



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.** .....: 2025112058855971-00

**Date of issue** .....: 2025-12-02

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**Name of Testing Laboratory preparing the Report**.....: **Keyway Testing Technology (Guangdong) Co., Ltd.**

**Applicant's name**.....: **Jiangxi Jian Aohai Technology Co.,Ltd.**

**Address** .....: Xietian, Quanjiang Town, Suichuan, Jian City, Jiangxi 343900  
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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**General disclaimer:**

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

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TRF No. IEC62368 1E

<b>List of Attachments (including a total number of pages in each attachment):</b> Attachment No. 1: 13 pages of National Differences. Attachment No. 2: 23 pages of Enclosures. Attachment No. 3: 9 pages of US plug test report.	
<b>Summary of testing:</b> See below for summary and applicable clauses. All tests were conducted under maximum normal load conditions as below, if not specified elsewhere. Same as equipment output rating.	
<b>Tests performed (name of test and test clause):</b> Steady force tests, 10N (4.4.3.2, T.2) Steady force tests, 100N (4.4.3.2, T.4) Drop tests (4.4.3.3, T.7) Stress relief test (4.4.3.8, T.8) Direct plug-in moment test (4.7.3) Steady-State Voltage and Current (5.2.2.2) Temperature measurements (5.4.1.4, 9.3, B.1.5, B.2.6) Determination of working voltage (5.4.1.8) Ball pressure test (5.4.1.10.3) Clearance and Creepage Distance Measurement (5.4.2, 5.4.3) Distance through insulation measurements (5.4.4.2) Separable thin sheet material (5.4.4.6.2) Solid insulation at frequencies >30 kHz (5.4.4.9) Antenna terminal insulation voltage surge (5.4.5) Humidity Conditioning (5.4.8) Electric Strength (5.4.9.1) Unearthed accessible parts (5.7.4) Power Measurements (6.2.2.2, 6.2.2.3) Input test (B.2.5) Abnormal Operating and Fault Conditions (B.3, B.4) Test for the permanence of markings (F.3.10) Transformer overload (G.5.3.3) Limited power source (Annex Q.1)  Unless otherwise specified, all tests were performed on model MC-601 which represent all models.	<b>Testing location:</b> Keyway Testing Technology (Guangdong) Co., Ltd. 21/F., Building 6, Dongyi Intelligent Equipment New Energy Vehicle Park, No.30, Tangxia District, Dongshen Road, Tangxia, Dongguan, Guangdong, China
<b>Summary of compliance with National Differences (List of countries addressed):</b> Canada and United States, JAPAN <input checked="" type="checkbox"/> The product fulfils the requirements of UL 62368-1:2019. <input checked="" type="checkbox"/> The product fulfils the requirements of CAN/CSA C22.2 No. 62368-1-19. <input checked="" type="checkbox"/> The product fulfils the requirements of J62368-1(2023).	

**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)

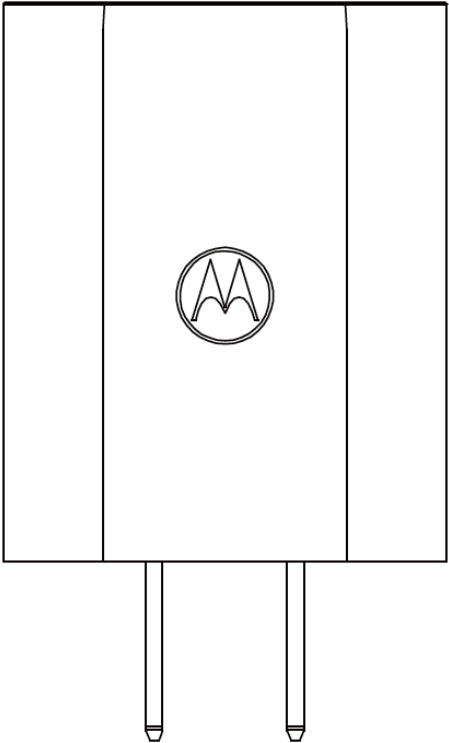
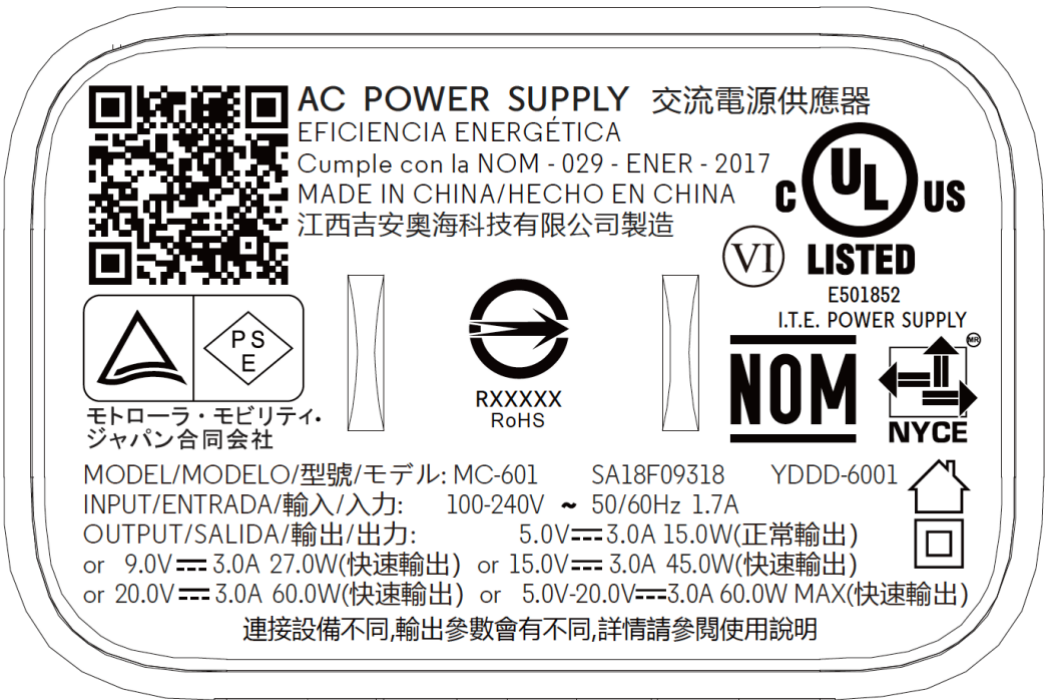
**Information on uncertainty of measurement:**

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.



<b>Test item particulars:</b>			
<b>Product group</b> .....	<input checked="" type="checkbox"/> end product	<input type="checkbox"/> built-in component	
<b>Classification of use by</b> .....	<input checked="" type="checkbox"/> Ordinary person	<input checked="" type="checkbox"/> Children likely present	
	<input checked="" type="checkbox"/> Instructed person		
	<input checked="" type="checkbox"/> Skilled person		
<b>Supply connection</b> .....	<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
<b>Supply tolerance</b> .....	<input checked="" type="checkbox"/> +10%/-10%		
	<input type="checkbox"/> +20%/-15%		
	<input type="checkbox"/> +      %/ -      %		
	<input type="checkbox"/> None		
<b>Supply connection – type</b> .....	<input checked="" type="checkbox"/> pluggable equipment type A -		
	<input type="checkbox"/> non-detachable supply cord		
	<input type="checkbox"/> appliance coupler		
	<input checked="" 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		
	<input type="checkbox"/> mating connector	<input type="checkbox"/> other:	
<b>Considered current rating of protective device</b> .....	<input checked="" type="checkbox"/> 20 A		
	Location:	<input checked="" type="checkbox"/> building	<input type="checkbox"/> equipment
	<input type="checkbox"/> N/A		
<b>Equipment mobility</b> .....	<input type="checkbox"/> movable	<input type="checkbox"/> hand-held	<input checked="" type="checkbox"/> transportable
	<input checked="" 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:		
<b>Overvoltage category (OVC)</b> .....	<input type="checkbox"/> OVC I	<input checked="" type="checkbox"/> OVC II	<input type="checkbox"/> OVC III
	<input type="checkbox"/> OVC IV	<input type="checkbox"/> other:	
<b>Class of equipment</b> .....	<input type="checkbox"/> Class I	<input checked="" type="checkbox"/> Class II	<input type="checkbox"/> Class III
	<input type="checkbox"/> Not classified	<input type="checkbox"/>	
<b>Special installation location</b> .....	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> restricted access area	
	<input type="checkbox"/> outdoor location	<input type="checkbox"/>	
<b>Pollution degree (PD)</b> .....	<input type="checkbox"/> PD 1	<input checked="" type="checkbox"/> PD 2	<input type="checkbox"/> PD 3
<b>Manufacturer's specified T<sub>ma</sub></b> .....	45°C	<input type="checkbox"/> Outdoor: minimum	°C
<b>IP protection class</b> .....	<input checked="" type="checkbox"/> IPX0	<input type="checkbox"/> IP__	
<b>Power systems</b> .....	<input checked="" type="checkbox"/> TN	<input type="checkbox"/> TT	<input type="checkbox"/> IT -      V <sub>L-L</sub>
	<input type="checkbox"/> not AC mains		
<b>Altitude during operation (m)</b> .....	<input type="checkbox"/> 2000 m or less	<input checked="" type="checkbox"/> 5000 m	
<b>Altitude of test laboratory (m)</b> .....	<input checked="" type="checkbox"/> 2000 m or less	<input type="checkbox"/> m	
<b>Mass of equipment (kg)</b> .....	Approx. 0.072kg.		

<b>Possible test case verdicts:</b> - 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)	
<b>Testing:</b> Date of receipt of test item .....: 2025-11-07 Date (s) of performance of tests .....: 2025-11-07 to 2025-11-27	
<b>General remarks:</b> "(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.	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC60068-2-1:</b>	
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"/> <b>Yes</b> <input type="checkbox"/> <b>Not applicable</b>
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies).....:</b> <div style="margin-left: 20px;">         1) Dongguan Aohai Technology Co.,Ltd.          Zhenlong East Rd No.6, Jiaoyitang, Tangxia Town,          Dongguan, Guangdong 523723 China          2) Dongguan Aohai Technology Co., Ltd. Third Branch          No.27, Shaxin Road, Tangxia Town, Dongguan,          Guangdong, P. R. China, 523723          3) PT AOHAİ TECHNOLOGY INDONESIA          Kawasan Industri Tunas 1 No.C, Belian Batam Kota,          Kota Batam Kepulauan Riau, Indonesia.          4) Jiangxi Jian Aohai Technology Co.,Ltd.          Xietian, Quanjian Town, Suichuan, Jian City, Jiangxi          343900 China          5) Xihi Technology Private Limited          J - 46 or J - 53, Sector-63, Noida, Gautam Buddha          Nagar Uttar Pradesh 201301, India       </div>	
<b>General product information and other remarks:</b> <ol style="list-style-type: none"> <li>1. This AC POWER SUPPLY is class II construction, designed to power supply for audio/video, information and communication technology equipment, for indoor use only.</li> <li>2. The maximum operating ambient temperature is 45°C.</li> <li>3. The top enclosure is sealed with bottom enclosure by ultrasonic welding.</li> <li>4. The equipment intended to be used up to 5000m above sea level, the factor (1.48) given in table 16 of IEC 62368-1 was considered.</li> <li>5. This AC POWER SUPPLY maximum continuous output power is 33W. The AC POWER SUPPLY working load with 20.0VDC, 3.0A for 5 minutes, then reduced to 20.0VDC, 2.25A for 5 minutes, then</li> </ol>	

reduced to 20.0VDC, 1.67A for long working; or working load with 15.0VDC, 3.0A for 10 minutes, then reduced to 15.0VDC, 2.2A for long working; or load with 11.0VDC, 3.0A for long working. The other outputs could with normal maximum load condition, refer to appended table 5.4.1.4, 9.3, B.1.5, B.2.6 for details.

6. Except for quick charge, USB-C output is 5Vdc only.

**Model Differences:**

All models are identical to each other except for model number.

**Additional application considerations – (Considerations used to test a component or sub-assembly)**

The product was investigated to the following additional standards:

UL 1310 Class 2 Power Units under UL 62368-1 clause 4.7 national difference requirements:

- (1) Direct Plug In Equipment-Moment Test;
- (2) Direct Plug-In Blade Securement Test;
- (3) Direct Plug-In Security Of Input Contacts;
- (4) Direct Plug-In Rod Pressure Test;
- (5) Direct Plug-In Resistance To Crushing;
- (6) Weight and moment determination have been conducted;

There are no mechanical assembly damaged. The blade dimension was evaluated to be complied with NEMA configurations in accordance with Wiring Devices - Dimensional Specifications, ANSI/NEMA WD6.)



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: The circuit connected to AC mains (Except output circuits)	Ordinary, Instructed, Skilled	N/A	N/A	Enclosure See 5.4.2, 5.4.3, 5.5.3, 5.4.4 and 5.5.4
ES1: Output circuits	Ordinary, Instructed, Skilled	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 <sup>st</sup> S	2 <sup>nd</sup> S
PS3: All circuits except for output circuits	PCB	See 6.3	V-1 or better	N/A
PS2: secondary part circuits	Plastic materials not part of PS3 circuit	See 6.3	V-2 or better	N/A
PS3: All circuits	The other components/materials	See 6.3	See 6.4.6	N/A
PS2: secondary part circuits	The other components/materials	See 6.3	See 6.4.5	N/A
PS3: All circuits except for output circuits	Enclosure	See 6.3	V-0	N/A
PS3: All circuits except for output circuits	Input wire	See 6.3	See 6.5	N/A
PS2: secondary part circuits	Output circuit / port	See 6.3	See 6.4.5	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, Instructed, Skilled	N/A	N/A	N/A
MS1: Mass of the unit	Ordinary, Instructed, Skilled	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/circuits	Ordinary, Instructed, Skilled	N/A	N/A	Enclosure

TS1: External surface	Ordinary, Instructed, Skilled	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
N/A	N/A	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

(refer to OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS)

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4</b>	<b>GENERAL REQUIREMENTS</b>		P
4.1.1	Acceptance of materials, components and subassemblies	(See appended table 4.1.2)	P
4.1.2	Use of components	(See appended table 4.1.2) 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 limiting the outputs to fulfill ES1 and protection in regard to risk of spread of fire, mechanical and thermal burn injury considered.	P
4.1.4	Specified ambient temperature for outdoor use (°C) .....:		N/A
4.1.5	Constructions and components not specifically covered		N/A
4.1.8	Liquids and liquid filled components (LFC)		N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness		P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Clause T.2, T.4)	P
4.4.3.3	Drop tests	(See Clause T.7)	P
4.4.3.4	Impact tests		N/A
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		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	Considered	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	All safeguards remain effective	P
4.4.4	Displacement of a safeguard by an insulating liquid		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.4.5	Safety interlocks		N/A
<b>4.5</b>	<b>Explosion</b>		P
4.5.1	General		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
<b>4.6</b>	<b>Fixing of conductors</b>		P
	Fix conductors not to defeat a safeguard	The internal wire fixed by riveting, so that a loosen is not likely.	P
	Compliance is checked by test.....:	(See Clause T.2)	P
<b>4.7</b>	<b>Equipment for direct insertion into mains socket-outlets</b>		P
4.7.2	Mains plug part complies with relevant standard ....:	The US plug according to UL 1310 Class 2 Power Units (Mechanical Requirements on blades Only); The blade dimension was evaluated to be complied with NEMA configurations in accordance with Wiring Devices- Dimensional Specifications, ANSI/NEMA WD6. Japan plug according to JIS C 8303: 2007.	P
4.7.3	Torque (Nm) .....	Max. 0.026Nm	P
<b>4.8</b>	<b>Equipment containing coin/button cell batteries</b>		N/A
4.8.1	General	No coin/button batteries.	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
<b>4.9</b>	<b>Likelihood of fire or shock due to entry of conductive object</b>		P
<b>4.10</b>	<b>Component requirements</b>		P

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

4.10.1	Disconnect Device	(See Annex L)	P
4.10.2	Switches and relays		N/A

<b>5</b>	<b>ELECTRICALLY-CAUSED INJURY</b>		P
<b>5.2</b>	<b>Classification and limits of electrical energy sources</b>		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 .....		N/A
5.2.2.4	Single pulse limits .....		N/A
5.2.2.5	Limits for repetitive pulses.....		N/A
5.2.2.6	Ringing signals	No ringing signals.	N/A
5.2.2.7	Audio signals	No audio signals.	N/A
<b>5.3</b>	<b>Protection against electrical energy sources</b>		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	Limiting component: U2 After T1 pin 5 to 6, voltage is 46.8Vpk (ES1) (for output 20.0Vdc, 3.0A) (See appended table 5.2)	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 can be accessed for this product.	P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements		P
	Test with test probe from Annex V	No openings.	—
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		N/A
<b>5.4</b>	<b>Insulation materials and requirements</b>		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Material is non-hygroscopic	(See sub-clause 5.4.8)	P
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	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage .....	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		P
5.4.1.10.2	Vicat test .....		N/A
5.4.1.10.3	Ball pressure test .....	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		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		P
	Temporary overvoltage .....	2000 V <sub>peak</sub>	—
5.4.2.3	Procedure 2 for determining clearance		P
5.4.2.3.2.2	a.c. mains transient voltage .....	2500 V <sub>peak</sub>	—
5.4.2.3.2.3	d.c. mains transient voltage .....	No connections to d.c. mains.	—
5.4.2.3.2.4	External circuit transient voltage .....	No connections to external circuit with transient voltage.	—
5.4.2.3.2.5	Transient voltage determined by measurement .....	Option was not used.	—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test .....		N/A
5.4.2.5	Multiplication factors for clearances and test voltages .....	1.48	P
5.4.2.6	Clearance measurement .....	(See appended table 5.4.2)	P
5.4.3	Creepage distances		P
5.4.3.1	General		P
5.4.3.3	Material group .....	IIIb	—
5.4.3.4	Creepage distances measurement .....	(See appended table 5.4.3)	P
5.4.4	Solid insulation		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		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.4	Solid insulation in semiconductor devices		P
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) .....		N/A
5.4.4.6.3	Non-separable thin sheet material		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	Approved triple insulation wire used	P
5.4.4.9	Solid insulation at frequencies >30 kHz, $E_P$ , $K_R$ , $d$ , $V_{PW}$ (V).....		N/A
	Alternative by electric strength test, tested voltage (V), $K_R$ .....	(See appended Tables 5.4.4.9 and 5.4.9)	P
5.4.5	Antenna terminal insulation		P
5.4.5.1	General		P
5.4.5.2	Voltage surge test	Surge test with 50 discharges at a maximum rate of 12/min from a 1nF capacitor charged to 10kV performed. Measured insulation resistance between mains supply to output terminals after the surge test, see below for details.	P
5.4.5.3	Insulation resistance ( $M\Omega$ ) .....	Between AC plug and output terminals: >500 $M\Omega$ .	P
	Electric strength test.....		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%), temperature ( $^{\circ}C$ ), duration (h) .....	95%, 40 $^{\circ}C$ , 120 hours	—
5.4.9	Electric strength test	Immediately following the temperature test in 5.4.1.4	P
5.4.9.1	Test procedure for type test of solid insulation .....	(See appended table 5.4.9)	P



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Clause	Requirement + Test	Result - Remark	Verdict
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from 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
5.4.10.3	Verification for insulation breakdown for impulse test.....		N/A
5.4.11	Separation between external circuits and earth		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		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 $\Delta U_{sp}$ .....		—
	Max increase due to ageing $\Delta U_{sa}$ .....		—
5.4.11.3	Test method and compliance .....		N/A
5.4.12	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
<b>5.5</b>	<b>Components as safeguards</b>		P
5.5.1	General		P
5.5.2	Capacitors and RC units	Approved Y capacitor used, see appended table 4.1.2. 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 .....		N/A
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See sub-clause 5.4 or Clause G.12)	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPDs		N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable .....		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA) .....		—
<b>5.6</b>	<b>Protective conductor</b>	Class II equipment	N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm <sup>2</sup> ) .....		—
	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		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm <sup>2</sup> ).....		—
5.6.4.2	Protective current rating (A) .....		N/A
5.6.5	Terminals for protective conductors		N/A
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		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method.....		N/A
5.6.6.3	Resistance ( $\Omega$ ) or voltage drop .....		N/A
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm <sup>2</sup> ) .....		N/A
	Class II with functional earthing marking .....		N/A
	Appliance inlet cl & cr (mm) .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
<b>5.7</b>	<b>Prospective touch voltage, touch current and protective conductor current</b>		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	(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		P
5.7.4	Unearthed accessible parts.....:	(See appended table 5.7.4)	P
5.7.5	Earthed accessible conductive parts.....:		N/A
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		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		N/A
	a) Equipment connected to earthed external circuits, current (mA) .....		N/A
	b) Equipment connected to unearthed external circuits, current (mA) .....		N/A
<b>5.8</b>	<b>Backfeed safeguard in battery backed up supplies</b>		N/A
	Mains terminal ES.....:		N/A
	Air gap (mm) .....		N/A

<b>6</b>	<b>ELECTRICALLY- CAUSED FIRE</b>		P
<b>6.2</b>	<b>Classification of PS and PIS</b>		P
6.2.2	Power source circuit classifications.....:	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		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
<b>6.3</b>	<b>Safeguards against fire under normal operating and abnormal operating conditions</b>		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 .....	(See appended table B.1.5 and B.3)	P
	Combustible materials outside fire enclosure.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
<b>6.4</b>	<b>Safeguards against fire under single fault conditions</b>		<b>P</b>
6.4.1	Safeguard method	Control of fire spread.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		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
6.4.5	Control of fire spread in PS2 circuits	Approved fire enclosure is used.	P
6.4.5.2	Supplementary safeguards	<p>Compliance detailed as follows:</p> <ul style="list-style-type: none"> <li>- Printed board: min. V-1</li> <li>- Components other than PCB and wires are: <ul style="list-style-type: none"> <li>- mounted on PCB rated V-1 min, and/or</li> <li>- made of V-2/VTM-2 or better.</li> </ul> </li> <li>- Isolating transformer: complying with G.5.3.</li> <li>- Wire insulation: complying with Clause 6.5. The input wire comply with UL 758 standard, which test method and testing condition equal to IEC/EN 60695-11-21.</li> <li>- All other components: at least V-2 except for parts mounted on min. V-1 material or small parts of combustible material) with mass less than 4g) or components complying to relevant IEC standard.</li> <li>- Approved V-0 fire enclosure used.</li> </ul> <p>(See appended tables 4.1.2 and Annex G for detail)</p>	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.6	Control of fire spread in PS3 circuits	<p>Compliance detailed as follows:</p> <ul style="list-style-type: none"> <li>- Printed board: min. V-1</li> <li>- Components other than PCB and wires are: <ul style="list-style-type: none"> <li>- mounted on PCB rated V-1 min, and/or</li> <li>- made of V-2/VTM-2 or better.</li> </ul> </li> <li>- Isolating transformer: complying with G.5.3.</li> <li>- Wire insulation: complying with Clause 6.5. The input wire comply with UL 758 standard, which test method and testing condition equal to IEC/EN 60695-11-21.</li> <li>- All other components: at least V-2 except for parts mounted on min. V-1 material or small parts of combustible material) with mass less than 4g) or components complying to relevant IEC standard.</li> <li>- Approved V-0 fire enclosure used.</li> </ul> <p>(See appended tables 4.1.2 and Annex G for detail)</p>	P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.2	Fire enclosure and fire barrier material properties	V-0 fire enclosure used.	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	V-0 fire enclosure used.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	No opening and fire barrier	P
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties	No openings.	N/A
	Openings dimensions (mm) .....:		N/A
6.4.8.3.4	Bottom openings and properties	No openings.	N/A
	Openings dimensions (mm) .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Flammability tests for the bottom of a fire enclosure		N/A
	Instructional Safeguard .....		N/A
6.4.8.3.5	Side openings and properties	No openings.	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.....	Enclosure is V-0 material.	P
6.4.9	Flammability of insulating liquid .....		N/A
<b>6.5</b>	<b>Internal and external wiring</b>		P
6.5.1	General requirements	Input wire having rating VW-1 are considered to meet IEC/TS 60695-11-21.	P
6.5.2	Requirements for interconnection to building wiring .....		N/A
6.5.3	Internal wiring size (mm <sup>2</sup> ) for socket-outlets .....		N/A
<b>6.6</b>	<b>Safeguards against fire due to the connection to additional equipment</b>		P

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

<b>8</b>	<b>MECHANICALLY-CAUSED INJURY</b>		P
<b>8.2</b>	<b>Mechanical energy source classifications</b>		P
<b>8.3</b>	<b>Safeguards against mechanical energy sources</b>		P
<b>8.4</b>	<b>Safeguards against parts with sharp edges and corners</b>		P
8.4.1	Safeguards		P
	Instructional Safeguard .....		N/A
8.4.2	Sharp edges or corners	Equipment mass, edges and corners are classed as MS1.	P
<b>8.5</b>	<b>Safeguards against moving parts</b>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 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
<b>8.6</b>	<b>Stability of equipment</b>		N/A
8.6.1	General	MS1	N/A
	Instructional safeguard.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
<b>8.7</b>	<b>Equipment mounted to wall, ceiling or other structure</b>		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
<b>8.8</b>	<b>Handles strength</b>		N/A
8.8.1	General		N/A
8.8.2	Handle strength test		N/A
	Number of handles.....		—
	Force applied (N) .....		—
<b>8.9</b>	<b>Wheels or casters attachment requirements</b>		N/A
8.9.2	Pull test		N/A
<b>8.10</b>	<b>Carts, stands and similar carriers</b>		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
	Force applied (N) .....		—
8.10.6	Thermoplastic temperature stability		N/A
<b>8.11</b>	<b>Mounting means for slide-rail mounted equipment (SRME)</b>		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	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
<b>8.12</b>	<b>Telescoping or rod antennas</b>		N/A
	Button/ball diameter (mm).....		—

<b>9</b>	<b>THERMAL BURN INJURY</b>		P
<b>9.2</b>	<b>Thermal energy source classifications</b>		P
<b>9.3</b>	<b>Touch temperature limits</b>		P
9.3.1	Touch temperatures of accessible parts .....	(See appended table 5.4.1.4)	P
9.3.2	Test method and compliance		P
<b>9.4</b>	<b>Safeguards against thermal energy sources</b>		P
<b>9.5</b>	<b>Requirements for safeguards</b>		P
9.5.1	Equipment safeguard		P
9.5.2	Instructional safeguard .....		N/A
<b>9.6</b>	<b>Requirements for wireless power transmitters</b>		N/A
9.6.1	General		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance .....		N/A

<b>10</b>	<b>RADIATION</b>		N/A
<b>10.2</b>	<b>Radiation energy source classification</b>		N/A
10.2.1	General classification		N/A
	Lasers .....		—
	Lamps and lamp systems .....		—
	Image projectors .....		—
	X-Ray .....		—
	Personal music player .....		—
<b>10.3</b>	<b>Safeguards against laser radiation</b>		N/A
	The standard(s) equipment containing laser(s) comply .....		N/A
<b>10.4</b>	<b>Safeguards against optical radiation from lamps and lamp systems (including</b>		N/A


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Clause	Requirement + Test	Result - Remark	Verdict
	<b>LED types)</b>		
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
<b>10.5</b>	<b>Safeguards against X-radiation</b>		N/A
10.5.1	Requirements		N/A
	Instructional safeguard for skilled persons.....:		—
10.5.3	Maximum radiation (pA/kg).....:		—
<b>10.6</b>	<b>Safeguards against acoustic energy sources</b>		N/A
10.6.1	General		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
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 $\geq 100$ 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

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Clause	Requirement + Test	Result - Remark	Verdict
	Max. acoustic output $L_{Aeq,T}$ , dB(A).....:		N/A

<b>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		P
<b>B.1</b>	<b>General</b>		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
<b>B.2</b>	<b>Normal operating conditions</b>		P
B.2.1	General requirements.....:	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers.....:		N/A
B.2.3	Supply voltage and tolerances	Rated input: 100-240V~; $\pm 10\%$ tolerances were considered.	P
B.2.5	Input test.....:	(See appended table B.2.5)	P
<b>B.3</b>	<b>Simulated abnormal operating conditions</b>		P
B.3.1	General		P
B.3.2	Covering of ventilation openings		N/A
	Instructional safeguard.....:		N/A
B.3.3	DC mains polarity test		N/A
B.3.4	Setting of voltage selector		N/A
B.3.5	Maximum load at output terminals	(See appended table B.3 and B.4)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Audio amplifier abnormal operating conditions		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions.....:	(See appended table B.3 and B.4)	P
<b>B.4</b>	<b>Simulated single fault conditions</b>		P
B.4.1	General		P
B.4.2	Temperature controlling device		N/A
B.4.3	Blocked motor test		N/A
B.4.4	Functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3 and B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3 and B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.3 and B.4)	P
B.4.6	Short circuit or disconnection of passive components	(See appended table B.3 and B.4)	P
B.4.7	Continuous operation of components		N/A
B.4.8	Compliance during and after single fault conditions .....	(See appended table B.3 and B.4)	P
B.4.9	Battery charging and discharging under single fault conditions		N/A
<b>C</b>	<b>UV RADIATION</b>		N/A
<b>C.1</b>	<b>Protection of materials in equipment from UV radiation</b>		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
<b>C.2</b>	<b>UV light conditioning test</b>		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
<b>D</b>	<b>TEST GENERATORS</b>		P
<b>D.1</b>	<b>Impulse test generators</b>		N/A
<b>D.2</b>	<b>Antenna interface test generator</b>		P
<b>D.3</b>	<b>Electronic pulse generator</b>		N/A
<b>E</b>	<b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>		N/A
<b>E.1</b>	<b>Electrical energy source classification for audio signals</b>		N/A
	Maximum non-clipped output power (W).....		—
	Rated load impedance ( $\Omega$ ) .....		—
	Open-circuit output voltage (V).....		—
	Instructional safeguard .....		—
<b>E.2</b>	<b>Audio amplifier normal operating conditions</b>		N/A
	Audio signal source type .....		—
	Audio output power (W).....		—
	Audio output voltage (V) .....		—
	Rated load impedance ( $\Omega$ ) .....		—
	Requirements for temperature measurement		N/A
E.3	Audio amplifier abnormal operating conditions		N/A

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Clause	Requirement + Test		Verdict
<b>F</b>	<b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b>		P
<b>F.1</b>	<b>General</b>		P
	Language .....	English	—
<b>F.2</b>	<b>Letter symbols and graphical symbols</b>		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		P
<b>F.3</b>	<b>Equipment markings</b>		P
F.3.1	Equipment marking locations		P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification .....	See copy of marking plate	P
F.3.2.2	Model identification .....	See copy of marking plate	P
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		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 .....	100-240V~	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		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings .....	No appliance outlet provided.	N/A
F.3.5.2	Switch position identification marking .....		N/A
F.3.5.3	Replacement fuse identification and rating markings .....	The fuses are located within the equipment and not replaceable by an ordinary person or an instructed person. "T3.15AL/250Vac" marked on PCB layout near fuse F1	P
	Instructional safeguards for neutral fuse .....		N/A
F.3.5.4	Replacement battery identification marking .....		N/A
F.3.5.5	Neutral conductor terminal		N/A
F.3.5.6	Terminal marking location		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal .....		N/A
F.3.6.1.2	Protective bonding conductor terminals .....	Not permanently connected equipment	N/A
F.3.6.2	Equipment class marking .....		P
F.3.6.3	Functional earthing terminal marking .....		N/A
F.3.7	Equipment IP rating marking .....	IPX0	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. 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.	P
F.3.10	Test for permanence of markings	After the test, the marking remains legible, and moreover the label shows no curling and is not removable by hand.	P
<b>F.4</b>	<b>Instructions</b>		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		P
	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		N/A
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
<b>F.5</b>	Instructional safeguards		N/A
<b>G</b>	<b>COMPONENTS</b>		P
<b>G.1</b>	<b>Switches</b>		N/A
G.1.1	General	No switches	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
<b>G.2</b>	<b>Relays</b>		N/A
G.2.1	Requirements	No relays	N/A
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
<b>G.3</b>	<b>Protective devices</b>		P
G.3.1	Thermal cut-offs	No thermal cut-offs	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		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		N/A
G.3.4	Overcurrent protection devices	Fuse is complying IEC/EN 60127.	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
<b>G.4</b>	<b>Connectors</b>		P
G.4.1	Spacings		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Mains connector configuration..... :	The US plug according to UL 1310 Class 2 Power Units (Mechanical Requirements on blades Only); The blade dimension was evaluated to be complied with NEMA configurations in accordance with Wiring Devices-Dimensional Specifications, ANSI/NEMA WD6. Japan plug according to JIS C 8303: 2007.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	Output connector with a shape that insertion into a mains connector or socket is unlikely to occur.	P
<b>G.5</b>	<b>Wound components</b>		P
G.5.1	Wire insulation in wound components	Certified triple insulation wire used.	P
G.5.1.2	Protection against mechanical stress	By insulation tape	P
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 .....	See G.5.3.2 and G.5.3.3.	P
	Position .....	T1	P
	Method of protection .....	Over current protection by circuit design.	P
G.5.3.2	Insulation		P
	Protection from displacement of windings .....	Tapes	—
G.5.3.3	Transformer overload tests	(See appended table B.3, B.4)	P
G.5.3.3.1	Test conditions		P
G.5.3.3.2	Winding temperatures		P
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	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
G.5.4	Motors	No motors	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 .....		—
<b>G.6</b>	<b>Wire Insulation</b>		P
G.6.1	General	Secondary windings used triple insulation wire	P
G.6.2	Enamelled winding wire insulation		N/A
<b>G.7</b>	<b>Mains supply cords</b>		N/A
G.7.1	General requirements	No power supply cord provided.	N/A
	Type .....		—
G.7.2	Cross sectional area (mm <sup>2</sup> or AWG) .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
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
<b>G.8</b>	<b>Varistors</b>		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguards against fire		N/A
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
<b>G.9</b>	<b>Integrated circuit (IC) current limiters</b>		N/A
G.9.1	Requirements		N/A
	IC limiter output current (max. 5A)..... :		—
	Manufacturers' defined drift ..... :		—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
<b>G.10</b>	<b>Resistors</b>		N/A
G.10.1	General		N/A
G.10.2	Conditioning		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
<b>G.11</b>	<b>Capacitors and RC units</b>		P
G.11.1	General requirements	Y-capacitor is used according to IEC/EN/UL 60384-14. Detail see table 4.1.2	P
G.11.2	Conditioning of capacitors and RC units	(see appended table 4.1.2)	P
G.11.3	Rules for selecting capacitors		P
<b>G.12</b>	<b>Optocouplers</b>		P
	Optocouplers comply with IEC 60747-5-5 with specifics	Approved opto-coupler used. (See appended table 4.1.2)	P
	Type test voltage $V_{ini,a}$ ..... :	Min. 4000VDC	—
	Routine test voltage, $V_{ini,b}$ ..... :	Considered	—
<b>G.13</b>	<b>Printed boards</b>		P
G.13.1	General requirements	Approved Printed board used	P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		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
<b>G.14</b>	<b>Coating on components terminals</b>		N/A
G.14.1	Requirements ..... :		N/A
<b>G.15</b>	<b>Pressurized liquid filled components</b>		N/A
G.15.1	Requirements		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
<b>G.16</b>	<b>IC including capacitor discharge function (ICX)</b>		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
<b>H</b>	<b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b>		N/A
<b>H.1</b>	<b>General</b>		N/A
<b>H.2</b>	<b>Method A</b>		N/A
<b>H.3</b>	<b>Method B</b>		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) ..... :		—
H.3.1.2	Voltage (V) ..... :		—
H.3.1.3	Cadence; time (s) and voltage (V) ..... :		—
H.3.1.4	Single fault current (mA): ..... :		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)..... :		N/A
<b>J</b>	<b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>		P
<b>J.1</b>	<b>General</b>		P
	Winding wire insulation ..... :	Certified triple insulation wire used as secondary winding. (See appended table 4.1.2)	—
	Solid round winding wire, diameter (mm) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm <sup>2</sup> )..... :		N/A
J.2/J.3	Tests and Manufacturing		—
<b>K</b>	<b>SAFETY INTERLOCKS</b>		N/A
<b>K.1</b>	<b>General requirements</b>		N/A
	Instructional safeguard .....		N/A
<b>K.2</b>	<b>Components of safety interlock safeguard mechanism</b>		N/A
<b>K.3</b>	<b>Inadvertent change of operating mode</b>		N/A
<b>K.4</b>	<b>Interlock safeguard override</b>		N/A
<b>K.5</b>	<b>Fail-safe</b>		N/A
K.5.1	Under single fault condition		N/A
<b>K.6</b>	<b>Mechanically operated safety interlocks</b>		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance .....		N/A
<b>K.7</b>	<b>Interlock circuit isolation</b>		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
<b>L</b>	<b>DISCONNECT DEVICES</b>		P
<b>L.1</b>	<b>General requirements</b>	The mains plug used as disconnect device.	P
<b>L.2</b>	<b>Permanently connected equipment</b>	Not permanently connected equipment.	N/A
<b>L.3</b>	<b>Parts that remain energized</b>		N/A
<b>L.4</b>	<b>Single-phase equipment</b>		P
<b>L.5</b>	<b>Three-phase equipment</b>		N/A
<b>L.6</b>	<b>Switches as disconnect devices</b>	No switch.	N/A
<b>L.7</b>	<b>Plugs as disconnect devices</b>		N/A
<b>L.8</b>	<b>Multiple power sources</b>	Only AC mains.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructional safeguard .....		N/A
<b>M</b>	<b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>		N/A
<b>M.1</b>	<b>General requirements</b>		N/A
<b>M.2</b>	<b>Safety of batteries and their cells</b>		N/A
M.2.1	Batteries and their cells comply with relevant IEC standards .....	No battery.	N/A
<b>M.3</b>	<b>Protection circuits for batteries provided within the equipment</b>		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
<b>M.4</b>	<b>Additional safeguards for equipment containing a portable secondary lithium battery</b>		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
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
<b>M.5</b>	<b>Risk of burn due to short-circuit during carrying</b>		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
<b>M.6</b>	<b>Safeguards against short-circuits</b>		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
<b>M.7</b>	<b>Risk of explosion from lead acid and NiCd batteries</b>		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 (m <sup>3</sup> /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
<b>M.8</b>	<b>Protection against internal ignition from external spark sources of batteries with aqueous electrolyte</b>		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 <sub>z</sub> (m <sup>3</sup> /s) ..... :		—
M.8.2.3	Correction factors ..... :		—
M.8.2.4	Calculation of distance d (mm) ..... :		—
<b>M.9</b>	<b>Preventing electrolyte spillage</b>		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
<b>M.10</b>	Instructions to prevent reasonably foreseeable misuse		N/A
	Instructional safeguard ..... :		N/A
<b>N</b>	<b>ELECTROCHEMICAL POTENTIALS</b>		N/A
	Material(s) used ..... :		—
<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		P
	Value of X (mm) ..... :	X=1. Pollution degree considered	—
<b>P</b>	<b>SAFEGUARDS AGAINST CONDUCTIVE OBJECTS</b>		P
<b>P.1</b>	<b>General</b>	No openings.	P
<b>P.2</b>	<b>Safeguards against entry or consequences of entry of a foreign object</b>		P

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Clause	Requirement + Test	Result - Remark	Verdict
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
<b>P.3</b>	<b>Safeguards against spillage of internal liquids</b>		N/A
P.3.1	General		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
<b>P.4</b>	<b>Metallized coatings and adhesives securing parts</b>		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T <sub>c</sub> (°C) ..... :		—
	Duration (weeks)..... :		—
<b>Q</b>	<b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>		P
<b>Q.1</b>	<b>Limited power sources</b>		P
Q.1.1	Requirements		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output	(See appended table Q.1)	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 Q.1)	P
	Current rating of overcurrent protective device (A) ..... :		N/A
<b>Q.2</b>	<b>Test for external circuits – paired conductor cable</b>		N/A
	Maximum output current (A) ..... :		N/A
	Current limiting method..... :		—



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Clause	Requirement + Test	Result - Remark	Verdict
<b>R</b>	<b>LIMITED SHORT CIRCUIT TEST</b>		N/A
<b>R.1</b>	<b>General</b>		N/A
<b>R.2</b>	<b>Test setup</b>		N/A
	Overcurrent protective device for test .....		—
<b>R.3</b>	<b>Test method</b>		N/A
	Cord/cable used for test .....		—
<b>R.4</b>	<b>Compliance</b>		N/A
<b>S</b>	<b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		N/A
<b>S.1</b>	<b>Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W</b>		N/A
	Samples, material .....		—
	Wall thickness (mm) .....		—
	Conditioning (°C) .....		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
<b>S.2</b>	<b>Flammability test for fire enclosure and fire barrier integrity</b>		N/A
	Samples, material .....		—
	Wall thickness (mm) .....		—
	Conditioning (°C) .....		—
<b>S.3</b>	<b>Flammability test for the bottom of a fire enclosure</b>		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) .....		—
<b>S.4</b>	<b>Flammability classification of materials</b>		N/A
<b>S.5</b>	<b>Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W</b>		N/A
	Samples, material .....		—
	Wall thickness (mm) .....		—
	Conditioning (°C) .....		—
<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		P
<b>T.1</b>	<b>General</b>		P

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Clause	Requirement + Test	Result - Remark	Verdict
<b>T.2</b>	<b>Steady force test, 10 N</b> .....	(See appended table T.2)	P
<b>T.3</b>	<b>Steady force test, 30 N</b> .....		N/A
<b>T.4</b>	<b>Steady force test, 100 N</b> .....	(See appended table T.4)	P
<b>T.5</b>	<b>Steady force test, 250 N</b> .....		N/A
<b>T.6</b>	<b>Enclosure impact test</b>		N/A
	Fall test		N/A
	Swing test		N/A
<b>T.7</b>	<b>Drop test</b> .....	(See appended table T.7)	P
<b>T.8</b>	<b>Stress relief test</b> .....	(See appended table T.8)	P
<b>T.9</b>	<b>Glass Impact Test</b> .....		N/A
<b>T.10</b>	<b>Glass fragmentation test</b>		N/A
	Number of particles counted.....		N/A
<b>T.11</b>	<b>Test for telescoping or rod antennas</b>		N/A
	Torque value (Nm) .....		N/A
<b>U</b>	<b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>		N/A
<b>U.1</b>	<b>General</b>		N/A
	Instructional safeguard :		N/A
<b>U.2</b>	<b>Test method and compliance for non-intrinsically protected CRTs</b>		N/A
<b>U.3</b>	<b>Protective screen</b>		N/A
<b>V</b>	<b>DETERMINATION OF ACCESSIBLE PARTS</b>		P
<b>V.1</b>	<b>Accessible parts of equipment</b>		P
V.1.1	General		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		P
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		N/A
<b>V.2</b>	<b>Accessible part criterion</b>		P
<b>X</b>	<b>ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)</b>		N/A
	Clearance.....		N/A
<b>Y</b>	<b>CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES</b>		N/A
<b>Y.1</b>	<b>General</b>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
<b>Y.2</b>	<b>Resistance to UV radiation</b>		N/A
<b>Y.3</b>	<b>Resistance to corrosion</b>		N/A
<b>Y.3</b>	<b>Resistance to corrosion</b>		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
<b>Y.4</b>	<b>Gaskets</b>		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		N/A
<b>Y.5</b>	<b>Protection of equipment within an outdoor enclosure</b>		N/A
Y.5.1	General		N/A
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
<b>Y.6</b>	<b>Mechanical strength of enclosures</b>		N/A
Y.6.1	General		N/A
Y.6.2	Impact test ..... :		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 <sup>1)</sup>	Additional Info <sup>2)</sup>	
Model: MC-601 (output: 20.0Vdc, 3.0A)							
264Vac, 60Hz	Primary circuits supplied by a.c. mains supply	Normal	264Vrms	--	SS	Frequency: 60Hz	ES3
		Abnormal	--	--	--	--	
		Single fault	--	--	--	--	
264Vac, 60Hz	T1 pin 5 to 6	Normal	46.8Vpk	--	SS	106.5kHz	ES1
264Vac, 60Hz	Transformer T1 pin 5 to 6 after U2	Normal	21.1Vdc	--	SS	DC	ES1
264Vac, 60Hz	Output + to -	Normal	20.01Vdc	--	SS	DC	ES1
264Vac, 60Hz	Output + to -	Output overload	20.01Vdc	--	SS	DC	ES1
264Vac, 60Hz	Output + to -	Single fault – SC U2 pin 7 to 1	0Vdc	--	SS	--	ES1
264Vac, 60Hz	Output + to -	Single fault – SC Q2 pin D to S	0Vdc	--	SS	--	ES1
264Vac, 60Hz	Output + to -	Single fault – SC U3 pin 1 to 2	0Vdc	--	SS	--	ES1
264Vac, 60Hz	Output + to -	Single fault – SC U3 pin 3 to 4	0Vdc	--	SS	--	ES1
264Vac, 60Hz	Output + to -	Single fault – OC U3 pin 1	0Vdc	--	SS	--	ES1
264Vac, 60Hz	Output + to -	Single fault – OC U3 pin 3	0Vdc	--	SS	--	ES1
264Vac, 60Hz	Output + to -	Single fault – SC R19	0Vdc	--	SS	--	ES1
264Vac, 60Hz	Output +/- to earth	Normal	--	0.074mA <sub>p</sub> k	SS	--	ES1
264Vac, 60Hz	Output +/- to earth	Output overload	--	0.074mA <sub>p</sub> k	SS	--	ES1
264Vac, 60Hz	Output +/- to earth	Single fault – SC U2 pin 7 to 1	--	0.074mA <sub>p</sub> k	SS	--	ES1
264Vac, 60Hz	Output +/- to earth	Single fault – SC Q2 pin D to S	--	0.074mA <sub>p</sub> k	SS	--	ES1

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
264Vac, 60Hz	Output +/- to earth	Single fault – SC U3 pin 1 to 2	--	0.074m Apk	SS	--	ES1
264Vac, 60Hz	Output +/- to earth	Single fault – SC U3 pin 3 to 4	--	0.074m Apk	SS	--	ES1
264Vac, 60Hz	Output +/- to earth	Single fault – OC U3 pin 1	--	0.074m Apk	SS	--	ES1
264Vac, 60Hz	Output +/- to earth	Single fault – OC U3 pin 3	--	0.074m Apk	SS	--	ES1
264Vac, 60Hz	Output +/- to earth	Single fault – SC R19	--	0.088m Apk	SS	--	ES1
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.							
Abbreviation: SC= short circuit; OC= open circuit.							

5.4.1.8	TABLE: Working voltage measurement				P
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
Model: MC-601 (output: 20.0Vdc, 3.0A)					
T1 pin 1 to pin 5	250	432	106.5k	--	
T1 pin 2 to pin 5	190	328	106.5k	--	
T1 pin 3 to pin 5	232	384	106.5k	--	
T1 pin 4 to pin 5	243	516	106.5k	--	
T1 pin 8 to pin 5	239	423	106.5k	--	
T1 pin 1 to pin 6	<b>264</b>	456	106.5k	Max. Vrms	
T1 pin 2 to pin 6	191	352	106.5k	--	
T1 pin 3 to pin 6	234	432	106.5k	--	
T1 pin 4 to pin 6	250	<b>568</b>	106.5k	Max. Vpeak	
T1 pin 8 to pin 6	223	404	106.5k	--	
U3 pin 1 to pin 3	225	376	60	--	
U3 pin 1 to pin 4	224	378	60	--	
U3 pin 2 to pin 3	225	378	60	--	
U3 pin 2 to pin 4	226	376	60	--	
CY1 pri. to CY1 sec	218	360	60	--	
Supplementary information:					
Input voltage: 240Vac, 60Hz					

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Clause	Requirement + Test	Result - Remark	Verdict
<b>5.4.1.10.2</b>	<b>TABLE: Vicat softening temperature of thermoplastics</b>		N/A
Method .....		ISO 306 / B50	—
Object/ Part No./Material	Manufacturer/trademark	Thickness (mm)	T softening (°C)
--	--	--	--
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)	
Plug holder / HZ-88	DONGGUAN JINHUA INDUSTRT CO LTD	1.5*2	125	1.2	
Plug holder / FR6005 + (z)	Covestro Deutschland AG [PC Resins]	1.5*2	125	1.3	
Plug holder / FR3730(##)	WANHUA CHEMICAL (Ningbo) CO LTD	1.5*2	125	1.3	
Plug holder / PC 618-R(aa) (f1)	DongGuan TPIPLASTIC Co., Ltd.	1.5*2	125	1.1	
Plug holder / PC 61(aa)-FR (f1)	DongGuan TPIPLASTIC Co., Ltd.	1.5*2	125	1.1	
Supplementary information:					
The bobbin materials of L1, L2 and T1 are phenolic, no tests are needed.					

<b>5.4.2, 5.4.3</b>	<b>TABLE: Minimum Clearances/Creepage distance</b>							P
Clearance (cl) and creepage distance (cr) at/of/between:	U <sub>p</sub> (V)	U <sub>rms</sub> (V)	Freq <sup>1)</sup> (kHz)	Required cl (mm)	cl (mm)	E.S. <sup>2)</sup> (V)	Required cr (mm)	cr (mm)
L and N before F1 on PCB trace (B)	420	250	0.06	2.3	6.0	--	2.5	6.0
L and N before F1 on plug holder (B)	420	250	0.06	2.3	9.6	--	2.5	9.6
Two pins of F1 on PCB trace (B)	420	250	0.06	2.3	4.5	--	2.5	4.5
Primary trace to secondary trace under U3 (R)	420	250	0.06	4.5	7.6	--	5.0	7.6
Primary trace to secondary trace under CY1 (R)	420	250	0.06	4.5	7.6	--	5.0	7.6

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Clause	Requirement + Test			Result - Remark				Verdict
Primary component F1 trace to CY1 secondary trace (R)	420	250	0.06	4.5	5.3	--	5.0	5.3
Primary trace to secondary trace under T1 (R)	568	264	106.5	4.5	9.7	--	5.3	9.7
Transformer T1: primary windings and pins to secondary pins (R)	568	264	106.5	4.5	8.7	--	5.3	8.7
Transformer T1: primary windings to USB-C output port(R)	568	264	106.5	4.5	5.7	--	5.3	5.7
Transformer T1: primary core to secondary pins (R)	568	264	106.5	4.5	8.6	--	5.3	8.6
Transformer T1: primary core to U3 secondary pins (R)	568	264	106.5	4.5	7.7	--	5.3	7.7
Primary component F1 trace to accessible enclosure (R)	420	250	0.06	4.5	7.5	--	5.0	7.5
Supplementary information:								
1) Only for frequency above 30 kHz 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied) 3) Provide Material Group IIIb 4) Core of transformer T1 considered as primary part; 5) The equipment intended to used up to 5000m above sea level, the factor (1.48) given in table 16 of IEC 62368-1: 2018 was considered. 6) (R): Reinforced insulation; (F): Functional insulation; (B): Basic insulation; (S): Supplementary insulation.								

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 / plug holder *	568	RI	Min. 0.4	Min. 1.5	
Opto-coupler (U3) *	420	RI	Min. 0.4	Min. 0.4	
Bobbin of T1 *	568	RI	Min. 0.4	See appended table 4.1.2	
Triple insulation wire of T1 *	568	RI	--	Triple insulation wire	
Insulation barrier *	568	RI	Min. 0.4	See appended	

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Clause	Requirement + Test		Result - Remark	Verdict
				table 4.1.2
Insulation tape of T1 *	568	RI	Min. 2 layers	Min. 2 layers
Supplementary information:				
FI=Functional insulation; BI=Basic insulation; SI=Supplementary insulation; RI=Reinforced insulation. Denote *: Considered for all source listed in 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 T1	--	106.5	0.34	Min. 0.45	Reinforced	568	
Enclosure / plug holder	--	106.5	0.30	Min. 1.5	Reinforced	568	
Insulation barrier	--	106.5	0.30	Min. 0.75	Reinforced	568	
Triple insulation wire of T1	--	106.5	0.34	--	Reinforced	568	
Insulation tape of T1	--	106.5	0.34	--	Reinforced	568	
Supplementary information:							
All sources of each material have been considered to conduct test, see table 4.1.2 for details. According to clause 5.4.4.9 Bobbin of transformer T1: $1.2 \times 2 \times 568 / 0.34 = 4010V$ , see table 5.4.9 Enclosure / plug holder, Insulation barrier: $1.2 \times 2 \times 568 / 0.30 = 4544V$ , see table 5.4.9 Triple Insulation wire of T1: $1.2 \times 2 \times 568 / 0.34 = 4010V$ , see table 5.4.9 Insulation tape of T1: $1.2 \times 2 \times 568 / 0.34 = 4010V$ , see table 5.4.9							

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	
Functional:	--	--	--	
Between L and N before F1 (F1 disconnected)	DC	2500	No	
Basic/supplementary:	--	--	--	
--	--	--	--	
Reinforced / double insulation:	--	--	--	
L/N to output terminal	DC	4000	No	
Enclosure inside to outside (all source were considered)	DC	4544	No	
L/N to enclosure wrapped with metal foil (all source were considered)	DC	4544	No	
Transformer T1: primary to secondary winding (all source were considered)	DC	4544	No	



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Clause	Requirement + Test	Result - Remark	Verdict
Transformer T1: secondary winding to core (all source were considered)	DC	4544	No
Bobbin of transformer T1 (all source were considered)	DC	4010	No
Insulation barrier (all source were considered)	DC	4544	No
One layer insulation tape of transformer (all source were considered)	DC	4010	No
Supplementary information:			
All source listed in 4.1.2 were considered; Core of transformer considered as primary part. During test normal and reverse polarity has same result.			

<b>5.5.2.2</b>	<b>TABLE: Stored discharge on capacitors</b>					N/A
Location	Supply voltage (V)	Operating and fault condition <sup>1)</sup>	Switch position	Measured voltage (Vpk)	ES Class	
--	--	--	--	--	--	
--	--	--	--	--	--	
Supplementary information:						
X-capacitors installed for testing: [ ] bleeding resistor rating: [ ] ICX: 1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit						

<b>5.6.6</b>	<b>TABLE: Resistance of protective conductors and terminations</b>					N/A
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)		
--	--	--	--	--	--	
Supplementary information:						

5.7.4	TABLE: Unearthed accessible parts					P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V <sub>rms</sub> or V <sub>pk</sub> )	Current (A <sub>rms</sub> or A <sub>pk</sub> )	Freq. (Hz)	
Model: MC-601 (output: 20.0Vdc, 3.0A)						
Plastic enclosure with metal foil to earth (CY1=220pF)	Normal	264Vac	--	0.02mA <sub>pk</sub>	60.0	ES1
	Output overload	264Vac	--	0.02mA <sub>pk</sub>	60.0	ES1
	Single fault – SC	264Vac	--	0.02mA <sub>pk</sub>	60.0	ES1

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Clause	Requirement + Test			Result - Remark		Verdict
	U2 pin 7 to 1					
	Single fault – SC Q2 pin D to S	264Vac	--	0.02mA <sub>pk</sub>	60.0	ES1
	Single fault – SC U3 pin 1 to 2	264Vac	--	0.02mA <sub>pk</sub>	60.0	ES1
	Single fault – SC U3 pin 3 to 4	264Vac	--	0.02mA <sub>pk</sub>	60.0	ES1
	Single fault – OC U3 pin 1	264Vac	--	0.02mA <sub>pk</sub>	60.0	ES1
	Single fault – OC U3 pin 3	264Vac	--	0.02mA <sub>pk</sub>	60.0	ES1
	Single fault – SC R19	264Vac	--	0.02mA <sub>pk</sub>	60.0	ES1
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						

<b>5.7.5</b>	<b>TABLE: Earthed accessible conductive part</b>			N/A
Supply voltage (V) .....				—
Phase(s) .....		[ ] Single Phase; [ ] Three Phase: [ ] Delta [ ] Wye		
Power Distribution System .....		[ ] TN [ ] TT [ ] IT		
Location		Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment
--		--	--	--
Supplementary Information:				

<b>5.8</b>	<b>TABLE: Backfeed safeguard in battery backed up supplies</b>					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						

<b>6.2.2</b>	<b>TABLE: Power source circuit classifications</b>					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power <sup>1)</sup> (W)	Time (S)	PS class
Model: MC-601 (output: 5.0Vdc, 3.0A)						

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Clause	Requirement + Test	Result - Remark				Verdict
All internal circuit/ components	Normal, abnormal and fault condition	--	--	--	--	PS3 (declared)
USB-C Output	Worst-case fault	4.76	3.25	15.47	>5s	PS2
USB-C Output	Single fault – SC U2 pin 7 to 1 #	0	0	0	--	PS1
USB-C Output	Single fault – SC Q2 pin D to S #	0	0	0	--	PS1
USB-C Output	Single fault – SC U3 pin 1 to 2 #	0	0	0	--	PS1
USB-C Output	Single fault – SC U3 pin 3 to 4 #	0	0	0	--	PS1
USB-C Output	Single fault – OC U3 pin 1 #	0	0	0	--	PS1
USB-C Output	Single fault – OC U3 pin 3 #	0	0	0	--	PS1
USB-C Output	Single fault – SC R19 **	0	0	0	--	PS1
USB-C Output	Single fault – SC R35	5.18	6.29	32.58	>5s	PS2
Model: MC-601 (output: 9.0Vdc, 3.0A)						
All internal circuit/ components	Normal, abnormal and fault condition	--	--	--	--	PS3 (declared)
USB-C Output	Worst-case fault	8.44	3.25	27.43	>5s	PS2
USB-C Output	Single fault – SC U2 pin 7 to 1 #	0	0	0	--	PS1
USB-C Output	Single fault – SC Q2 pin D to S #	0	0	0	--	PS1
USB-C Output	Single fault – SC U3 pin 1 to 2 #	0	0	0	--	PS1
USB-C Output	Single fault – SC U3 pin 3 to 4 #	0	0	0	--	PS1
USB-C Output	Single fault – OC U3 pin 1 #	0	0	0	--	PS1
USB-C Output	Single fault – OC U3 pin 3 #	0	0	0	--	PS1
USB-C Output	Single fault – SC R19 **	0	0	0	--	PS1
USB-C Output	Single fault – SC R35	8.79	6.27	55.11	>5s	PS2
Model: MC-601 (output: 15.0Vdc, 3.0A)						

IEC 62368-1						
Clause	Requirement + Test	Result - Remark				Verdict
All internal circuit/ components	Normal, abnormal and fault condition	--	--	--	--	PS3 (declared)
USB-C Output	Worst-case fault	14.45	3.26	47.11	>5s	PS2
USB-C Output	Single fault – SC U2 pin 7 to 1 #	0	0	0	--	PS1
USB-C Output	Single fault – SC Q2 pin D to S #	0	0	0	--	PS1
USB-C Output	Single fault – SC U3 pin 1 to 2 #	0	0	0	--	PS1
USB-C Output	Single fault – SC U3 pin 3 to 4 #	0	0	0	--	PS1
USB-C Output	Single fault – OC U3 pin 1 #	0	0	0	--	PS1
USB-C Output	Single fault – OC U3 pin 3 #	0	0	0	--	PS1
USB-C Output	Single fault – SC R19 **	0	0	0	--	PS1
USB-C Output	Single fault – SC R35	14.13	5.25	74.18	>5s	PS2
Model: MC-601 (output: 20.0Vdc, 3.0A)						
All internal circuit/ components	Normal, abnormal and fault condition	--	--	--	--	PS3 (declared)
USB-C Output	Worst-case fault	19.45	3.26	63.41	>5s	PS2
USB-C Output	Single fault – SC U2 pin 7 to 1 #	0	0	0	--	PS1
USB-C Output	Single fault – SC Q2 pin D to S #	0	0	0	--	PS1
USB-C Output	Single fault – SC U3 pin 1 to 2 #	0	0	0	--	PS1
USB-C Output	Single fault – SC U3 pin 3 to 4 #	0	0	0	--	PS1
USB-C Output	Single fault – OC U3 pin 1 #	0	0	0	--	PS1
USB-C Output	Single fault – OC U3 pin 3 #	0	0	0	--	PS1
USB-C Output	Single fault – SC R19 **	0	0	0	--	PS1
USB-C Output	Single fault – SC R35	19.84	4.77	94.64	>5s	PS2
Model: MC-601 (output: 11.0Vdc, 3.0A)						

IEC 62368-1						
Clause	Requirement + Test	Result - Remark				Verdict
All internal circuit/ components	Normal, abnormal and fault condition	--	--	--	--	PS3 (declared)
USB-C Output	Worst-case fault	10.24	3.26	33.38	>5s	PS2
USB-C Output	Single fault – SC U2 pin 7 to 1 #	0	0	0	--	PS1
USB-C Output	Single fault – SC Q2 pin D to S #	0	0	0	--	PS1
USB-C Output	Single fault – SC U3 pin 1 to 2 #	0	0	0	--	PS1
USB-C Output	Single fault – SC U3 pin 3 to 4 #	0	0	0	--	PS1
USB-C Output	Single fault – OC U3 pin 1 #	0	0	0	--	PS1
USB-C Output	Single fault – OC U3 pin 3 #	0	0	0	--	PS1
USB-C Output	Single fault – SC R19 **	0	0	0	--	PS1
USB-C Output	Single fault – SC R35	10.28	6.27	64.46	>5s	PS2
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						
1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						
**: means fuse opened immediately, no hazard.						
#: means unit shut down immediately, no hazard, no damage.						

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
All internal circuits / components except output connector		--	--	--	Yes (declaration)
Supplementary information:					

<b>6.2.3.2</b>	<b>TABLE: Determination of resistive PIS</b>				P
Location	Operating and fault condition	Dissipate power (W)		Arcing PIS? Yes / No	
All internal circuits / components and output connector	--	--		Yes (declaration)	

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

Abbreviation: SC= short circuit; OC= open circuit

<b>8.5.5</b>	<b>TABLE: High pressure lamp</b>				N/A
Lamp manufacturer	Lamp type	Explosion method	Longest axis of glass particle (mm)	Particle found beyond 1 m Yes / No	
--	--	--	--	--	
Supplementary information:					

<b>9.6</b>	<b>TABLE: Temperature measurements for wireless power transmitters</b>							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:								

<b>5.4.1.4, 9.3, B.1.5, B.2.6</b>	<b>TABLE: Temperature measurements</b>					P
Supply voltage (V) .....		See below	See below	See below	See below	—
Ambient temperature during test $T_{amb}$ (°C) .....		See below	See below	See below	See below	—
Maximum measured temperature $T$ of part/at:		$T$ (°C)				Allowed $T_{max}$ (°C)
Model: MC-601 (load with 20.0Vdc, 3.0A for 5 minutes, then reduced to 20.0Vdc, 2.25A for 5 minutes, then reduced to 20.0Vdc, 1.67A for long working as specification)		90V/60Hz Horizontal	90V/60Hz Vertical	264V/50H z Vertical	264V/50Hz Horizontal	--
Plug holder inside		71.3	77.7	68.9	76.3	105
Input wire		63.8	68.3	62.5	66.3	105
EC3 body		95.8	98.8	93.2	97.1	115
EC2 body		97.9	101.1	92.7	96.9	115

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Clause	Requirement + Test		Result - Remark		Verdict
L1 winding	100.1	103.3	90.6	94.4	130
PCB near RT1	93.3	96.3	87.1	91.6	130
L2 winding	102.5	105.5	96.9	100.6	130
EC1 body	100.2	103.0	95.0	98.4	115
T1 coil	103.3	105.4	105.2	106.3	110
T1 core	99.4	102.0	100.3	103.3	110
PCB near BD1	110.7	112.2	111.8	114.8	130
PCB near U1	107.8	109.2	109.5	112.7	130
U3 body	92.0	93.7	95.7	99.6	110
PCB near U4	88.7	88.6	88.7	91.6	130
CY1 body	88.7	88.9	85.0	88.1	125
PCB near U2	96.7	97.5	100.2	101.3	130
EC7 body	94.1	94.2	96.9	97.5	105
Insulation barrier	82.3	87.9	83.2	88.9	105
Enclosure inside near T1	80.3	86.5	79.9	86.8	105
<b>Ambient</b>	<b>45.0</b>	<b>45.0</b>	<b>45.0</b>	<b>45.0</b>	--
Plug holder outside	46.2	49.6	45.5	49.8	77
Enclosure outside near T1	53.6	58.7	51.6	54.6	77
<b>Ambient</b>	<b>25.0</b>	<b>25.0</b>	<b>25.0</b>	<b>25.0</b>	--
Model: MC-601 (load with 11.0Vdc, 3.0A for long working)	90V/60Hz Horizontal	90V/60Hz Vertical	264V/50Hz z Vertical	264V/50Hz Horizontal	--
Plug holder inside	69.8	73.7	70.5	69.9	105
Input wire	57.9	61.2	59.8	56.3	105
EC3 body	102.1	104.7	100.5	96.7	115
EC2 body	104.1	107.0	99.8	95.7	115
L1 winding	107.1	109.7	96.9	93.1	130
PCB near RT1	99.9	103.0	94.3	89.9	130
L2 winding	109.5	111.9	103.8	100.3	130
EC1 body	107.1	109.2	101.6	98.3	115
T1 coil	103.9	104.9	106.1	104.7	110
T1 core	101.4	102.5	103.3	102.3	110
PCB near BD1	108.4	109.5	110.5	111.2	130
PCB near U1	104.5	107.7	107.4	103.3	130
U3 body	95.1	96.2	97.0	92.5	110
PCB near U4	96.0	96.6	95.1	94.7	130

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
CY1 body	94.1	95.8	90.7	89.1	125		
PCB near U2	99.5	98.3	99.2	99.9	130		
EC7 body	96.5	96.3	97.0	97.3	105		
Insulation barrier	82.6	86.5	82.9	84.6	105		
Enclosure inside near T1	80.1	83.2	79.2	74.7	105		
<b>Ambient</b>	<b>45.0</b>	<b>45.0</b>	<b>45.0</b>	<b>45.0</b>	<b>--</b>		
Plug holder outside	43.4	45.2	44.3	42.3	77		
Enclosure outside near T1	53.4	55.6	52.5	49.1	77		
<b>Ambient</b>	<b>25.0</b>	<b>25.0</b>	<b>25.0</b>	<b>25.0</b>	<b>--</b>		
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							
1. The temperatures were measured under worst case normal mode and as described in B.2.5 at voltages as above.							
2. With a specified maximum ambient temperature and test temperature of 45°C, the maximum permitted temperatures are calculated as follows:							
T1 Winding components (providing safety isolation):							
Class 130 (B) Tmax = 120°C - 10°C = 110°C.							
3. Horizontal means the adaptor is plugged into horizontal socket-outlet; Vertical means the adaptor is plugged into vertical wall socket-outlet.							
4. Tested for Transformer insulation system: ChongQing JinLai Technology Corp / JLIII-130.							

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: MC-601									
90V	50Hz	0.380	--	18.50	--	F1	0.380	Load with 5.0Vdc, 3.0A	
90V	60Hz	0.382	--	18.51	--	F1	0.382	Load with 5.0Vdc, 3.0A	
100V	50Hz	0.341	1.7	18.45	--	F1	0.341	Load with 5.0Vdc, 3.0A	
100V	60Hz	0.342	1.7	18.45	--	F1	0.342	Load with 5.0Vdc, 3.0A	
240V	50Hz	0.168	1.7	18.54	--	F1	0.168	Load with 5.0Vdc, 3.0A	
240V	60Hz	0.166	1.7	18.53	--	F1	0.166	Load with 5.0Vdc, 3.0A	



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Clause		Requirement + Test				Result - Remark		Verdict
264V	50Hz	0.158	--	18.70	--	F1	0.158	Load with 5.0Vdc, 3.0A
264V	60Hz	0.155	--	18.67	--	F1	0.155	Load with 5.0Vdc, 3.0A
Model: MC-601								
90V	50Hz	0.622	--	30.71	--	F1	0.622	Load with 9.0Vdc, 3.0A
90V	60Hz	0.625	--	30.74	--	F1	0.625	Load with 9.0Vdc, 3.0A
100V	50Hz	0.561	1.7	30.49	--	F1	0.561	Load with 9.0Vdc, 3.0A
100V	60Hz	0.562	1.7	30.57	--	F1	0.562	Load with 9.0Vdc, 3.0A
240V	50Hz	0.266	1.7	30.43	--	F1	0.266	Load with 9.0Vdc, 3.0A
240V	60Hz	0.269	1.7	30.39	--	F1	0.269	Load with 9.0Vdc, 3.0A
264V	50Hz	0.249	--	30.65	--	F1	0.249	Load with 9.0Vdc, 3.0A
264V	60Hz	0.251	--	30.59	--	F1	0.251	Load with 9.0Vdc, 3.0A
Model: MC-601								
90V	50Hz	0.992	--	50.58	--	F1	0.992	Load with 15.0Vdc, 3.0A
90V	60Hz	0.994	--	50.61	--	F1	0.994	Load with 15.0Vdc, 3.0A
100V	50Hz	0.888	1.7	50.28	--	F1	0.888	Load with 15.0Vdc, 3.0A
100V	60Hz	0.891	1.7	50.32	--	F1	0.891	Load with 15.0Vdc, 3.0A
240V	50Hz	0.408	1.7	49.57	--	F1	0.408	Load with 15.0Vdc, 3.0A
240V	60Hz	0.406	1.7	49.52	--	F1	0.406	Load with 15.0Vdc, 3.0A
264V	50Hz	0.384	--	49.77	--	F1	0.384	Load with 15.0Vdc, 3.0A
264V	60Hz	0.382	--	49.73	--	F1	0.382	Load with 15.0Vdc, 3.0A
Model: MC-601								
90V	50Hz	1.341	--	68.46	--	F1	1.341	Load with 20.0Vdc, 3.0A

IEC 62368-1								
Clause		Requirement + Test				Result - Remark		Verdict
90V	60Hz	1.342	--	68.52	--	F1	1.342	Load with 20.0Vdc, 3.0A
100V	50Hz	1.220	1.7	67.42	--	F1	1.220	Load with 20.0Vdc, 3.0A
100V	60Hz	1.222	1.7	67.49	--	F1	1.222	Load with 20.0Vdc, 3.0A
240V	50Hz	0.565	1.7	65.97	--	F1	0.565	Load with 20.0Vdc, 3.0A
240V	60Hz	0.562	1.7	65.86	--	F1	0.562	Load with 20.0Vdc, 3.0A
264V	50Hz	0.525	--	66.16	--	F1	0.525	Load with 20.0Vdc, 3.0A
264V	60Hz	0.523	--	66.10	--	F1	0.523	Load with 20.0Vdc, 3.0A
Model: MC-601								
90V	50Hz	0.691	--	37.04	--	F1	0.691	Load with 11.0Vdc, 3.0A
90V	60Hz	0.695	--	37.11	--	F1	0.695	Load with 11.0Vdc, 3.0A
100V	50Hz	0.658	1.7	36.79	--	F1	0.658	Load with 11.0Vdc, 3.0A
100V	60Hz	0.662	1.7	36.84	--	F1	0.662	Load with 11.0Vdc, 3.0A
240V	50Hz	0.323	1.7	36.41	--	F1	0.323	Load with 11.0Vdc, 3.0A
240V	60Hz	0.319	1.7	36.35	--	F1	0.319	Load with 11.0Vdc, 3.0A
264V	50Hz	0.302	--	36.59	--	F1	0.302	Load with 11.0Vdc, 3.0A
264V	60Hz	0.299	--	36.52	--	F1	0.299	Load with 11.0Vdc, 3.0A
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured.								

B.3, B.4		TABLE: Abnormal operating and fault condition tests					P
Ambient temperature T <sub>amb</sub> (°C).....					See below		—
Power source for EUT: Manufacturer, model/type, outputrating....					See appended table 4.1.2		—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation	
Model: MC-601 (load with 11.0Vdc, 3.0A for long working)							

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
Output	Overload	264Vac	6h49mins	F1	0.302→ 0.323→ 0.02	The maximum output current was 3.16A, when load to 3.17A, the unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 10.98Vdc, Touch current (output +/- to earth): 0.074mA <sub>pk</sub> ; Plastic enclosure to earth: 0.02mA <sub>pk</sub> . Maximum measured temperature: 1. T1 coil: 91.5°C; 2. T1 core: 87.2°C; 3. Plug holder outside: 50.1°C; 4. Enclosure outside near T1: 61.2 °C; 5. Ambient: 25.0°C
Transformer T1 pin 5 to 6 after U2	Overload	264Vac	6h35mins	F1	0.302→ 0.475→ 0.02	Output port normal load, The transformer maximum output current was 2.0A, when load to 2.1A, the unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 10.98Vdc, Touch current (output +/- to earth): 0.074mA <sub>pk</sub> ; Plastic enclosure to earth: 0.02mA <sub>pk</sub> . Maximum measured temperature: 1. T1 coil: 93.1°C; 2. T1 core: 89.4°C; 3. Plug holder outside: 51.5°C; 4. Enclosure outside near T1: 62.8°C; 5. Ambient: 25.0°C
Model: MC-681 (load with 20.0Vdc, 3.0A for 5 minutes, then reduced to 20.0Vdc, 2.25A for 5 minutes, then reduced to 20.0Vdc, 1.67A for long working as specification)						
Output	Overload	264Vac	7h21mins	F1	0.525→ 0.399→ 0.308→ 0.386→ 0.02	The maximum output current was 2.10A, when load to 2.11A, the unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 20.01Vdc, Touch current (output +/- to

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
						earth): 0.074mA <sub>pk</sub> ; Plastic enclosure to earth: 0.02mA <sub>pk</sub> . Maximum measured temperature: 1. T1 coil: 95.4°C; 2. T1 core: 89.1°C; 3. Plug holder outside: 53.6°C; 4. Enclosure outside near T1: 62.7°C; 5. Ambient: 25.0°C
Transformer T1 pin 5 to 6 after U2	Overload	264Vac	7h40mins	F1	0.525→ 0.399→ 0.308→ 0.601→ 0.02	Output port normal load, The transformer maximum output current was 1.9A, when load to 2.0A, the unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 20.01V <sub>dc</sub> , Touch current (output +/- to earth): 0.074mA <sub>pk</sub> ; Plastic enclosure to earth: 0.02mA <sub>pk</sub> . Maximum measured temperature: 1. T1 coil: 97.1°C; 2. T1 core: 91.5°C; 3. Plug holder outside: 54.8°C; 4. Enclosure outside near T1: 63.4°C; 5. Ambient: 25.0°C
BD1 pin 1 to 2 #	SC	264Vac	1 s	F1	0	F1 open immediately. NT, NC, NB. Prospective Touch Voltage: 0V <sub>dc</sub> , Touch current (output +/- to earth): 0.088mA <sub>pk</sub> . Plastic enclosure to earth: 0.02mA <sub>pk</sub> .
EC1 #	SC	264Vac	1 s	F1	0	F1 open immediately. NT, NC, NB. Prospective Touch Voltage: 0V <sub>dc</sub> , Touch current (output +/- to earth): 0.088mA <sub>pk</sub> . Plastic enclosure to earth: 0.02mA <sub>pk</sub> .
EC2 #	SC	264Vac	1 s	F1	0	F1 open immediately. NT, NC, NB. Prospective Touch Voltage: 0V <sub>dc</sub> , Touch current (output +/- to earth):

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Clause	Requirement + Test				Result - Remark	
						0.088mA <sub>p</sub> . Plastic enclosure to earth: 0.02mA <sub>p</sub> .
EC3 #	SC	264Vac	1 s	F1	0	F1 open immediately. NT, NC, NB. Prospective Touch Voltage: 0V <sub>dc</sub> , Touch current (output +/- to earth): 0.088mA <sub>p</sub> . Plastic enclosure to earth: 0.02mA <sub>p</sub> .
D2 #	SC	264Vac	1 s	F1	0	F1 open immediately. NT, NC, NB. Prospective Touch Voltage: 0V <sub>dc</sub> , Touch current (output +/- to earth): 0.088mA <sub>p</sub> . Plastic enclosure to earth: 0.02mA <sub>p</sub> .
R19 #	SC	264Vac	1 s	F1	0	F1 open immediately. NT, NC, NB. Prospective Touch Voltage: 0V <sub>dc</sub> , Touch current (output +/- to earth): 0.088mA <sub>p</sub> . Plastic enclosure to earth: 0.02mA <sub>p</sub> .
U1 pin 1 to 7 #	SC	264Vac	1 s	F1	0	F1 open immediately. NT, NC, NB. Prospective Touch Voltage: 0V <sub>dc</sub> , Touch current (output +/- to earth): 0.088mA <sub>p</sub> . Plastic enclosure to earth: 0.02mA <sub>p</sub> .
U1 pin 4 to 7 #	SC	264Vac	1 s	F1	0	F1 open immediately. NT, NC, NB. Prospective Touch Voltage: 0V <sub>dc</sub> , Touch current (output +/- to earth): 0.088mA <sub>p</sub> . Plastic enclosure to earth: 0.02mA <sub>p</sub> .
U1 pin 8 to 9 #	SC	264Vac	1 s	F1	0	F1 open immediately. NT, NC, NB. Prospective Touch Voltage: 0V <sub>dc</sub> , Touch current (output +/- to earth): 0.088mA <sub>p</sub> . Plastic enclosure to earth: 0.02mA <sub>p</sub> .
Q1 pin 1 to 3	SC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0V <sub>dc</sub> , Touch current (output +/- to earth): 0.074mA <sub>p</sub> . Plastic enclosure to earth: 0.02mA <sub>p</sub> .
Q1 pin 2 to 3	SC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0V <sub>dc</sub> , Touch current (output +/- to earth):

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	Verdict
						0.074mApk. Plastic enclosure to earth: 0.02mApk.
Q1 pin 1 to 2	SC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0Vdc, Touch current (output +/- to earth): 0.074mApk. Plastic enclosure to earth: 0.02mApk.
U3 pin 1 to 2	SC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0Vdc, Touch current (output +/- to earth): 0.074mApk. Plastic enclosure to earth: 0.02mApk.
U3 pin 3 to 4	SC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0Vdc, Touch current (output +/- to earth): 0.074mApk. Plastic enclosure to earth: 0.02mApk.
U3 pin 1	OC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0Vdc, Touch current (output +/- to earth): 0.074mApk. Plastic enclosure to earth: 0.02mApk.
U3 pin 3	OC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0Vdc, Touch current (output +/- to earth): 0.074mApk. Plastic enclosure to earth: 0.02mApk.
T1 pin 1 to 2	SC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0Vdc, Touch current (output +/- to earth): 0.074mApk. Plastic enclosure to earth: 0.02mApk.
T1 pin 3 to 4	SC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0Vdc, Touch current (output +/- to earth): 0.074mApk. Plastic enclosure to earth: 0.02mApk.

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Clause	Requirement + Test				Result - Remark	Verdict
						to earth: 0.02mApk.
T1 pin 3 to 8	SC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0Vdc, Touch current (output +/- to earth): 0.074mApk. Plastic enclosure to earth: 0.02mApk.
T1 pin 5 to 6	SC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0Vdc, Touch current (output +/- to earth): 0.074mApk. Plastic enclosure to earth: 0.02mApk.
U2 pin 7 to 1	SC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0Vdc, Touch current (output +/- to earth): 0.074mApk. Plastic enclosure to earth: 0.02mApk.
EC7	SC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0Vdc, Touch current (output +/- to earth): 0.074mApk. Plastic enclosure to earth: 0.02mApk.
Q2 pin D to S	SC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0Vdc, Touch current (output +/- to earth): 0.074mApk. Plastic enclosure to earth: 0.02mApk.
Output	SC	264Vac	10 mins	F1	0.02	The unit shut down immediately. Recoverable. NT, NC, NB. Prospective Touch Voltage: 0Vdc, Touch current (output +/- to earth): 0.074mApk. Plastic enclosure to earth: 0.02mApk.
Supplementary information:						
<p>1. SC: short circuit, OC: open circuit.</p> <p>2. # All tested with each source of fuse in table 4.1.2. No ignition during and after all tests, and had same test result.</p> <p>3. Results Key: NB=No indication of dielectric breakdown; NC=Cheesecloth remained intact; NT=Tissue paper remained intact; IP=Internal protection operated (list component); CD=Components damaged (list</p>						

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

damaged components)

[ x ] During and after abnormal operating condition test, the output voltage did not increase by more than 3V or 10% which one is higher of its rated output voltage under normal operating condition (for USB port);

[ ] During and after abnormal operating condition test, the output voltage did not increase by more than 10% of its rated output voltage under normal operating condition (For other outlet or connector at ES1).

Note:

Tested for Transformer insulation system: ChongQing JinLai Technology Corp / JLIIL-130.

Tested with CY1=220pF

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.							

<b>M.4.2</b>	<b>TABLE: Charging safeguards for equipment containing a secondary lithium battery</b>						N/A
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)			
--	--	--	--	--	--		



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

## 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 <sub>oc</sub> (V)	Time (s)	I <sub>sc</sub> (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
Model: MC-601 (output: 5.0Vdc, 3.0A)							
USB-C Output	Normal	5.30	5	3.25	8.0	15.47	100
USB-C Output	U2 pin 7 to 1 SC #	0	5	0	8.0	0	100
USB-C Output	Q2 pin D to S SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 1 to 2 SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 3 to 4 SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 1 OC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 3 OC #	0	5	0	8.0	0	100
USB-C Output	R19 SC **	0	5	0	8.0	0	100
USB-C Output	R35 SC	5.30	5	6.29	8.0	32.58	100
Model: MC-601 (output: 9.0Vdc, 3.0A)							
USB-C Output	Normal	9.01	5	3.25	8.0	27.43	100
USB-C Output	U2 pin 7 to 1 SC #	0	5	0	8.0	0	100
USB-C Output	Q2 pin D to S SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 1 to 2 SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 3 to 4 SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 1 OC #	0	5	0	8.0	0	100

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
USB-C Output	U3 pin 3 OC #	0	5	0	8.0	0	100
USB-C Output	R19 SC **	0	5	0	8.0	0	100
USB-C Output	R35 SC	9.01	5	6.27	8.0	55.11	100
Model: MC-601 (output: 15.0Vdc, 3.0A)							
USB-C Output	Normal	15.01	5	3.26	8.0	47.11	100
USB-C Output	U2 pin 7 to 1 SC #	0	5	0	8.0	0	100
USB-C Output	Q2 pin D to S SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 1 to 2 SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 3 to 4 SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 1 OC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 3 OC #	0	5	0	8.0	0	100
USB-C Output	R19 SC **	0	5	0	8.0	0	100
USB-C Output	R35 SC	15.01	5	5.25	8.0	74.18	100
Model: MC-601 (output: 20.0Vdc, 3.0A)							
USB-C Output	Normal	20.01	5	3.26	8.0	63.41	100
USB-C Output	U2 pin 7 to 1 SC #	0	5	0	8.0	0	100
USB-C Output	Q2 pin D to S SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 1 to 2 SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 3 to 4 SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 1 OC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 3 OC #	0	5	0	8.0	0	100
USB-C Output	R19 SC **	0	5	0	8.0	0	100

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
USB-C Output	R35 SC	20.01	5	4.77	8.0	94.64	100
Model: MC-601 (output: 11.0Vdc, 3.0A)							
USB-C Output	Normal	10.98	5	3.26	8.0	33.38	100
USB-C Output	U2 pin 7 to 1 SC #	0	5	0	8.0	0	100
USB-C Output	Q2 pin D to S SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 1 to 2 SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 3 to 4 SC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 1 OC #	0	5	0	8.0	0	100
USB-C Output	U3 pin 3 OC #	0	5	0	8.0	0	100
USB-C Output	R19 SC **	0	5	0	8.0	0	100
USB-C Output	R35 SC	10.98	5	6.27	8.0	64.46	100
Supplementary Information: for refer only							
SC=Short circuit, OC=Open circuit							
#: means unit shut down immediately, recoverable, no hazard, no damage.							
**: means fuse open immediately, 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	
Internal component (T.2)	--	--	Fig. V.2	10	5	Clearances and creepage were not reduced.	
# Enclosure top	See appended table 4.1.2	Min. 1.5	Circular plane surface 30 mm in diameter	100	5	No distortion, no damaged. Clearances and creepage were not reduced.	

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Clause	Requirement + Test			Result - Remark		Verdict
# Enclosure side	See appended table 4.1.2	Min. 1.5	Circular plane surface 30 mm in diameter	100	5	No distortion, no damaged. Clearances and creepage were not reduced.
# Enclosure bottom	See appended table 4.1.2	Min. 1.5	Circular plane surface 30 mm in diameter	100	5	No distortion, no damaged. Clearances and creepage were not reduced.
Supplementary information:						
#: All enclosure material sources have evaluation test, same result came out.						

T.6, T.9	TABLE: Impact test				N/A
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
--	--	--	--	--	
Supplementary information:					

T.7	TABLE: Drop test				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
# Enclosure top	See appended table 4.1.2	Min. 1.5	1000	No distortion, no damaged. Clearances and creepage were not reduced.	
# Enclosure side	See appended table 4.1.2	Min. 1.5	1000	No distortion, no damaged. Clearances and creepage were not reduced.	
# Enclosure bottom	See appended table 4.1.2	Min. 1.5	1000	No distortion, no damaged. Clearances and creepage were not reduced.	
Supplementary information:					
#: All enclosure material sources have evaluation test, same result came out.					

<b>T.8</b>	<b>TABLE: Stress relief test</b>					P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
# Enclosure	See appended table 4.1.2	Min. 1.5	97	7	No distortion, No softening, no cracking.	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
# Insulation barrier	See appended table 4.1.2	Min. 0.75	99	7	No distortion, No softening, no cracking.
Supplementary information:					
#: All enclosure and Insulation barrier material sources have evaluation test, same result came out.					

<b>X</b>	<b>TABLE: Alternative method for determining minimum clearances distances</b>			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: Critical components information					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>	
Plastic enclosure and plug holder	DONGGUAN JINHUA INDUSTRT CO LTD	HZ-88	PC, V-0, min. 115°C, min. thickness 1.5mm	UL 94, UL 746C	UL E357034	
(Alternative)	Covestro Deutschland AG [PC Resins]	FR6005 + (z)	PC, V-0, min. 105°C, min. thickness 1.5mm	UL 94, UL 746C	UL E41613	
(Alternative)	WANHUA CHEMICAL (Ningbo) CO LTD	FR3730(##)	PC, V-0, min. 105°C, min. thickness 1.5mm	UL 94, UL 746C	UL E513123	
(Alternative)	DongGuan TPIPLASTIC Co., Ltd.	PC 618-R(aa) (f1), PC 61(aa)-FR (f1)	PC, V-0, min. 125°C, min. thickness 1.5mm	UL 94, UL 746C	UL E538923	
Japan plug	Dongguan Aohai Technology Co.,Ltd.	A1231-US1	250Vac, 1.7A	JIS C 8303: 2007	See Attachment No. 2	
Insulation barrier	SABIC INNOVATIVE PLASTICS B V	945(GG)	PC, V-2, min. 120°C, min. thickness 0.8mm	UL 94, UL 746C	UL E45329	
(Alternative)	WANHUA CHEMICAL (Ningbo) CO LTD	FR3730(##)	PC, less than 4 grams, min. 105°C, min. thickness 0.75mm	UL 94, UL 746C	UL E513123	
(Alternative)	Covestro Deutschland AG [PC Resins]	FR6005 + (z)	PC, V-0, min. 105°C, min. thickness 1.5mm	UL 94, UL 746C	UL E41613	
(Alternative)	DongGuan TPIPLASTIC Co., Ltd.	PC 618-R(aa) (f1), PC 61(aa)-FR (f1)	PC, V-0, min. 125°C, min. thickness 1.5mm	UL 94, UL 746C	UL E538923	
(Alternative)	DONGGUAN JINHUA INDUSTRT CO LTD	HZ-88	PC, less than 4 grams, min. 115°C, min. thickness 0.75mm	UL 94, UL 746C	UL E357034	
PCB	SHENZHEN ZHONG LUO ELECTRONICS CO LTD	ZL-04	V-0, 130°C	UL 94, UL 796	UL E255554	
(Alternative)	Interchangeable	Interchangeable	V-1 or better, min. 130°C	UL 94, UL 796	UL	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Input wire	DONGGUAN ZHONGZHENG WIRE & CABLE TECH CO LTD	3385	VW-1, 105°C, 300Vac, min. 22AWG	UL 758	UL E336285
(Alternative)	Interchangeable	Interchangeable	VW-1, min. 105°C, min. 300Vac, min. 22AWG	UL 758	UL
Fuse (F1)	XC ELECTRONICS (SHENZHEN) CORP LTD	4T	T3.15AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40029295 UL E249609
(Alternative)	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	334 - Serie(s) (for VDE) 334 (for UL)	T3.15AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40025428 UL E300003
(Alternative)	SUZHOU WALTER ELECTRONIC CO LTD	2010	T3.15AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018781 UL E56092
(Alternative)	SHENZHEN LANSON ELECTRONICS CO., LTD.	3N	T3.15AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40016660 UL E221465
(Alternative)	HONGHU BLUELIGHT ELECTRONIC CO LTD	L3CT	T3.15AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40033206 UL E324232
Heat shrinkable tube (used for F1)	SHENZHEN WOER HEAT- SHRINKABLE MATERIAL CO LTD	RSFR-HPF	VW-1, 125°C, 600V	UL 224	UL E203950
(Alternative)	Interchangeable	Interchangeable	VW-1, min. 125°C, min. 300V	UL 224	UL
Line choke (L1)	ZheJiang Jiyang Electronic Technology Co. Ltd.	T6*3*3	Min. 130°C	IEC/EN 62368-1	Test with appliance
(Alternative)	HuiZhou Deli Electronics Co., Ltd.	T6*3*3	Min. 130°C	IEC/EN 62368-1	Test with appliance
(Alternative)	B&M Magnetism Technology (H.K) Limited	T6*3*3	Min. 130°C	IEC/EN 62368-1	Test with appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	IC ELECTRONICS CO LTD	T6*3*3	Min. 130°C	IEC/EN 62368-1	Test with appliance
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	IEC/EN 62368-1	Test with appliance
-Bobbin	CHANG CHUN PLASTICS CO LTD	T200HF, T220NA, T375HF, T375J(G5)(G6), T200NA	Phenolic, min. 0.45mm, V-0, 150°C	UL 94	UL E59481
(Alternative)	CHANG CHUN PLASTICS CO LTD	T373J	Phenolic, min. 1.0mm, min. V-1, 150°C	UL 94	UL E59481
(Alternative)	SUMITOMO BAKELITE CO LTD	PM-9823, PM-9630, PM-9820, PM-9825	Phenolic, min. 0.45mm, V-0, 150°C	UL 94	UL E41429
- Magnet wire	PROSPERITY ELECTRIC WIRE & CABLE CO	UEWF@, UEW-NY@, UEWH+NY@, UEWFNY@	Min. 130°C	UL 1446	UL E196072
(Alternative)	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEW/U@, UEWH/U@, UEWN/U@, UEWS/U	Min. 130°C	UL 1446	UL E201757
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
- Triple insulation wire	Heyuan Koshen Insulator Co Ltd	TIW-*-*-* (for VDE) TIW-B* (a), TIW-B-LITZ (for UL)	130°C	IEC/EN 62368-1, UL 2353	VDE 40039102 UL E365580
(Alternative)	Huizhou Golden Ocean Wire Co., Ltd. (for VDE) HUIZHOU GOLDEN OCEAN MAGNET WIRE FACTORY (for UL)	XYW-F(xx), XYW (F) (for VDE) XYW-F (xx), XYW(F) (xx) (for UL)	155°C	IEC/EN 62368-1, UL 2353	VDE 40017563 UL E251775
(Alternative)	SHANGHAI XIANGXIANG ELECTRON CO LTD	TKW-B	130°C	IEC/EN 62368-1, UL 2353	VDE 40026588 UL E308908



IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Line choke (L2)	ZheJiang Jiyang Electronic Technology Co. Ltd.	L-DM	Min. 130°C	IEC/EN 62368-1	Test with appliance
(Alternative)	HuiZhou Deli Electronics Co., Ltd.	L-DM	Min. 130°C	IEC/EN 62368-1	Test with appliance
(Alternative)	B&M Magnetism Technology (H.K) Limited	L-DM	Min. 130°C	IEC/EN 62368-1	Test with appliance
(Alternative)	IC ELECTRONICS CO LTD	L-DM	Min. 130°C	IEC/EN 62368-1	Test with appliance
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	IEC/EN 62368-1	Test with appliance
-Bobbin	CHANG CHUN PLASTICS CO LTD	T200HF, T220NA, T375HF, T375J(G5)(G6), T200NA	Phenolic, min. 0.45mm, V-0, 150°C	UL 94	UL E59481
(Alternative)	CHANG CHUN PLASTICS CO LTD	T373J	Phenolic, min. 1.0mm, min. V-1, 150°C	UL 94	UL E59481
(Alternative)	SUMITOMO BAKELITE CO LTD	PM-9823, PM-9630, PM-9820, PM-9825	Phenolic, min. 0.45mm, V-0, 150°C	UL 94	UL E41429
- Heat shrinkable tube	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR-HPF	VW-1, 125°C, 600V	UL 224	UL E203950
(Alternative)	Interchangeable	Interchangeable	VW-1, min. 125°C, min. 300V	UL 224	UL
- Magnet wire	PROSPERITY ELECTRIC WIRE & CABLE CO	UEWF@, UEW-NY@, UEW+NY@, UEWFN@	Min. 130°C	UL 1446	UL E196072
(Alternative)	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEW/U@, UEW+U@, UEWN/U@, UEWS/U	Min. 130°C	UL 1446	UL E201757
(Alternative)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Thermistor (RT1)	Joyin Co Ltd	8S040X, 08S040X	Operating surface temperature: 110°C, max. 2A, 240V	UL 1434	UL E171531
(Alternative)	Interchangeable	Interchangeable	Operating surface temperature: 110°C, max. 2A, 240V	UL 1434	UL / Tested with appliance
Thermistor (RT2)	Joyin Co Ltd	JSNB104	100kΩ at 25°C, 125°C	UL 1434	UL E171531
(Alternative)	Interchangeable	Interchangeable	100kΩ at 25°C, 125°C	UL 1434	UL
Electrolytic Capacitors (EC1, EC2, EC3)	Interchangeable	Interchangeable	Each max. 22μF, min. 400V, min. 115°C	IEC/EN 62368-1	Tested with appliance
Bridging Rectifier diode (BD1)	Interchangeable	Interchangeable	Min. 2A, min. 700V	IEC/EN 62368-1	Tested with appliance
Current sensor resistor (R15)	Interchangeable	Interchangeable	Min. 0.47Ω, min. 1/4W	IEC/EN 62368-1	Tested with appliance
Current sensor resistor (R18, R19)	Interchangeable	Interchangeable	Min. 0.39Ω, min. 1/4W	IEC/EN 62368-1	Tested with appliance
Opto-coupler (U3)	LITE-ON Technology Corporation	LTV-10XX, where X can be any number between 0-9.	Reinforced insulation, Dti≥0.4mm, Ext. cl≥8.0mm, Ext. cr≥8.0mm, min. 115°C, Double protection optical isolators having an isolation voltage of 5000 V ac	IEC/EN 60747-5-5, UL 1577	VDE 138213 UL E113898
(Alternative)	CT Micro International Corporation (for VDE) CT Microelectronics Far East Ltd (for UL)	CT1(X1)1(X2)(X3) V (Y)(Z)-(H)(G) (for VDE) CT101(X1)(X2) (for UL)	Reinforced insulation, Dti≥0.4mm, Ext. cl≥8.0mm, Ext. cr≥8.0mm, min. 110°C, Double protection optical isolators rated for 5000 vac	IEC/EN 60747-5-5, UL 1577	VDE 40039590 UL E364000

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	CT Micro International Corporation (for VDE) CT Microelectronics Far East Ltd (for UL)	CT1(X1)1(X2)(X3) V (Y)(Z)-W-(H)(G) (for VDE) CT101(X1)(X2)-W (for UL)	Reinforced insulation, $D_{ti} \geq 0.4\text{mm}$ , Ext. $cl \geq 8.2\text{mm}$ , Ext. $cr \geq 8.2\text{mm}$ , min. $125^{\circ}\text{C}$ , Double protection optical isolators rated for 5000 vac	IEC/EN 60747-5-5, UL 1577	VDE 40039590 UL E364000
(Alternative)	CRM ICBG (Wuxi) Co Ltd	HK1018	Reinforced insulation, $D_{ti} \geq 0.4\text{mm}$ , Ext. $cl \geq 8.0\text{mm}$ , Ext. $cr \geq 8.0\text{mm}$ , min. $110^{\circ}\text{C}$ , Double protected optical isolators rated for 5000 vrms isolation	IEC/EN 60747-5-5, UL 1577	VDE 40050440 UL E465130
(Alternative)	EVERLIGHT ELECTRONICS CO LTD	EL101(0;1;2;3;4;5;6;7;8;9) V, EL101(0;1;2;3;4;5;6;7;8;9)H V (for VDE) EL101XH, EL10XX (for UL)	Reinforced insulation, $D_{ti} \geq 0.4\text{mm}$ , Ext. $cl \geq 8.1\text{mm}$ , Ext. $cr \geq 8.1\text{mm}$ , min. $110^{\circ}\text{C}$ , Double protection optical isolators, providing 5000 vac isolation	IEC/EN 60747-5-5, UL 1577	VDE 40028391 UL E214129
(Alternative)	NingBo Qunxin Microelectronics Co., LTD	QX10xx-UNY-W	Reinforced insulation, $D_{ti} \geq 0.4\text{mm}$ , Ext. $cl \geq 8.0\text{mm}$ , Ext. $cr \geq 8.0\text{mm}$ , min. $110^{\circ}\text{C}$ , Double protection optical isolators at 5000 Vac isolation voltage	IEC/EN 60747-5-5, UL 1577	VDE 40051490 UL E509768
(Alternative)	Fujian Fushun Semiconductor Manufacturing Co Ltd	UPC10XXX	Reinforced insulation, $D_{ti} \geq 0.4\text{mm}$ , Ext. $cl \geq 8.0\text{mm}$ , Ext. $cr \geq 8.0\text{mm}$ , min. $110^{\circ}\text{C}$ , Double protection type, providing 5000 Vac isolation	UL 1577	UL E478846

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Y-Capacitor (CY1)	SHANTOU FREE TRADE ZONE SONGTIAN ELECTRONIC TECHNOLOGY CO LTD	SMD	Max. 220pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40058861 UL E530201
(Alternative)	Sichuan TRX Technology Co.,Ltd.	TRX series (for ENEC) TRX (for UL)	Max. 220pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	ENEC-02084-M1 UL E315719
(Alternative)	Huizhou Jingqin Electronic Components Co Ltd	SMD	Max. 220pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	ENEC-04145 UL E529031
Transformer (T1)	ChongQing JinLai Technology Corp	PQ20-A1231	Class B	IEC/EN/UL 62368-1	Tested with appliance
- Insulation system	ChongQing JinLai Technology Corp	JLIII-130	Class B, table III	UL 1446	UL E360641
- Coil	Interchangeable	MW 28, MW 75, MW 79, MW 80, MW 82, MW 83, MW 85	Min. 130°C	UL 1446	UL
- Bobbin	CHANG CHUN PLASTICS CO LTD	T200HF, T220NA, T375HF, T375J(G5)(G6), T200NA	Phenolic, min. 0.45mm, V-0, 150°C	UL 94	UL E59481
(Alternative)	CHANG CHUN PLASTICS CO LTD	T373J	Phenolic, min. 1.0mm, min. V-1, 150°C	UL 94	UL E59481
(Alternative)	SUMITOMO BAKELITE CO LTD	PM-9630, PM-9820, PM-9825, PM-9823	Phenolic, min. 0.45mm, V-0, 150°C	UL 94	UL E41429
-Triple insulation wire	Furukawa Electric Co., Ltd.	TEX-E, TEX-EA	130°C	IEC/EN 62368-1, UL 2353	VDE 006735 UL E206440
(Alternative)	Huizhou Huaying Electronic Technology Co Ltd	MIW-B* (for VDE) MIW-B * (for UL)	130°C	IEC/EN 62368-1, UL 2353	VDE 40047994 UL E470559

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
- Insulation tape outside triple insulation wire (Secondary)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g), CT* (b)(g), WF* (c)(h), CT-280B, CT-285B, PF* (d)(g), PZ* (b)(g)	Min. 130°C	UL 510A	UL E165111
(Alternative)	SYMBIO INC	35660, 35660W, 35660Y (e), 35661, MY130 (b), MY9XAF	130°C	UL 510A	UL E50292
(Alternative)	DONGGUAN SHIN YAHUA ELECTRONIC MATERIAL CO LTD	CT* (c)(g), CT* (b)(g), PZ* (b), WF*(c)(h)	130°C	UL 510A	UL E324093
(Alternative)	3M COMPANY	1350-1 (b), 1350F-1 (b), 44 (a)	130°C	UL 510A	UL E17385
(Alternative)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX*	130°C	UL 510A	UL E246820
- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g), CT* (b)(g), WF* (c)(h), CT-280B, CT-285B, PF* (d)(g), PZ* (b)(g)	Min. 130°C	UL 510A	UL E165111
(Alternative)	SYMBIO INC	35660, 35660W, 35660Y (e), 35661, MY130 (b), MY9XAF	130°C	UL 510A	UL E50292
(Alternative)	DONGGUAN SHIN YAHUA ELECTRONIC MATERIAL CO LTD	CT* (c)(g), CT* (b)(g), PZ* (b), WF*(c)(h)	130°C	UL 510A	UL E324093
(Alternative)	3M COMPANY	1350-1 (b), 1350F-1 (b), 44 (a)	130°C	UL 510A	UL E17385

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX*	130°C	UL 510A	UL E246820
-Varnish	ELANTAS ZHUHAI CO LTD	468-2 (d), 468-2FC(d)	Min. 130°C	UL 1446	UL E314793
(Alternative)	Resonac Corporation	WP-2952F- 2G, WP-2952F- 2G(Y), WP-2952F- 2G(YL), WP-2952F- 2G(FC), WP-2952F- 2G(H), WP-2952F- 2G(K)	Min. 130°C	UL 1446	UL E72979
(Alternative)	John C Dolph Co	BC-346A, BC-346-A, BC-346B, BC-346-E, BB-348, BB-346-HF, BC-346HF, BG-346A, BB-346-A, BB-346/A, BC-370	Min. 130°C	UL 1446	UL E317427
(Alternative)	ELANTAS North America, Inc	468-2 (d), 468-2FC (d), 468-2-7-xxF (d), 468-2-7FC-xxF (d)	Min. 130°C	UL 1446	UL E75225
Transformer (T1) (Alternative)	SHENG YUAN BAC NINH ELECTRONIC ENGINEERING SCIENCE CO., Ltd	PQ20-A1231	Class B	IEC/EN/UL 62368-1	Tested with appliance
- Insulation system	SHENG YUAN BAC NINH ELECTRONIC ENGINEERING SCIENCE CO., Ltd	SY-SYVN03	Class B, table III	UL 1446	UL E493071

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
- Coil	Interchangeable	MW 28, MW 75, MW 79, MW 80, MW 82, MW 83	Min. 130°C	UL 1446	UL
- Bobbin	CHANG CHUN PLASTICS CO LTD	T200HF, T200NA, T375HF, T375J(G5)(G6 ) , T220NA	Phenolic, min. 0.45mm, V-0, 150°C	UL 94	UL E59481
(Alternative)	SUMITOMO BAKELITE CO LTD	PM-9630, PM-9820, PM-9825, PM-9823	Phenolic, min. 0.45mm, V-0, 150°C	UL 94	UL E41429
-Triple insulation wire	E&B TECHNOLOGY CO LTD	E&B- XXX*YYZB, E&B-XXXB* / E&B-XXXB-1* (for VDE)  E&B- XXX*YYZB, E&B- XXX*YYZB-1, E&B-XXXB, E&B-XXXB-1 (for UL)	130°C	IEC/EN 62368-1, UL2353	VDE 40023473 UL E315265
- Insulation tape outside triple insulation wire (Secondary)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CP-3002, CT* (b)(g), CT* (c)(g), CT-280B, CT-282F, CT-285B, PF* (d)(g), PZ* (b)(g), WF* (c)(h)	130°C	UL 510A	UL E165111
(Alternative)	DONGGUAN SHIN YAHUA ELECTRONIC MATERIAL CO LTD	CT* (b)(g), CT* (c)(g), PF* (d)(g), PZ* (b), WF* (c)(h)	Min. 130°C	UL 510A	UL E324093
(Alternative)	3M COMPANY	1350-1 (b), 1350F-1 (b), 44 (a)	130°C	UL 510A	UL E17385

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	SYMBIO INC	35660, 35660Y (e), 35661, 35661-3 (h), KA00, KA02, KA180, KA180K, KA200, MY9XAF, MY9YAF (h)	Min. 130°C	UL 510A	UL E50292
(Alternative)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX*	130°C	UL 510A	UL E246820
- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CP-3002, CT* (b)(g), CT* (c)(g), CT-280B, CT-282F, CT-285B, PF* (d)(g), PZ* (b)(g), WF* (c)(h)	130°C	UL 510A	UL E165111
(Alternative)	DONGGUAN SHIN YAHUA ELECTRONIC MATERIAL CO LTD	CT* (b)(g), CT* (c)(g), PF* (d)(g), PZ* (b), WF* (c)(h)	Min. 130°C	UL 510A	UL E324093
(Alternative)	3M COMPANY	1350-1 (b), 1350F-1 (b), 44 (a)	130°C	UL 510A	UL E17385
(Alternative)	SYMBIO INC	35660, 35660Y (e), 35661, 35661-3 (h), KA00, KA02, KA180, KA180K, KA200, MY9XAF, MY9YAF (h)	Min. 130°C	UL 510A	UL E50292
(Alternative)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX*	130°C	UL 510A	UL E246820



IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
-Varnish	ELANTAS North America, Inc	V1630, V1630FS, V1630FS50, V1630FS Black, 80361, 80361FS	Min. 130°C	UL 1446	UL E75225
(Alternative)	ELANTAS ZHUHAI CO LTD	V1630FS, V1630, V1630FS50, V1630FS Black, 80361, 80361FS	Min. 130°C	UL 1446	UL E314793
(Alternative)	Guangdong Qiangda New Material Technology Co., Ltd.	DA-700-*	130°C	UL 1446	UL E347463
(Alternative)	John C Dolph Co	BC-346A, BC-346-A, BC-346B, BC-346-E, BB-348, BB-346-HF, BC-346HF, BG-346A, BB-346-A, BB-346/A, BC-370	Min. 130°C	UL 1446	UL E317427
(Alternative)	Resonac Corporation	WP-2952F-2G, WP-2952F-2G(Y), WP-2952F-2G(YL), WP-2952F-2G(FC), WP-2952F-2G(H), WP-2952F-2G(K)	Min. 130°C	UL 1446	UL E72979
Transformer (T1) (Alternative)	Huizhou Ruifan Technology Co Ltd	PQ20-A1231	Class B	IEC/EN/UL 62368-1	Tested with appliance
- Insulation system	Huizhou Ruifan Technology Co Ltd	RF-2	Class B, table I	UL 1446	UL E496068

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
- Coil	Interchangeable	MW 28, MW 75, MW 79, MW 80, MW 82, MW 83, MW 85	Min. 130°C	UL 1446	UL
- Bobbin	CHANG CHUN PLASTICS CO LTD	T200HF, T220NA, T375HF, T375J(G5)(G6 ) , T200NA	Phenolic, min. 0.45mm, V-0, 150°C	UL 94	UL E59481
(Alternative)	CHANG CHUN PLASTICS CO LTD	T373J	Phenolic, min. 1.0mm, min. V-1, 150°C	UL 94	UL E59481
(Alternative)	SUMITOMO BAKELITE CO LTD	PM-9630, PM-9820, PM-9825, PM-9823	Phenolic, min. 0.45mm, V-0, 150°C	UL 94	UL E41429
-Triple insulation wire	Furukawa Electric Co., Ltd.	TEX-E, TEX-EA	130°C	IEC/EN 62368-1, UL 2353	VDE 006735 UL E206440
(Alternative)	SHENZHEN KAIZHONG HEDONG NEW MATERIALS CO LTD	TIW-B, TIW-B-LITZ (for VDE) TIW-B*, TIW-B-LITZ* (for UL)	130°C	IEC/EN 62368-1, UL 2353	VDE 40038861 UL E357240
(Alternative)	TOTOKU INC.	TIW-3X\$+	155°C	IEC/EN 62368-1, UL 2353	VDE 40051888 UL E166483
- Insulation tape outside triple insulation wire (Secondary)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT (b)(g), CT* (b)(g), CT* (c)(g), CT-280B, CT-285B, PZ* (b)(g), WF* (c)(h)	130°C	UL 510A	UL E165111
(Alternative)	DONGGUAN SHIN YAHUA ELECTRONIC MATERIAL CO LTD	CT* (b)(g), CT* (c)(g), PZ* (b), WF* (c)(h)	130°C	UL 510A	UL E324093
(Alternative)	3M COMPANY	1350-1 (b), 44 (a)	130°C	UL 510A	UL E17385

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	SYMBIO INC	35660, 35660W, 35660Y (e), 35661, MY130 (b), MY9XAF	130°C	UL 510A	UL E50292
(Alternative)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX*	130°C	UL 510A	UL E246820
- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT (b)(g), CT* (b)(g), CT* (c)(g), CT-280B, CT-285B, PZ* (b)(g), WF* (c)(h)	130°C	UL 510A	UL E165111
(Alternative)	DONGGUAN SHIN YAHUA ELECTRONIC MATERIAL CO LTD	CT* (b)(g), CT* (c)(g), PZ* (b), WF* (c)(h)	130°C	UL 510A	UL E324093
(Alternative)	3M COMPANY	1350-1 (b), 44 (a)	130°C	UL 510A	UL E17385
(Alternative)	SYMBIO INC	35660, 35660W, 35660Y (e), 35661, MY130 (b), MY9XAF	130°C	UL 510A	UL E50292
(Alternative)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX*	130°C	UL 510A	UL E246820
-Varnish	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	Min. 130°C	UL 1446	UL E228349
(Alternative)	ELANTAS North America, Inc	468-2 (d), 468-2FC (d), 468-2-7-xxF (d), 468-2-7FC-xxF (d)	Min. 130°C	UL 1446	UL E75225

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	ELANTAS North America, Inc	V1630, V1630FS (For use on only MW 79, MW 80, MW 82, MW 83, MW 85)	Min. 130°C	UL 1446	UL E75225
(Alternative)	Guangdong Qiangda New Material Technology Co., Ltd.	DA-700-*	130°C	UL 1446	UL E347463
(Alternative)	John C Dolph Co	BC-346A, BC-346-A, BC-346B, BC-346-E, BB-348, BB-346-HF, BC-346HF, BG-346A, BB-346-A, BB-346/A, BC-370	Min. 130°C	UL 1446	UL E317427
(Alternative)	KYOCERA Corporation	TVB2180T	Min. 130°C	UL 1446	UL E83702
(Alternative)	YUEYANG GREEN TECHNOLOGY CO LTD	JX-1150(a)	Min. 155°C	UL 1446	UL E303754
(Alternative)	Resonac Corporation	WP-2952F-2G, WP-2952F-2G(Y), WP-2952F-2G(YL), WP-2952F-2G(FC), WP-2952F-2G(H), WP-2952F-2G(K)	Min. 130°C	UL 1446	UL E72979
Plastic of USB port	JIANGMEN DEZHONGTAI ENGINEERING PLASTICS TECHNOLOGY CO LTD	LCP M-401, LCP D-301, LCP D-301F, LCP M-401a, LCP M-401L, LCP M-501a	Secured and soldered to PCB. Copper alloy pins housed in bodies of plastic part rated min. V-1.	UL 94, UL 746C	UL E348011

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	KINGFA SCI & TECH CO LTD	Vicnyl R61(f)NH	Secured and soldered to PCB. Copper alloy pins housed in bodies of plastic part rated min. V-1.	UL 94, UL 746C	UL E171666
(Alternative)	Interchangeable	Interchangeable	Secured and soldered to PCB. Copper alloy pins housed in bodies of plastic part rated min. V-1.	UL 94, UL 746C	UL
Foam (used on primary components)	Interchangeable	Interchangeable	Less than 4 grams	IEC/EN 62368-1	Tested with appliance
Glue	Interchangeable	Interchangeable	Min. V-2	UL 94, UL 746C	UL
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2) License available upon request. 3) All transformers T1 are identical to each other except for insulation system and manufacturer.					