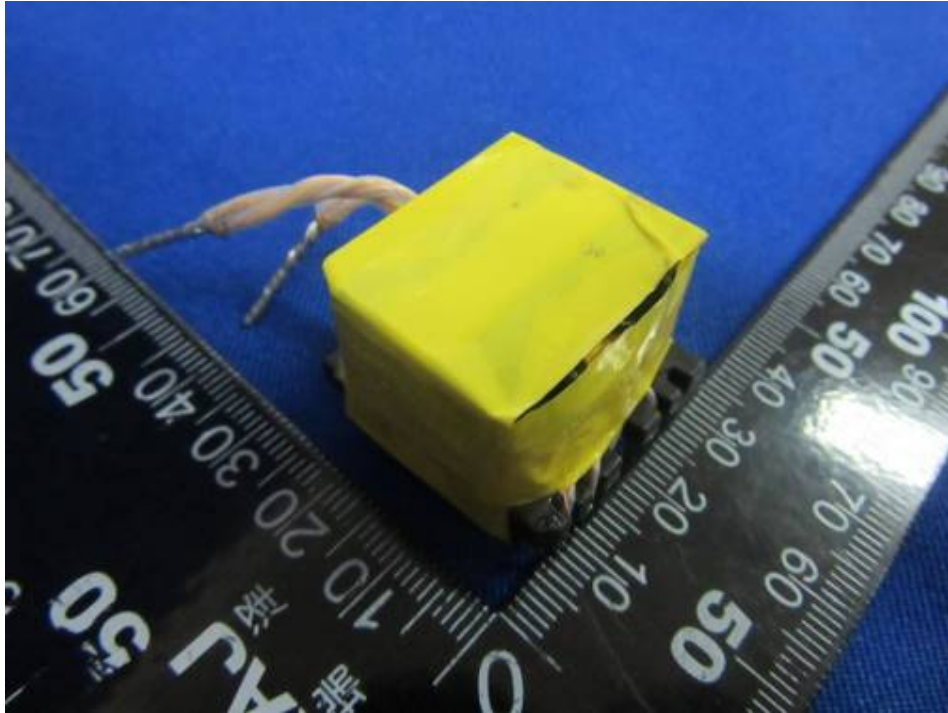


Figure 13. Detail view of transformer

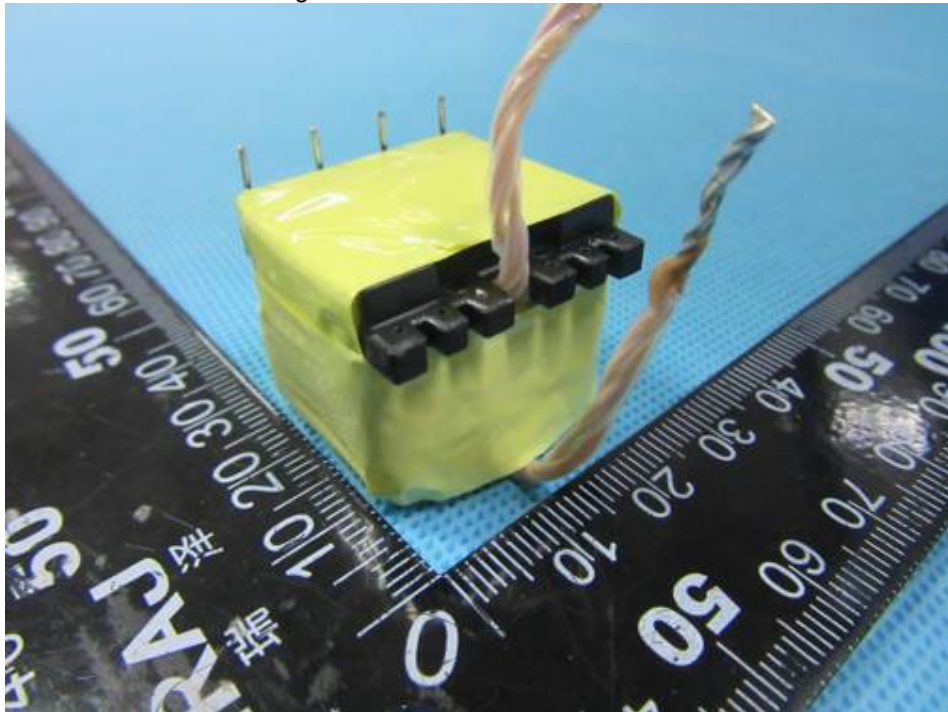


Figure 14. Detail view of transformer

Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxyyy

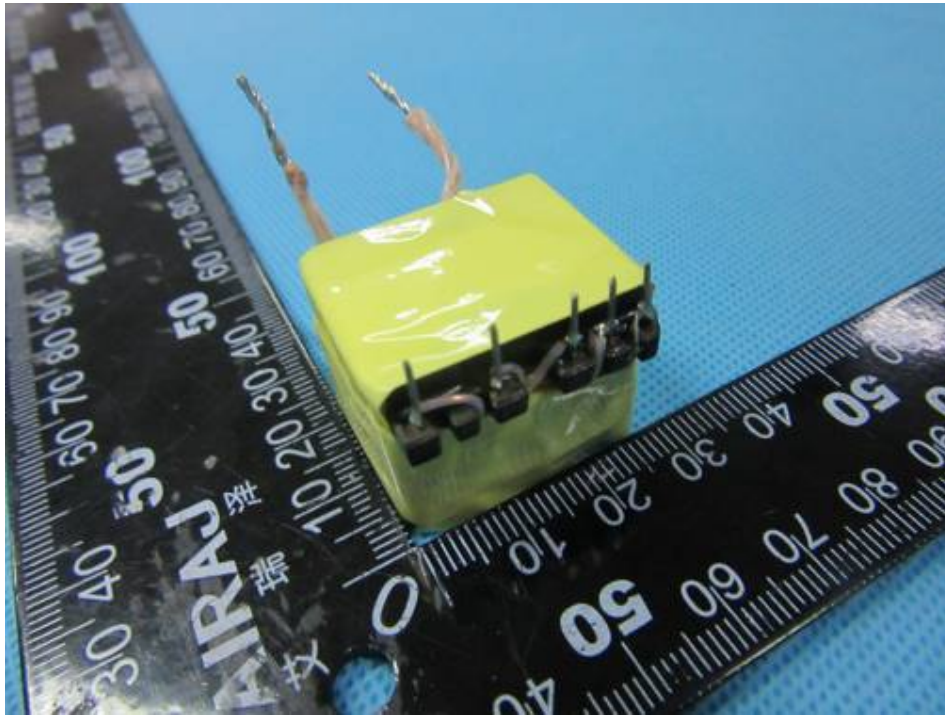


Figure 15. Detail view of transformer



Figure 16. Detail view of transformer

Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxyyy

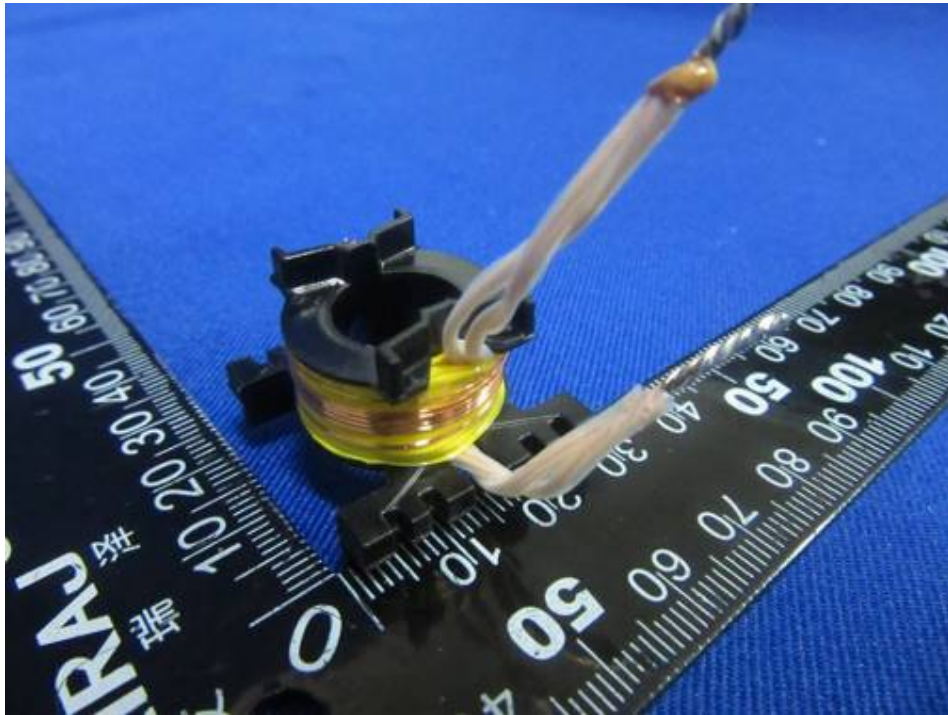


Figure 17. Detail view of transformer

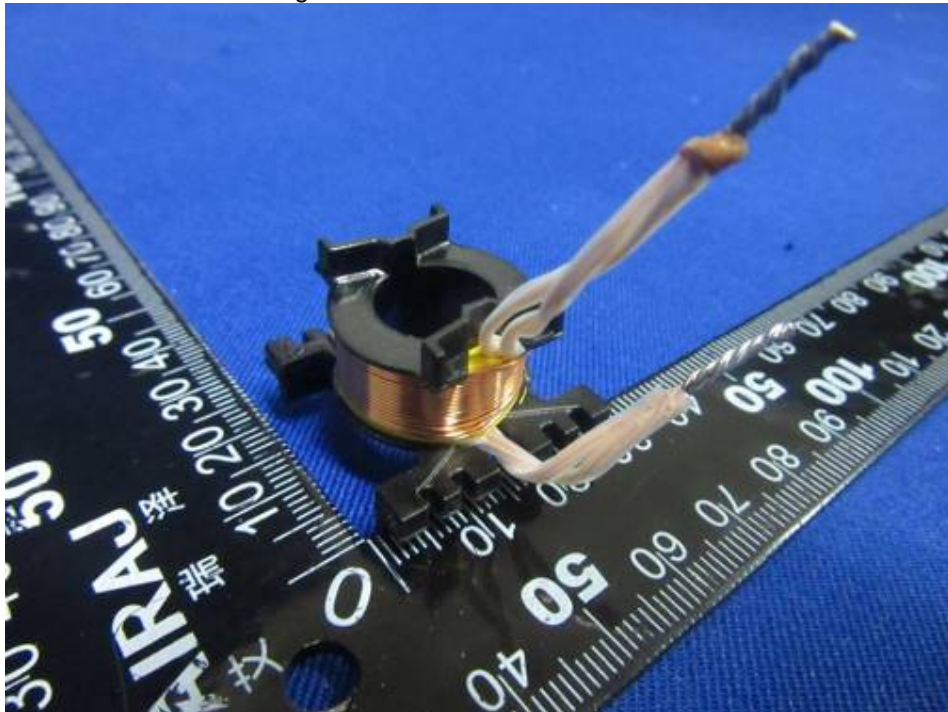


Figure 18. Detail view of transformer

Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxyyy

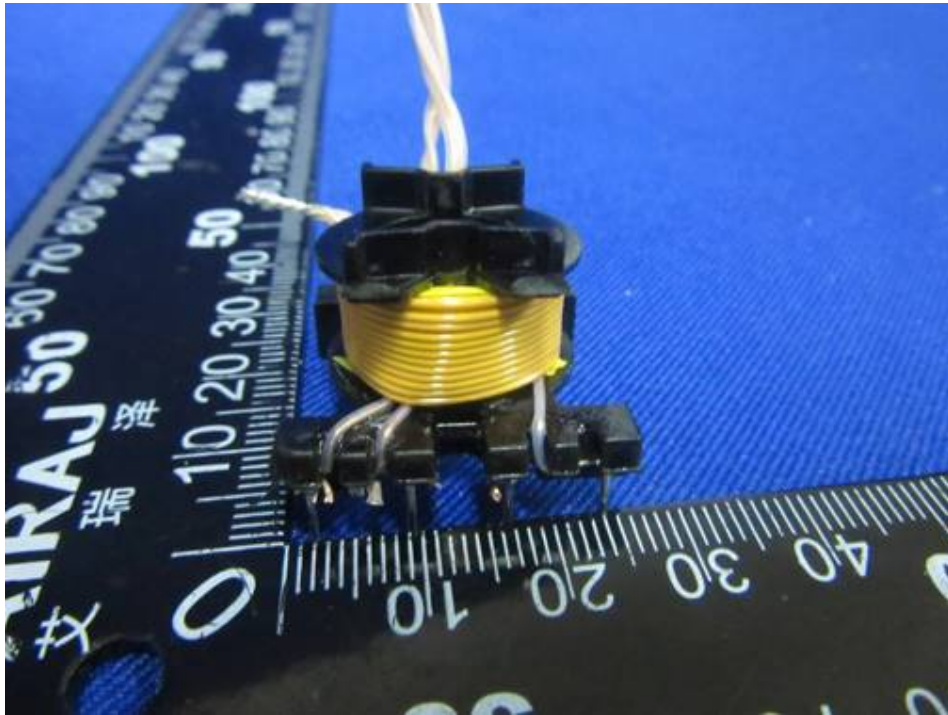


Figure 19. Detail view of transformer



Figure 20. Detail view of transformer

Product: SWITCHING ADAPTER

Type Designation: FJ-SW2017xxxxyyy

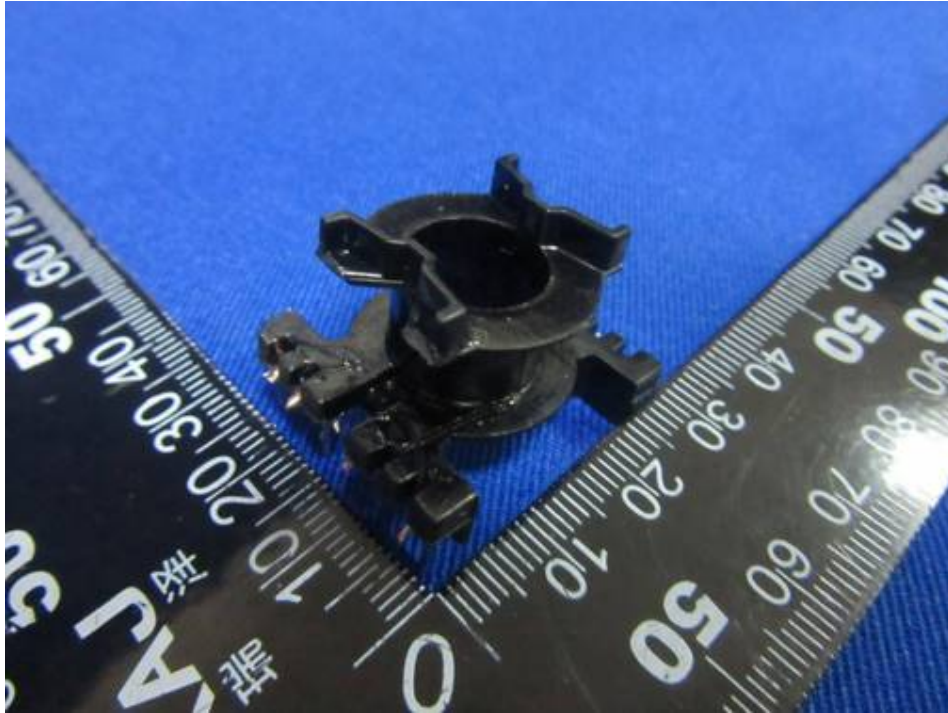


Figure 21. Detail view of transformer

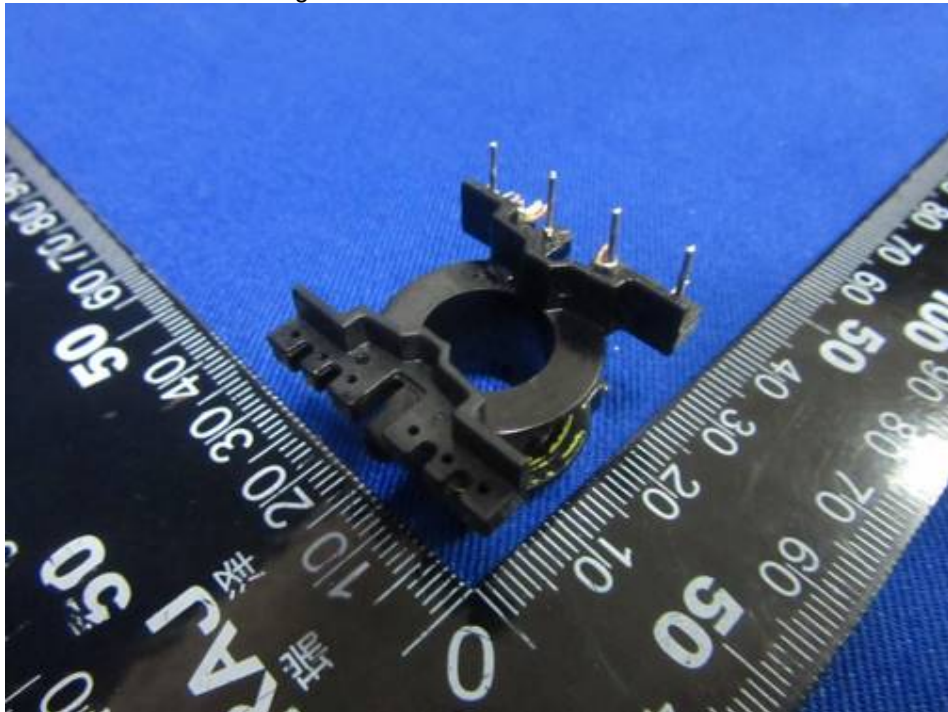


Figure 22. Detail view of transformer