北京泰瑞特认证有限责任公司
BEIJING TIRT CERTIFICATION CO.,LTD.

职业健康安全管理体系认证证书

证书注册号： 04823S40067R2M　　初次获证时间：2017-03-28

兹证明：

统一社会信用代码：914419006698651618

熵基科技股份有限公司

注册地址：广东省东莞市塘厦镇平山工业大路 32 号
生产/经营地址：1、广东省东莞市塘厦镇平山工业大路 32 号 A 栋一楼和二楼、B 栋二楼
2、广东省东莞市樟木头镇樟木头滨河路 51 号二楼三楼四楼

建立的职业健康安全管理体系符合标准：

GB/T 45001-2020/ISO 45001:2018

通过认证范围如下：

带指纹、静脉、面部、虹膜生物识别技术的设备（包括考勤机、门禁机、安检设备）的设计开发、生产及相关管理活动。

本证书有效期： 2023-03-28—2026-03-27

发证日期： 2023-03-28

证书信息

签发人：胡华平

获证组织必须定期接受监督审核并经审核合格此证书方继续有效；请扫描证书信息二维码验证本证书有效性。

认证范围涉及法律法规要求的行政许可、资质许可、强制认证等资质，证书与资质共同使用有效。

中国认可
国际互认
管理体系
MANAGEMENT SYSTEM
CNAS C048-M

北京泰瑞特认证有限责任公司

地址：北京市朝阳区酒仙桥北路乙7号15楼7层

本证书信息可查询
www.tirt.org.cn
www.cnca.gov.cn

北京泰瑞特认证有限责任公司
BEIJING TIRT CERTIFICATION CO.,LTD.

OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM CERTIFICATE

Registration Number: 04823S40067R2M First Issued Date:2017-03-28

This is to certify that

Unified Social Credit Code:91441900669865161 8

ZKTECO CO., LTD.

Registered Address:No.32 pingshan industrial road, tangxia town, dongguan city, guangdong province
Production/Business Address:1. 1st and 2nd floor of building A, 2nd floor of building B, No.32 pingshan industrial road, tangxia town, dongguan city, guangdong province /2. Floor 2, floor 3, floor 4, No.51, binhe road, zhangmutou town, dongguan city, guangdong province

has implemented an occupational health & safety management system for compliance with this standard:

GB/T 45001-2020/ISO 45001:2018

The occupational health & safety management system for the following scope:

Design, development, production and related management activities of devices with fingerprint, vein, face and iris biometric technology (Including time attendance, access control and security equipment).

Valid date: 2023-03-28 — 2026-03-27

Issued date: 2023-03-28

Signed By: 胡华平

Certificate information

The effectiveness of this certificate shall be validated by periodic surveillance audit of TIRT for maintenance.
Please scan the QR code to verify the validity of this certificate.

The scope of certification covers administrative license, qualification license, compulsory certification and other qualifications required by laws and regulations, and the certificates are valid for use together.

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT IAF

CNAS

中国认可
国际互认
管理体系
MANAGEMENT SYSTEM
CNAS C048-M

北京泰瑞特认证有限责任公司

Add:7F, Building No.15, No.7, JiuXianQiao North RD, ChaoYang District, Beijing, China

Note: Information of This Certificate in http://www.tirt.org.cn www.cnca.gov.cn

TEST REPORT

Applicant: ZKTECO CO., LTD
Address: ZKTeco Industrial Park, No.26, 188 Industrial Road, Tangxia Town, Dongguan, China

The following sample(s) was/were submitted and identified on behalf of the client as:

Sample name: CMP200 motor reducer + Mainboard + Remote Receiver+Power supply
Model: CMP200
Number of sample: 1pc
Sample Received: 2020-11-10
Testing Period: 2020-11-10~2020-11-13

Test project: Low temperature test、High temperature test 、Constant humidity and heat
Test standard: According to customer requirements and reference standards and GB/T 2423.1-2008、GB/T 2423.2-2008、GB/T 2423.3-2016

Test results: Please refer to next page(s)

Wrote by: chengbo Reviewed by: Peter

Approved by: Date: 2020-11-16

Authorized signatory:

PRECISE TESTING & CERTIFICATION (GUANGDONG) CO.,LTD.

Precise Testing & Certification (Guangdong) Co.,Ltd.
Address Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China.
Tel: 86-769-3880 8222 Fax: 86-769-3882 6111
Mail: inquiry@ptc-testing.com http://www.ptc-testing.com

1 Test item: Low temperature test + High temperature test + Constant humidity and heat

1.1 Test equipment(s)

Name	Model	Equipment No.	Calibration validity period
Temperature & Humidity Test Chamber	H-PTH-2048CK	PTC-S-566	2021-09-09

1.2 Environmental condition(s)

Temperature	24.4℃
Humidity	49%RH

1.3 Test standard: According to customer requirements and reference standards and GB/T 2423.1-2008、GB/T 2423.2-2008、GB/T 2423.3-2016

1.4 Test condition(s):

1. Low temperature test: keep the temperature at -25℃ for 8H, then start the motor with the control board, and the motor reducer operates normally; The motor is started by remote control, and the motor reducer operates normally.
2. High temperature test: keep the temperature at 75℃ for 8H, then start the motor with the control board, and the motor reducer operates normally; The motor is started by remote control, and the motor reducer operates normally.
3. Constant humidity and heat: maintain 48H at a high temperature of 40℃ and 93%RH environment, and then start motor and motor reducer with control board Operating normally; The motor is started by remote control, and the motor reducer operates normally.

1.5 Judge Criteria: The equipment should be able to work normally during and after various climatic tests without any electrical faults, mechanism deformation, corrosion and bad contact phenomena.

1.6 Test Result(s):

Sample No.	Test result	Judge
PTC20103006901-001	The equipment should work normally during and after various climatic and environmental tests without any electrical faults, mechanism deformation, corrosion and bad contact.	Pass
Note: judgment requirements are provided by the customer.		

1.7 Test photo(s)

<table>
<tr><td> 
</td><td>  </td></tr>
<tr><td colspan="2">Test sample</td></tr>
<tr><td>  </td><td> 
</td></tr>
<tr><td>Low temperature-1</td><td>Low temperature-2</td></tr>
</table>

	
High temperature-1	High temperature-2
	
Constant heat and humidity -1	Constant heat and humidity -2

****End of Report****

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of, this report can't be reproduced except in full. The test results or data in this report will be used only for education, scientific research, enterprise product development and internal quality control or other purposes.

Precise Testing & Certification (Guangdong) Co.,Ltd.
Address Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China.
Tel: 86-769-3880 8222 Fax: 86-769-3882 6111
Mail: inquiry@ptc-testing.com http://www.ptc-testing.com

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检测
TESTING
CNAS L5772

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

Report Number.....:	PTC20090701603S-IE01
Date of issue.....:	Nov.04,2020
Total number of pages.....:	51
Tested by (name + signature).....:	Soap Hu Project Engineer
Approved by (name + signature).....:	Chris Du Reviewer
Testing Laboratory.....:	Precise Testing & Certification (Guangdong) Co., Ltd.
Address.....:	Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China.
Applicant's name.....:	ZKTECO CO., LTD
Address.....:	ZKTeco Industrial Park, No.26, 188 Industrial Road, Tangxia Town, Dongguan, China
Test specification:	
Standard.....:	IEC 62368-1:2014 (Second Edition)
Test procedure .....:	IEC Report
Non-standard test method……..:	N/A
Test Report Form No.....:	IEC62368_1B
Test Report Form(s) Originator.....:	UL (US)
Master TRF.....:	2014-03

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

General disclaimer:

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

Test item description.....:	Barrier Gate
Trade Mark.....:	ZKTeco
Manufacturer.....:	Same as Applicant
Address..... :	Same as Applicant
Model/Type reference.....:	CMP200
Ratings.....:	Input: 220-240~, 50/60Hz, 200W Max.

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

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Summary of testing:

The product fulfils the requirements of IEC 62368-1:2014 (Second Edition).

Tests performed (name of test and test clause):	**Testing location:**
Conduct thorough testing in the harshest of conditions.	Precise Testing & Certification (Guangdong) Co., Ltd. Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China.

Summary of compliance with National Differences:

List of countries addressed

For National Differences see end of this test report.

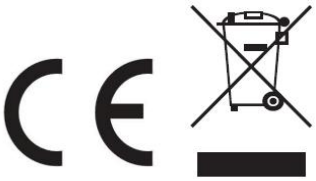
☐ **The product fulfils the requirements of _____ (insert standard number and edition and delete the text in parenthesis or delete the whole sentence if not applicable)**

Copy of marking plate

ZKTeco

Barrier Gate
Model: CMP200

Input: 220-240~, 50/60Hz, 200W Max.



Made in China

Note:

- As declared by the applicant, the importer (and manufacturer, if it is different)'s name, registered trade name or registered trade mark and the postal address will be marked on the products before being place on the market. The contact details shall be in a language easily understood by end-users and market surveillance authorities.

-The above markings are the minimum requirements required by the safety standard, For the final production, the additional markings which do not give rise to misunderstanding may be added.

-The high of "CE" and "WEEE" at least 5mm and 7mm.

- The Markings are attached on external enclosure and visible during normal use.

TEST ITEM PARTICULARS:	
Classification of use by..... :	☒ Ordinary person ☐ Instructed person ☐ Skilled person ☐ Children likely to be present
Supply Connection..... :	☒ AC Mains ☐ DC Mains ☐ External Circuit - not Mains connected - ☐ ES1 ☐ ES2 ☒ ES3
Supply % Tolerance ..... :	☒ +10%/-10% ☐ +20%/-15% ☐ +15 %/ -15 % ☐ None
Supply Connection – Type ..... :	☒ pluggable equipment type A - ☒ non-detachable supply cord ☐ appliance coupler ☐ direct plug-in ☐ mating connector ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☐ other:_____
Considered current rating of protective device as part of building or equipment installation..... :	16 A or 20A (16A for AS) Installation location: ☒ building; ☐ equipment
Equipment mobility..... :	☐ movable ☐ hand-held ☐ transportable ☒ stationary ☐ for building-in ☐ direct plug-in ☐ rack-mounting ☐ wall-mounted
Over voltage category (OVC) ..... :	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other: _____
Class of equipment ..... :	☐ Class I ☒ Class II ☐ Class III
Access location ..... :	☐ restricted access location ☒ N/A
Pollution degree (PD) ..... :	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maximum operating ambient..... :	40 °C
IP protection class ..... :	☐ IPX0 ☐ IP20___
Power Systems ..... :	☒ TN ☐ TT ☐ IT - 230 V $_{L-L}$
Altitude during operation (m) ..... :	☒ 2000 m or less ☐ m
Altitude of test laboratory (m) ..... :	☒ 2000 m or less ☐ _____ m
Mass of equipment (kg) ..... :	☒ >7kg

POSSIBLE TEST CASE VERDICTS:	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement.....	F (Fail)
TESTING:	
Date of receipt of test item.....	Oct.23,2020
Date (s) of performance of tests.....	Oct.23,2020 to Nov.04,2020
GENERAL REMARKS:	
"(See Enclosure #)" refers to additional information appended to the report. **"(See appended table)" refers to a table appended to the report.** **Throughout this report a ☐ comma / ☒ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☐ **Yes** ☒ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)..... :	Same as applicant
GENERAL PRODUCT INFORMATION:	
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ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input	ES1
Source of electrical energy	**Corresponding classification (ES)**

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
Primary circuit	ES3
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	**Corresponding classification (PS)**
Primary circuit	PS3
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component Glycol	
Source of hazardous substances	**Corresponding chemical**
N/A	N/A
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2	
Source of kinetic/mechanical energy	**Corresponding classification (MS)**
Sharp edges and corners	MS1
Equipment mass	MS3
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1	
Source of thermal energy	**Corresponding classification (TS)**
Enclosure	TS1
Wooden enclosure	N/A
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1	
Type of radiation	**Corresponding classification (RS)**
Signal indication LED	N/A

ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below
See above table **ES3 (on the left side of transformer T1), PS3 (on the left side of transformer T1), ES1(on the Right side of transformer T1), PS2 (on the left side of transformer T1),enclosure surface is TS1**

■ ES ■ PS ☐ MS ■ TS ☐ RS

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	**Possible Hazard**			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES3: primary circuit	N/A	N/A	Equipment to ensure
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source	Safeguards		
		Basic	Supplementary	Reinforced
Combustible materials within equipment	PS3: >100 Watt circuit (Primary circuit)	Equipment safeguard	Equipment safeguards	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1: Edges and corners	N/A	N/A	N/A
Mass of the unit	MS1	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS1: Plastic enclosure	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A

Supplementary Information:
(1) See attached energy source diagram for additional details.
(2) “N” – Normal Condition; “A” – Abnormal Condition; “S” Single Fault

EN 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
4.1.3	Equipment design and construction	No accessible part which could cause injury	P
4.1.15	Markings and instructions.....:	(See Annex F)	P
4.4.4	Safeguard robustness	See below	P
4.4.4.2	Steady force tests.....:		P
4.4.4.3	Drop tests.....:		N/A
4.4.4.4	Impact tests..... :		N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:	No internal enclosure.	N/A
4.4.4.6	Glass Impact tests..... :	No such glass used.	N/A
4.4.4.7	Thermoplastic material tests.....:		N/A
4.4.4.8	Air comprising a safeguard..... :	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness	After tests of 4.4.4.2, 4.4.4.3, 4.4.4.7, no safeguard damaged.	P
4.5	Explosion		N/A
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		P
4.6.2	10 N force test applied to ..... :	See appended table 5.4.2.2, 5.4.2.4 and 5.4.3	P
4.7	Equipment for direct insertion into mains socket - outlets		N/A
4.7.2	Mains plug part complies with the relevant standard..... :		N/A
4.7.3	Torque (Nm)..... :		N/A
4.8	Products containing coin/button cell batteries	No coin/button batteries used.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A

EN 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Means to reduce the possibility of children removing the battery.....:		—
4.8.4	Battery Compartment Mechanical Tests.....:		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object..... :	No likelihood of conductive object entrying into enclosure.	P
5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications..... :	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current..... :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits..... :		N/A
5.2.2.4	Single pulse limits.....:	No such single pulses with the EUT	N/A
5.2.2.5	Limits for repetitive pulses.....:	No such repetitive pulses with the EUT	N/A
5.2.2.6	Ringing signals ..... :	No such ringing signals with the EUT	N/A
5.2.2.7	Audio signals .....:	No such audio signals with the EUT	N/A
5.3	Protection against electrical energy sources	See below	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	See only 4.3 and 5.3 to 5.5 which applies to protection between the accessible parts and hazardous parts of other circuits.	P
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 circuit can be accessed for this product.	P
5.3.2.2	Contact requirements	No openings allowing entry of a probe. No access with test probe to any ES3 circuit or parts.	P
	a) Test with test probe from Annex V.....:	The test probe cannot accessed the hazardous live part	P
	b) Electric strength test potential (V)..... :		N/A
	c) Air gap (mm) ..... :	No openings.	N/A
5.3.2.4	Terminals for connecting stripped wire	No such terminals intended to be used by ordinary person.	N/A
5.4	Insulation materials and requirements		P

EN 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T except natural rubber, hygroscopic materials or asbestos are not used as insulation.	P
5.4.1.3	Humidity conditioning..... :	(See sub-clause 5.4.8)	N/A
5.4.1.4	Maximum operating temperature for insulating materials ..... :	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree..... :	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied	N/A
5.4.1.5.3	Thermal cycling	See above	N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer within the EUT	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such transformer within the EUT	N/A
5.4.1.8	Determination of working voltage	See appended table 5.4.1.8, 5.4.2.2, 5.4.2.4 and 5.4.3.	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	See only 5.4.10.3 below.	P
5.4.1.10.2	Vicat softening temperature..... :	Ball pressure test considered	N/A
5.4.1.10.3	Ball pressure ..... :	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances	The highest value of 5.4.3.3 and 5.4.2.3 be used.	P
5.4.2.2	Determining clearance using peak working voltage	Temporary overvoltage 2000Vpeak assumed.	P
5.4.2.3	Determining clearance using required withstand voltage ..... :	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
	a) a.c. mains transient voltage..... :	2500V	—
	b) d.c. mains transient voltage ..... :		—
	c) external circuit transient voltage..... :		—
	d) transient voltage determined by measurement :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A

EN 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.5	Multiplication factors for clearances and test voltages..... :	(See appended tables 5.4.2.2, 5.4.2.4 and 5.4.3) Specified the equipment to be operated up to 2000m above sea level.	P
5.4.3	Creepage distances..... :	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group ..... :	IIIa&IIIb	—
5.4.4	Solid insulation	See below	P
5.4.4.2	Minimum distance through insulation ..... :	(See appended table5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices	Approved optocoupler used	P
5.4.4.5	Cemented joints	No such device within the EUT	N/A
5.4.4.6	Thin sheet material	See below	P
5.4.4.6.1	General requirements	Two layers of insulation sheets around T1 body are used for double insulation and not subjected to handling or abrasion during ordinary or instructed person servicing.	P
5.4.4.6.2	Separable thin sheet material	Two layers insulating tapes provides as double insulation and one layer passed the electric strength test for reinforced insulation	P
	Number of layers (pcs)..... :	2	P
5.4.4.6.3	Non-separable thin sheet material	No such device within the EUT	N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material..... :	See above	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	See G.5.3 and G.6.1 only.	P
5.4.4.9	Solid insulation at frequencies >30 kHz..... :		P
5.4.5	Antenna terminal insulation	No antenna used.	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		P
	Insulation resistance (MΩ)..... :	500M	P
5.4.6	Insulation of internal wire as part of supplementary safeguard..... :	No such insulation of internal wire as part of supplementary insulation	N/A

EN 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.7	Tests for semiconductor components and for cemented joints	No tests necessary –see only 5.4.4.4.	N/A
5.4.8	Humidity conditioning	No test required however applied by request of the client.	P
	Relative humidity (%)..... :	95%	—
	Temperature (°C) ..... :	40°C	—
	Duration (h)..... :	120h	—
5.4.9	Electric strength test..... :	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test	(See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine tests	Should be considered and conducted during production at factory.	N/A
5.4.10	Protection against transient voltages between external circuit	No such external circuits	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test..... :		N/A
5.4.10.2.3	Steady-state test..... :		N/A
5.4.11	Insulation between external circuits and earthed circuitry..... :	No such external circuit within the EUT	N/A
5.4.11.1	Exceptions to separation between external circuits and earth	No such external circuit within the EUT	N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V)..... :		—
	Max increase due to variation U_{sp} ..... :		—
	Max increase due to ageing ΔU_{sa} ..... :		—
	$U_{op}= U_{peak} + \Delta U_{sp} + \Delta U_{sa}$..... :		—
5.5	Components as safeguards		
5.5.1	General	See the following details.	N/A
5.5.2	Capacitors and RC units	No such component provided	N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	No such component provided	N/A
5.5.5	Relays	No such component provided	N/A
5.5.6	Resistors		N/A
5.5.7	SPD's	No such component provided	N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable..... :	No such external circuits.	N/A
5.6	Protective conductor		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^2) ..... :	Min 0.75mm^2	—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm^2)..... :		—
	Protective current rating (A)..... :		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors	Class II equipment	N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm^2), nominal thread diameter (mm)..... :	Min.0.75mm^2	N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω)..... :		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks	Figure 4 of IEC 60990 was used in determining of the limit of ES1.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.2.1	Measurement of touch current.....:	(See appended table 5.2.2.2)	P
5.7.2.2	Measurement of prospective touch voltage	`	P
5.7.3	Equipment set-up, supply connections and earth connections	Clause 4, 5.3 and 5.4 of IEC 60990:1999 applied.	P
	System of interconnected equipment (separate connections/single connection).....:	Single equipment.	—
	Multiple connections to mains (one connection at a time/simultaneous connections).....:	Single connection.	—
5.7.4	Earthed conductive accessible parts.....:	Class II equipment.	N/A
5.7.5	Protective conductor current	Class II equipment	N/A
	Supply Voltage (V).....:		—
	Measured current (mA).....:		—
	Instructional Safeguard.....:		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits	No external circuits.	N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits	No external circuits.	N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A

6	**ELECTRICALLY- CAUSED FIRE**		
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	PS (power source) classification determined by measuring the maximum power in Figures 34 and 35 for load and power source circuits.	P
6.2.2.1	General	See the following details.	P
6.2.2.2	Power measurement for worst-case load fault.... :		P
6.2.2.3	Power measurement for worst-case power source fault.....:		P
6.2.2.4	PS1 .....:		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.5	PS2 .....:		P
6.2.2.6	PS3 .....:		P
6.2.3	Classification of potential ignition sources	See the following details.	P
6.2.3.1	Arcing PIS ..... :		P
6.2.3.2	Resistive PIS .....:		P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials.....:	(See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure	No such materials used.	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method by control fire spread.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	See above.	N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	See above.	N/A
6.4.3.1	General	See above.	N/A
6.4.3.2	Supplementary Safeguards	By equipment plastic fire enclosure.	N/A
	Special conditions if conductors on printed boards are opened or peeled	No such case happened.	N/A
6.4.3.3	Single Fault Conditions..... :	(See appended table B.3 & B.4)	N/A
	Special conditions for temperature limited by fuse	No such consideration.	N/A
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits	–	P
6.4.5.2	Supplementary safeguards .....:		P
6.4.6	Control of fire spread in PS3 circuit		P
6.4.7	Separation of combustible materials from a PIS	See the following details.	N/A
6.4.7.1	General.....:	(See tables 6.2.3.1 and 6.2.3.2)	N/A
6.4.7.2	Separation by distance	All components and combustible materials other than small parts are mounted on material with rated min. V-1.	N/A
6.4.7.3	Separation by a fire barrier	See above.	N/A
6.4.8	Fire enclosures and fire barriers	Equipment enclosure was evaluated as a fire enclosure.	P
6.4.8.1	Fire enclosure and fire barrier material properties	See the following details.	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.2.1	Requirements for a fire barrier	No such construction.	N/A
6.4.8.2.2	Requirements for a fire enclosure	Equipment fire enclosure was made of min. V-0 material.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See the following details.	P
6.4.8.3.1	Fire enclosure and fire barrier openings	No openings.	P
6.4.8.3.2	Fire barrier dimensions	No barrier used.	N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions(mm) .....:	No openings.	N/A
	Needle Flame test	Equipment fire enclosure was made of min. V-0 material.	N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm).....:	No bottom opening provided	N/A
	Flammability tests for the bottom of a fire enclosure ..... :	No such consideration.	N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c)..... :	No such door or cover can be opened by ordinary.	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:	The plastic enclosure rated min. min. V-0 is considered as fire enclosure.	N/A
6.5	Internal and external wiring		P
6.5.1	Requirements	The material of VW-1 on internal or external wiring were considered compliance equivalent to IEC 60332 or IEC/TS 60695-11-21 relevant standards.	P
6.5.2	Cross-sectional area (mm^2) ..... :	See above.	—
6.5.3	Requirements for interconnection to building wiring.....:	No such interconnection to building wiring.	N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1	See above.	P
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		P
7.2	Reduction of exposure to hazardous substances	No hazardous chemicals within the equipment.	P
7.3	Ozone exposure	No ozone production within the	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
		equipment.	
7.4	Use of personal safeguards (PPE)	No such consideration.	N/A
	Personal safeguards and instructions.....:	See above.	—
7.5	Use of instructional safeguards and instructions	No chemical-caused injuries, the instruction safeguard was not required.	N/A
	Instructional safeguard (ISO 7010).....:	(See Annex F)	—
7.6	Batteries..... :	No battery used.	N/A
8	**MECHANICALLY-CAUSED INJURY**		P
8.1	General	See the following details.	P
8.2	Mechanical energy source classifications	Sharp edges and corners, classified as MS1 Equipment mass 0.036 kg < 7 kg, classified as MS1	P
8.3	Safeguards against mechanical energy sources	See above.	N/A
8.4	Safeguards against parts with sharp edges and corners	Accessible edges and corners of the equipment are rounded and are classified as MS1.	P
8.4.1	Safeguards	See above.	N/A
8.5	Safeguards against moving parts	No moving parts within the equipment.	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment	See above.	N/A
8.5.2	Instructional Safeguard..... :	See above.	—
8.5.4	Special categories of equipment comprising moving parts	See above.	N/A
8.5.4.1	Large data storage equipment	See above.	N/A
8.5.4.2	Equipment having electromechanical device for destruction of media	See above.	N/A
8.5.4.2.1	Safeguards and Safety Interlocks.....:	See above.	N/A
8.5.4.2.2	Instructional safeguards against moving parts	See above.	N/A
	Instructional Safeguard..... :	See above.	—
8.5.4.2.3	Disconnection from the supply	See above.	N/A
8.5.4.2.4	Probe type and force (N).....:	See above.	N/A
8.5.5	High Pressure Lamps	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.5.1	Energy Source Classification	See above.	N/A
8.5.5.2	High Pressure Lamp Explosion Test..... :	See above.	N/A
8.6	Stability	See the following details.	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard..... :	See instruction for details.	—
8.6.2	Static stability	See above.	N/A
8.6.2.2	Static stability test	See above.	N/A
	Applied Force.....:		—
8.6.2.3	Downward Force Test	See above.	N/A
8.6.3	Relocation stability test	See above.	N/A
	Unit configuration during 10° tilt.....:	See above.	—
8.6.4	Glass slide test	See above.	N/A
8.6.5	Horizontal force test (Applied Force)..... :	See above.	N/A
	Position of feet or movable parts.....:	See above.	—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) ..... :		N/A
8.7.2	Direction and applied force..... :		N/A
8.8	Handles strength	No such handles.	N/A
8.8.1	Classification	See above.	N/A
8.8.2	Applied Force .....:	See above.	N/A
8.9	Wheels or casters attachment requirements	No such wheels or casters within the EUT	N/A
8.9.1	Classification	See above.	N/A
8.9.2	Applied force..... :	See above.	—
8.10	Carts, stands and similar carriers	No such device provided within the EUT.	N/A
8.10.1	General	See above.	N/A
8.10.2	Marking and instructions	See above.	N/A
	Instructional Safeguard.....:	See above.	—
8.10.3	Cart, stand or carrier loading test and compliance	See above.	N/A
	Applied force..... :	See above.	—
8.10.4	Cart, stand or carrier impact test	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.10.5	Mechanical stability	See above.	N/A
	Applied horizontal force (N).....:	See above.	—
8.10.6	Thermoplastic temperature stability (°C).....:	See above.	N/A
8.11	Mounting means for rack mounted equipment	The equipment is not intended to be rack-mounted.	N/A
8.11.1	General	See above.	N/A
8.11.2	Product Classification	See above.	N/A
8.11.3	Mechanical strength test, variable *N*..... :	See above.	N/A
8.11.4	Mechanical strength test 250N, including end stops	See above.	N/A
8.12	Telescoping or rod antennas.....	No such device provided within the EUT.	N/A
	Button/Ball diameter (mm).....:	See above.	—
9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications	No part considered to be accessible other than enclosure. The equipment evaluated by temperature test (see table 5.4.1.4).	P
9.3	Safeguard against thermal energy sources	See above.	P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard	See above.	P
9.4.2	Instructional safeguard .....:	See above.	N/A
10	**RADIATION**		N/A
10.2	Radiation energy source classification		N/A
10.2.1	General classification	RS1 exist only	N/A
10.3	Protection against laser radiation	No laser radiation	N/A
	Laser radiation that exists equipment:	See above.	—
	Normal, abnormal, single-fault.....:	See above.	
	Instructional safeguard.....:	See above.	—
	Tool.....:	See above.	—
10.4	Protection against visible, infrared, and UV radiation	No such radiation generated from the equipment.	N/A
10.4.1	General	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.4.1.a)	RS3 for Ordinary and instructed persons.....:	See above.	N/A
10.4.1.b)	RS3 accessible to a skilled person..... :	See above.	N/A
	Personal safeguard (PPE) instructional safeguard..... :	See above.	—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1..:	See above.	N/A
10.4.1.d)	Normal, abnormal, single-fault conditions .....:	See above.	N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque.....:	See above.	N/A
10.4.1.f)	UV attenuation.....:	See above.	N/A
10.4.1.g)	Materials resistant to degradation UV..... :	See above.	N/A
10.4.1.h)	Enclosure containment of optical radiation.....:	See above.	N/A
10.4.1.i)	Exempt Group under normal operating conditions..... :	See above.	N/A
10.4.2	Instructional safeguard.....:	See above.	N/A
10.5	Protection against x-radiation	No such x-radiation generated from the equipment	N/A
10.5.1	X- radiation energy source that exists equipment .....:	See above.	N/A
	Normal, abnormal, single fault conditions	See above.	N/A
	Equipment safeguards..... :	See above.	N/A
	Instructional safeguard for skilled person..... :	See above.	N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation..... :	See above.	—
	Abnormal and single-fault condition.....:	See above.	N/A
	Maximum radiation (pA/kg).....:	See above.	N/A
10.6	Protection against acoustic energy sources	No such consideration for the purpose of personal music players.	N/A
10.6.1	General	See above.	N/A
10.6.2	Classification	See above.	N/A
	Acoustic output, dB(A).....:	See above.	N/A
	Output voltage, unweighted r.m.s.....:	See above.	N/A
10.6.4	Protection of persons	See above.	N/A
	Instructional safeguards.....:	See above.	N/A
	Equipment safeguard prevent ordinary person to RS2.....:	See above.	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Means to actively inform user of increase sound pressure.....:	See above.	—
	Equipment safeguard prevent ordinary person to RS2.....:	See above.	—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)	See above.	N/A
10.6.5.1	Corded passive listening devices with analog input	See above.	N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output.....:	See above.	—
10.6.5.2	Corded listening devices with digital input	See above.	N/A
	Maximum dB(A).....:	See above.	—
10.6.5.3	Cordless listening device	See above.	N/A
	Maximum dB(A).....:	See above.	—

B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.2	Normal Operating Conditions	See the following details.	P
B.2.1	General requirements.....:	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers..... :	(See Annex E)	N/A
B.2.3	Supply voltage and tolerances	+10% and -10%	P
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements.....:	(See appended table B.3&B.4)	P
B.3.2	Covering of ventilation openings	No ventilation openings provided.	N/A
B.3.3	D.C. mains polarity test	The EUT is not connected to a D.C. mains	N/A
B.3.4	Setting of voltage selector..... :	No setting of voltage selector within the EUT	N/A
B.3.5	Maximum load at output terminals.....:	(See appended table B.3&B.4)	P
B.3.6	Reverse battery polarity	No battery within the EUT	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	All safeguards remained effectively.	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.4	Simulated single fault conditions错误！未指定书签。		P
B.4.2	Temperature controlling device open or short-circuited.....:	(See appended table B.3&B.4)	N/A
B.4.3	Motor tests	No motor within the EUT	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature ..... :	See above.	N/A
B.4.4	Short circuit of functional insulation	See the following details.	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3 &B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3 &B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards within the EUT	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.3 &B.4)	P
B.4.6	Short circuit or disconnect of passive components	(See appended table B.3 &B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	(See appended table B.3&B.4)	P
B.4.9	Battery charging under single fault conditions.....:	No battery involved in the EUT	N/A
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation	No such UV generated from the equipment.	N/A
C.1.2	Requirements	See above.	N/A
C.1.3	Test method	See above.	N/A
C.2	UV light conditioning test	See above.	N/A
C.2.1	Test apparatus	See above.	N/A
C.2.2	Mounting of test samples	See above.	N/A
C.2.3	Carbon-arc light-exposure apparatus	See above.	N/A
C.2.4	Xenon-arc light exposure apparatus	See above.	N/A
D	**TEST GENERATORS**		P
D.1	Impulse test generators	.	P
D.2	Antenna interface test generator	See above.	N/A
D.3	Electronic pulse generator	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		N/A
E.1	Audio amplifier normal operating conditions	Not such equipment.	N/A
	Audio signal voltage (V)..... :	See above.	—
	Rated load impedance (Ω) ..... :	See above.	—
E.2	Audio amplifier abnormal operating conditions	See above.	N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	General requirements	See the following details.	P
	Instructions – Language ..... :	English	—
F.2	Letter symbols and graphical symbols	See the following details.	P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60027-1.	N/A
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Equipment marking is located on the exterior surface and is easily visible.	P
F.3.2	Equipment identification markings	See the following details.	P
F.3.2.1	Manufacturer identification ..... :	See copy of marking plate.	—
F.3.2.2	Model identification ..... :	See copy of marking plate.	—
F.3.3	Equipment rating markings	See the following details.	P
F.3.3.1	Equipment with direct connection to mains	The equipment is connected to AC mains supply.	P
F.3.3.2	Equipment without direct connection to mains	See above.	N/A
F.3.3.3	Nature of supply voltage..... :	~	—
F.3.3.4	Rated voltage..... :	See copy of marking plate.	—
F.3.3.4	Rated frequency..... :	See copy of marking plate	—
F.3.3.6	Rated current or rated power..... :	See copy of marking plate.	—
F.3.3.7	Equipment with multiple supply connections	Only one supply connection.	N/A
F.3.4	Voltage setting device	No such device on the equipment.	N/A
F.3.5	Terminals and operating devices	See below	P
F.3.5.1	Mains appliance outlet and socket-outlet markings..... :	No such devices on the equipment.	N/A
F.3.5.2	Switch position identification marking..... :	No such switch on the equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.3	Replacement fuse identification and rating markings..... :	The fuse is located within the equipment and not replaceable by an ordinary person or an instructed person. The fuse marked with F1 1.2W,2.2R	P
F.3.5.4	Replacement battery identification marking.....:	No such battery on the equipment.	N/A
F.3.5.5	Terminal marking location	See markings specified in F.3.6.1 and F.3.6.2.2 is not placed on removable parts such as screws.	N/A
F.3.6	Equipment markings related to equipment classification	See the following details.	P
F.3.6.1	Class I Equipment	The equipment is a Class II type.	N/A
F.3.6.1.1	Protective earthing conductor terminal	See above.	N/A
F.3.6.1.2	Neutral conductor terminal	The equipment is not permanently connected equipment.	N/A
F.3.6.1.3	Protective bonding conductor terminals	See above.	N/A
F.3.6.2	Class II equipment (IEC60417-5172)	See label	P
F.3.6.2.1	Class II equipment with or without functional earth	without functional earth	P
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking ..... :	This equipment is classified as IPX0	—
F.3.8	External power supply output marking	See copy of marking plate.	P
F.3.9	Durability, legibility and permanence of marking	See the following details.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test, 15 sec. for water and 15 sec. for petroleum spirit. After each test, the marking remained legible.	P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use	Relevant safety caution texts and installation instruction are available.	P
	c) Equipment intended to be fastened in place	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	d) Equipment intended for use only in restricted access area	The EUT is not such type equipment	N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	No such terminals provided.	N/A
	f) Protective earthing employed as safeguard	The EUT is a class II equipment and no protective earth within the EUT	N/A
	g) Protective earthing conductor current exceeding ES2 limits	See above.	N/A
	h) Symbols used on equipment	No such consideration.	N/A
	i) Permanently connected equipment not provided with all-pole mains switch		P
j)	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards	No instructional safeguard is considered as necessary.	N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction	No instructional safeguard required in the equipment.	N/A
G	**COMPONENTS**		P
G.1	**Switches**		N/A
G.1.1	General requirements	No such switch as disconnect devices provided within the equipment.	N/A
G.1.2	Ratings, endurance, spacing, maximum load	See above.	N/A
G.2	**Relays**		N/A
G.2.1	General requirements	No such relay provided within the equipment.	N/A
G.2.2	Overload test	See above.	N/A
G.2.3	Relay controlling connectors supply power	See above.	N/A
G.2.4	Mains relay, modified as stated in G.2	See above.	N/A
G.3	**Protection Devices**		P
G.3.1	Thermal cut-offs	No thermal cut-off provided within the equipment.	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)	See above.	N/A
G.3.1.2	Thermal cut-off connections maintained and secure	See above.	N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link provided within the equipment.	N/A
G.3.2.1b)	Thermal links tested as part of the equipment	See above.	N/A
	Aging hours (H)..... :	See above.	—
	Single Fault Condition..... :	See above.	—
	Test Voltage (V) and Insulation Resistance (Ω)..:	See above.	—
G.3.3	PTC Thermistors	No PTC thermistor provided within the equipment.	N/A
G.3.4	Overcurrent protection devices	All sources of fuse (F1) complied with IEC 60127-3.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided	No such component.	N/A
G.3.5.2	Single faults conditions.....:	(See appended Table B.4)	N/A
G.4	**Connectors**		N/A
G.4.1	Spacings	No such connector within the EUT	N/A
G.4.2	Mains connector configuration .....:	See above.	N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	See above.	N/A
G.5	**Wound Components**		P
G.5.1	Wire insulation in wound components.....	(See Annex J)	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Insulation tape or tubing provided.	P
G.5.1.2 b)	Construction subject to routine testing	Approved TIW used	N/A
G.5.2	Endurance test on wound components	Approved TIW used	N/A
G.5.2.1	General test requirements	See above.	N/A
G.5.2.2	Heat run test	See above.	N/A
	Time (s)..... :	See above.	—
	Temperature (°C).....:	See above.	—
G.5.2.3	Wound Components supplied by mains	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3	**Transformers**		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....:	The transformer meets the requirements given in G.5.3.2 and G.5.3.3.	P
	Position.....:	T1	—
	Method of protection .....:	See above and appended table B.3 & B.4.	—
G.5.3.2	Insulation	Primary windings and secondary windings are isolated by double insulation	P
	Protection from displacement of windings.....:	The end-turn of each winding is fixed by insulating tape	—
G.5.3.3	Overload test.....:	(See appended table B.3 & B.4)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended table B.3&B.4)	P
G.5.3.3.3	Winding Temperatures - Alternative test method	Alternative test method was not considered.	N/A
G.5.4	**Motors**		N/A
G.5.4.1	General requirements	No such devices within the EUT	N/A
	Position .....:	See above.	—
G.5.4.2	Test conditions	See above.	N/A
G.5.4.3	Running overload test	See above.	N/A
G.5.4.4	Locked-rotor overload test	See above.	N/A
	Test duration (days) .....:	See above.	—
G.5.4.5	Running overload test for d.c. motors in secondary circuits	See above.	N/A
G.5.4.5.2	Tested in the unit	See above.	N/A
	Electric strength test (V).....:	See above.	—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....:	See above.	N/A
	Electric strength test (V).....:	See above.	—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits	See above.	N/A
G.5.4.6.2	Tested in the unit	See above.	N/A
	Maximum Temperature .....:	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test (V) ..... :	See above.	N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h)..... :	See above.	N/A
	Electric strength test (V)..... :	See above.	N/A
G.5.4.7	Motors with capacitors	See above.	N/A
G.5.4.8	Three-phase motors	See above.	N/A
G.5.4.9	Series motors	See above.	N/A
	Operating voltage ..... :	See above.	—
G.6	**Wire Insulation**		P
G.6.1	General	Triple insulated winding in T1 secondary windings used as reinforced safeguard in the isolating transformer that has separately complied with Annex J.	P
G.6.2	Solvent-based enamel wiring insulation		P
G.7	**Mains supply cords**		N/A
G.7.1	General requirements	Approved AC inlet used.	N/A
	Type..... :	See above.	—
	Rated current (A)..... :	See above.	—
	Cross-sectional area (mm^2), (AWG)..... :	See above.	—
G.7.2	Compliance and test method	See above.	N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords	See above.	N/A
G.7.3.2	Cord strain relief		P
G.7.3.2.1	Requirements	See above.	N/A
	Strain relief test force (N)..... :	See above.	—
G.7.3.2.2	Strain relief mechanism failure	See above.	N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)..... :	See above.	—
G.7.3.2.4	Strain relief comprised of polymeric material	See above.	N/A
G.7.4	Cord Entry..... :	See above.	N/A
G.7.5	Non-detachable cord bend protection	See above.	N/A
G.7.5.1	Requirements	See above.	N/A
G.7.5.2	Mass (g) ..... :	See above.	—
	Diameter (m)..... :	See above.	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Temperature (°C)..... :	See above.	—
G.7.6	Supply wiring space	See above.	N/A
G.7.6.2	Stranded wire	See above.	N/A
G.7.6.2.1	Test with 8 mm strand	See above.	N/A
G.8	**Varistors**		N/A
G.8.1	General requirements	No VDR.	N/A
G.8.2	Safeguard against shock	See above.	N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test..... :	See above.	N/A
G.8.3.3	Temporary overvoltage..... :	See above.	N/A
G.9	**Integrated Circuit (IC) Current Limiters**		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No IC current limiter provided within the equipment.	N/A
G.9.1 b)	Limiters do not have manual operator or reset	See above.	N/A
G.9.1 c)	Supply source does not exceed 250 VA ..... :	See above.	—
G.9.1 d)	IC limiter output current (max. 5A)..... :	See above.	—
G.9.1 e)	Manufacturers' defined drift ..... :	See above.	—
G.9.2	Test Program 1	See above.	N/A
G.9.3	Test Program 2	See above.	N/A
G.9.4	Test Program 3	See above.	N/A
G.10	**Resistors**		N/A
G.10.1	General requirements	See the following details.	N/A
G.10.2	Resistor test	The bleeder resistors (R11, R12) used as a safeguard without the following evaluation were conducted under single fault condition in turn.	N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable	See above.	N/A
G.10.3.1	General requirements	See above.	N/A
G.10.3.2	Voltage surge test	See above.	N/A
G.10.3.3	Impulse test	See above.	N/A
G.11	**Capacitor and RC units**		N/A
G.11.1	General requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
G.12	**Optocouplers**		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)..... :		N/A
	Type test voltage Vini .....:		—
	Routine test voltage, Vini,b ..... :		—
G.13	**Printed boards**		P
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board complied with the minimum clearance and creepage requirements	P
G.13.3	Coated printed boards	No coated printed board provided within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner surface	See above.	N/A
	Compliance with cemented joint requirements (Specify construction).....:	See above.	—
G.13.5	Insulation between conductors on different surfaces	See above.	N/A
	Distance through insulation.....:	See above.	N/A
	Number of insulation layers (pcs) ..... :	See above.	—
G.13.6	Tests on coated printed boards	See above.	N/A
G.13.6.1	Sample preparation and preliminary inspection	See above.	N/A
G.13.6.2a)	Thermal conditioning	See above.	N/A
G.13.6.2b)	Electric strength test	See above.	N/A
G.13.6.2c)	Abrasion resistance test	See above.	N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements .....:	No coating on component terminals.	N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements	No such device provided within the equipment.	N/A
G.15.2	Requirements	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.15.3	Compliance and test methods	See above.	N/A
G.15.3.1	Hydrostatic pressure test	See above.	N/A
G.15.3.2	Creep resistance test	See above.	N/A
G.15.3.3	Tubing and fittings compatibility test	See above.	N/A
G.15.3.4	Vibration test	See above.	N/A
G.15.3.5	Thermal cycling test	See above.	N/A
G.15.3.6	Force test	See above.	N/A
G.15.4	Compliance	See above.	N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with Uc = to transient voltage .....:		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....:		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....:		—
D3)	Resistance .....:	See above.	—
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	General	No telephone ringing signal generated within the equipment.	N/A
H.2	Method A	See above.	N/A
H.3	Method B	See above.	N/A
H.3.1	Ringing signal	See above.	N/A
H.3.1.1	Frequency (Hz) .....:	See above.	—
H.3.1.2	Voltage (V) .....:	See above.	—
H.3.1.3	Cadence; time (s) and voltage (V) .....:	See above.	—
H.3.1.4	Single fault current (mA):.....:	See above.	—
H.3.2	Tripping device and monitoring voltage.....:	See above.	N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with	See above.	N/A
H.3.2.2	Tripping device	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
H.3.2.3	Monitoring voltage (V).....:	See above.	—
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		P
	General requirements	Triple-insulated winding wiring used as reinforced safeguard in the isolating transformer that had been evaluated with Annex J.	P
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements	No safety interlock provided within the equipment.	N/A
K.2	Components of safety interlock safeguard mechanism	See above.	N/A
K.3	Inadvertent change of operating mode	See above.	N/A
K.4	Interlock safeguard override	See above.	N/A
K.5	Fail-safe	See above.	N/A
	Compliance..... :	See above.	N/A
K.6	Mechanically operated safety interlocks	See above.	N/A
K.6.1	Endurance requirement	See above.	N/A
K.6.2	Compliance and Test method..... :	See above.	N/A
K.7	Interlock circuit isolation	See above.	N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....:	See above.	N/A
K.7.2	Overload test, Current (A).....:	See above.	N/A
K.7.3	Endurance test	See above.	N/A
K.7.4	Electric strength test .....:	See above.	N/A
L	**DISCONNECT DEVICES**		P
L.1	General requirements	The appliance coupler is considered as disconnect device.	P
L.2	Permanently connected equipment	The EUT is not permanently connected equipment	N/A
L.3	Parts that remain energized	When AC plug is disconnected no hazardous voltage in the equipment.	P
L.4	Single phase equipment	The mains plug disconnects both poles simultaneously.	P
L.5	Three-phase equipment	The EUT is a Single phase equipment	N/A
L.6	Switches as disconnect devices		P

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Clause	Requirement + Test	Result - Remark	Verdict
L.7	Plugs as disconnect devices	Appliance coupler as disconnect device.	N/A
L.8	Multiple power sources	Only one a.c. mains connection.	N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		N/A
M.1	General requirements	No such battery used.	N/A
M.2	Safety of batteries and their cells	See above.	N/A
M.2.1	Requirements	See above.	N/A
M.2.2	Compliance and test method (identify method)... :	See above.	N/A
M.3	Protection circuits	See above.	N/A
M.3.1	Requirements	See above.	N/A
M.3.2	Tests	See above.	N/A
	- Overcharging of a rechargeable battery	See above.	N/A
	- Unintentional charging of a non-rechargeable battery	See above.	N/A
	- Reverse charging of a rechargeable battery	See above.	N/A
	- Excessive discharging rate for any battery	See above.	N/A
M.3.3	Compliance .....:	See above.	N/A
M.4	Additional safeguards for equipment containing secondary lithium battery	See above.	N/A
M.4.1	General	See above.	N/A
M.4.2	Charging safeguards	See above.	N/A
M.4.2.1	Charging operating limits	See above.	N/A
M.4.2.2a)	Charging voltage, current and temperature..... :	See above.	—
M.4.2.2 b)	Single faults in charging circuitry..... :	See above.	—
M.4.3	Fire Enclosure	See above.	N/A
M.4.4	Endurance of equipment containing a secondary lithium battery	See above.	N/A
M.4.4.2	Preparation	See above.	N/A
M.4.4.3	Drop and charge/discharge function tests	See above.	N/A
	Drop	See above.	N/A
	Charge	See above.	N/A
	Discharge	See above.	N/A
M.4.4.4	Charge-discharge cycle test	See above.	N/A
M.4.4.5	Result of charge-discharge cycle test	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.5	Risk of burn due to short circuit during carrying	See above.	N/A
M.5.1	Requirement	See above.	N/A
M.5.2	Compliance and Test Method (Test of P.2.3)	See above.	N/A
M.6	Prevention of short circuits and protection from other effects of electric current	See above.	N/A
M.6.1	Short circuits	See above.	N/A
M.6.1.1	General requirements	See above.	N/A
M.6.1.2	Test method to simulate an internal fault	See above.	N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) ..... :	See above.	N/A
M.6.2	Leakage current (mA) ..... :	See above.	N/A
M.7	Risk of explosion from lead acid and NiCd batteries	See above.	N/A
M.7.1	Ventilation preventing explosive gas concentration	See above.	N/A
M.7.2	Compliance and test method	See above.	N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries	See above.	N/A
M.8.1	General requirements	See above.	N/A
M.8.2	Test method	See above.	N/A
M.8.2.1	General requirements	See above.	N/A
M.8.2.2	Estimation of hypothetical volume *Vz* (m^3/s)..... :	See above.	—
M.8.2.3	Correction factors..... :	See above.	—
M.8.2.4	Calculation of distance *d* (mm) ..... :	See above.	—
M.9	Preventing electrolyte spillage	See above.	N/A
M.9.1	Protection from electrolyte spillage	See above.	N/A
M.9.2	Tray for preventing electrolyte spillage	See above.	N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) ..... :	See above.	N/A
N	**ELECTROCHEMICAL POTENTIALS**		N/A
	Metal(s) used..... :	The EUT is Class II equipment	—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Figures O.1 to O.20 of this Annex applied..... :	Considered.	—

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Clause	Requirement + Test	Result - Remark	Verdict
P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		P
P.1	General requirements	See the following details.	N/A
P.2.2	Safeguards against entry of foreign object	See below.	N/A
	Location and Dimensions (mm) ..... :	No openings.	—
P.2.3	Safeguard against the consequences of entry of foreign object	See above.	N/A
P.2.3.1	Safeguards against the entry of a foreign object	See above.	N/A
	Openings in transportable equipment	No openings.	P
	Transportable equipment with metalized plastic parts..... :	See above.	N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) ..... :	See above.	N/A
P.3	Safeguards against spillage of internal liquids	No such consideration.	N/A
P.3.1	General requirements	See above.	N/A
P.3.2	Determination of spillage consequences	See above.	N/A
P.3.3	Spillage safeguards	See above.	N/A
P.3.4	Safeguards effectiveness	See above.	N/A
P.4	Metallized coatings and adhesive securing parts	No such construction.	N/A
P.4.2 a)	Conditioning testing	See above.	N/A
	Tc (°C)..... :	See above.	—
	Tr (°C)..... :	See above.	—
	Ta (°C)..... :	See above.	—
P.4.2 b)	Abrasion testing ..... :	See above.	N/A
P.4.2 c)	Mechanical strength testing..... :	See above.	N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		P
Q.1	Limited power sources	The output connector complied with the relevant requirement in this annex.	P
Q.1.1 a)	Inherently limited output	See below.	N/A
Q.1.1 b)	Impedance limited output	See below.	P
	- Regulating network limited output under normal operating and simulated single fault condition	Complied	P
Q.1.1 c)	Overcurrent protective device limited output	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Q.1.1 d)	IC current limiter complying with G.9	See above.	N/A
Q.1.2	Compliance and test method	See above.	P
Q.2	Test for external circuits – paired conductor cable	No such circuit within the EUT	N/A
	Maximum output current (A) ..... :	See above.	—
	Current limiting method.....:	See above.	—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	General requirements	No such consideration.	N/A
R.2	Determination of the overcurrent protective device and circuit	See above.	N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). ..... :	See above.	N/A
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		P
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	The fire enclosure was made of rated min. V-0 material.	P
	Samples, material.....:	See above.	—
	Wall thickness (mm).....:	See above.	—
	Conditioning (°C)..... :	See above.	—
	Test flame according to IEC 60695-11-5 with conditions as set out	See above.	N/A
	- Material not consumed completely	See above.	N/A
	- Material extinguishes within 30s	See above.	N/A
	- No burning of layer or wrapping tissue	See above.	N/A
S.2	Flammability test for fire enclosure and fire barrier integrity	See above.	N/A
	Samples, material.....:	See above.	—
	Wall thickness (mm).....:	See above.	—
	Conditioning (°C)..... :	See above.	—
	Test flame according to IEC 60695-11-5 with conditions as set out	See above.	N/A
	Test specimen does not show any additional hole	See above.	N/A
S.3	Flammability test for the bottom of a fire enclosure	See above.	N/A
	Samples, material.....:	See above.	—
	Wall thickness (mm).....:	See above.	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Cheesecloth did not ignite	See above.	N/A
S.4	Flammability classification of materials	See above.	N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	See above.	N/A
	Samples, material.....:	See above.	—
	Wall thickness (mm).....:	See above.	—
	Conditioning (test condition), (°C).....:	See above.	—
	Test flame according to IEC 60695-11-20 with conditions as set out	See above.	N/A
	After every test specimen was not consumed completely	See above.	N/A
	After fifth flame application, flame extinguished within 1 min	See above.	N/A
T	**MECHANICAL STRENGTH TESTS**		**P**
T.1	General requirements	See the following details.	P
T.2	Steady force test, 10 N .....:	(See appended table T.2)	P
T.3	Steady force test, 30 N .....:	(See appended table T.3)	P
T.4	Steady force test, 100 N ..... :	(See appended table T.4)	P
T.5	Steady force test, 250 N ..... :	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	N/A
	Fall test	A 500 g steel sphere ball fell freely from rest through a vertical distance of 1300 mm onto the sample.	N/A
	Swing test	By fall test above.	N/A
T.7	Drop test ..... :	Complete equipment was dropped onto a horizontal surface from the height of 1000 mm for three times.	P
T.8	Stress relief test.....:	(See appended table T.8)	N/A
T.9	Impact Test (glass)	No such glass provided within the equipment.	N/A
T.9.1	General requirements	See above.	N/A
T.9.2	Impact test and compliance	See above.	N/A
	Impact energy (J).....:	See above.	—
	Height (m)..... :	See above.	—

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Clause	Requirement + Test	Result - Remark	Verdict
T.10	Glass fragmentation test.....:	(See sub-clause 4.4.4.9)	N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm).....:	See above.	—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements	No CRT provided within the equipment.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs	See above.	N/A
U.3	Protective Screen.....:	See above.	N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		P
V.1	Accessible parts of equipment	Following the probes test specified in this annex except Figure V.3., V.4 and V.5 is not suitable.	P
V.2	Accessible part criterion	No live parts can be accessible.	P

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Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: List of critical components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1]
Leakage protector	HIKANG	DZ47-63	400V~ 4500A 50Hz	IEC 60898-1	IEC
Controller	ZKTeco	BG1000	110-240V	IEC 62368-1	IEC
Power Supply	ZKTeco	S-60W	100-240V~ 50/60Hz	IEC 62368-1	IEC
Motor	ZKTeco	BG1000	AC 220	IEC 60034-1	IEC
Supplementary information: [1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2) For photocoupler, Dti = inside distance through insulation, Int. dcr = internal creepage distance, Ext. dcr = external creepage distance.					

4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests			N/A
(The following mechanical tests are conducted in the sequence noted.)				
4.8.4.2	TABLE: Stress Relief test			—
Part	Material	Oven Temperature (°C)	Comments	
4.8.4.3	TABLE: Battery replacement test			—
Battery part no.....:		--		—
Battery Installation/withdrawal		Battery Installation/Removal Cycle	Comments	
		1		
		2		
		3		
		4		
		5		
		6		
		8		
		9		
		10		
4.8.4.4	TABLE: Drop test			—
Impact Area	Drop Distance	Drop No.	Observations	

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Clause	Requirement + Test	Result - Remark	Verdict

4.8.4, 4.8.5	**TABLE: Lithium coin/button cell batteries mechanical tests**	N/A

(The following mechanical tests are conducted in the sequence noted.)

4.8.4.5	**TABLE: Impact**		—
Impacts per surface	**Surface tested**	**Impact energy (Nm)**	**Comments**

4.8.4.6	**TABLE: Crush test**		—
Test position	**Surface tested**	**Crushing Force (N)**	**Duration force applied (s)**
--	--	--	--

Supplementary information:

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

Supplementary information:

5.2	**Table: Classification of electrical energy sources**	P

5.2.2.2 – Steady State Voltage and Current conditions

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions [1)]	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1	264V	Enclosure to earth	Normal	264V	0.005 mApeak		ES1
			Abnormal	--	--		
			Single fault – SC/OC	--	--		

5.2.2.3 - Capacitance Limits

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

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

Test Conditions:
Normal –
Abnormal -
Supplementary information: SC=Short Circuit, OC=Short Circuit

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements**					P
	Supply voltage (V) ..... :	See below				—
	Ambient T_{min} (°C) ..... :	--	--	--	--	—
	Ambient T_{max} (°C) ..... :	--	--	--	--	—
	Tma (°C) ..... :	--	--	--	--	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Test condition		198V60Hz	264V50Hz			--

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Clause	Requirement + Test	Result - Remark	Verdict

Input	48.2	49.2			70
Power	53.3	55.4			130
Controller	58.5	54.2			105
Enclosure	43.6	42.1			77
Ambient	40.0	40.0			--

Supplementary information:

Note 1: The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 40°C.

Note 2: The temperatures were measured under the worse case normal mode defined in table B.2.5.

Note 3. Temperature limits are calculated as follows:

Winding components providing safety isolation:

Class B → Tmax = 120 - 10=110 °C

Note 4: Test conditions E; values for T (°C) are re-calculated from ambient during test respectively.

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--

Supplementary information:

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

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

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

Supplementary information: The bobbin material of transformer (T1) is phenolic, no test is needed.

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						N/A
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)[1]	Required cl (mm)	cl (mm)[2]	Required[3] cr (mm)	cr (mm)

Supplementary information:

1) * Both frequencies lower than 30 kHz and higher than 30 kHz are present.Limit from Table 11 based on the temporary overvoltage (2000Vpeak) which is higher than Table 12.

2) Max. altitude up to 5000m, the multiplication factor for Cl. Is 1.48.

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Clause	Requirement + Test	Result - Remark	Verdict

3) Power Transformer T1: TIW used as secondary winding, core considered as primary part.
4) Input lead wire considered as BI.

5.4.2.3	**TABLE: Minimum Clearances distances using required withstand voltage**			N/A
	Overvoltage Category (OV):			II
	Pollution Degree:			2
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)
See table 5.4.2.2, 5.4.2.4 and 5.4.3 above.		--	--	--
Supplementary information:				

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

5.4.4.2, 5.4.4.5 c) 5.4.4.9	**TABLE: Distance through insulation measurements**					N/A
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
Supplementary information:						

5.4.9	**TABLE: Electric strength tests**		P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
L to N between (fuse open)	DC	2500	No
L, N to secondary output terminal	DC	4000	No
L, N to enclosure plastic enclosure with metal foil	DC	4000	No

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

5.5.2.2	TABLE: Stored discharge on capacitors				N/A
Supply Voltage (V/Hz)	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (V) (after 2 seconds)	ES Classification
264	Inlet pins (L-N)	Normal	--		--
			--		-

Supplementary information:

X-capacitors installed for testing are:

- bleeding resistor rating:

-

Notes:

A. Test Location: Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth

B. Operating condition abbreviations:

N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition

C. The resistor passed G.10.1 and G.10.2 of IEC62368-1 test, so no need to perform discharge test under single fault condition

5.6.6.2	TABLE: Resistance of protective conductors and terminations			N/A
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (mΩ)
--	--	--	--	--
Supplementary information:				

6.2.2	Table: Electrical power sources (PS) measurements for classification				N/A
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification
		Power (W) :			
		V_A (V) :			
		I_A (A) :			

Supplementary Information:

Fuse F1 opened immediately, no hazard.

* Unit shut down, No hazard.

Each case where unit shutdown occurred within the 3s.

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Clause	Requirement + Test	Result - Remark	Verdict

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)				N/A
Location	Open circuit voltage After 3 s (Vp)	Measured r.m.s current (Irms)	Calculated value (V_p x I_{rms})	Arcing PIS? Yes / No	
All circuits (exclude the output terminal)	--	--	--	Yes	
Supplementary information: 1) An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15. 2) Assumption: All circuits inside the equipment enclosure are declared as arcing PIS.					

B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
198V/50Hz	2.571	--	170.8	--	F1	2.571	Max. Normal load.
198V/60Hz	2.570	--	169.4	--	F1	2.570	
220V/50Hz	2.334	--	170.3	200	F1	2.334	
220V/60Hz	2.352	--	169.5	200	F1	2.352	
240V/50Hz	1.218	--	169.2	200	F1	1.218	
240V/60Hz	1.210	--	170.4	200	F1	1.210	
264V/50Hz	1.207	--	170.6	--	F1	1.207	
264V/60Hz	1.199	--	170.5	--	F1	1.199	
Supplementary information:							

B.3 & B.4	TABLE: Abnormal operating and fault condition tests								P
Ambient temperature (°C) .....:			25°C, if not specified						—
Power source for EUT: Manufacturer, model/type, output rating ..:			--						—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	
locked-rotor	OL	264Vac	4h50min	--	1.199	Type J	Enclosure : 62.5°C Ambient: 40.0°C	--	

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Clause	Requirement + Test	Result - Remark	Verdict

B.3 & B.4	TABLE: Abnormal operating and fault condition tests								P
Ambient temperature (°C) .....:				25°C, if not specified					—
Power source for EUT: Manufacturer, model/type, output rating ..:				--					—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	
Supplementary information: Test table is provided to record abnormal and fault conditions for all applicable energy sources includingThermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4. 1) SC: Short-circuited; OC: Open-circuited; OL: Overloaded. 2) The test result shown all safeguards remained effective and didn’t lead to a single fault condition during abnormal operating condition; besides, all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions. 3) The test result shown no Class 1 or 2 energy source become Class 3 level during and after single fault condition. 4) The overloaded condition is according to annex G.5.3.3. Winding Limit for T1 winding: 175-(45-25)=155K									

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						N/A
Note: Measured UOC (V) with all load circuits disconnected:							
Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)		
			Meas.	Limit	Meas.	Limit	
Supplementary Information: SC=Short circuit, OC=Open circuit I/P=264V, 60Hz.							

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Top enclosure	Plastic enclosure	--	250	5	No damaged	
Side enclosure	Plastic enclosure	--	250	5	No damaged	
Bottom enclosure	Plastic enclosure	--	250	5	No damaged	
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

T.6, T.9	TABLE: Impact tests				N/A
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Top enclosure	Top enclosure	--	1300	No damaged	
Side enclosure	Side enclosure	--	1300	No damaged	
Bottom enclosure	Bottom enclosure	--	1300	No damaged	
Supplementary information:					

T.7	TABLE: Drop tests			N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation
Top enclosure	Plastic enclosure	--	1000	No damaged
Side enclosure	Plastic enclosure	--	1000	No damaged
Bottom enclosure	Plastic enclosure	--	1000	No damaged
Supplementary information:				

T.8	TABLE: Stress relief test				N/A
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Supplementary information:For details refer to appended table 4.1.2.					

Attachment 1: Photo

Fig. 1

Fig. 2

Attachment 1: Photo

Fig. 3

Fig. 4

Attachment 1: Photo

Fig. 5

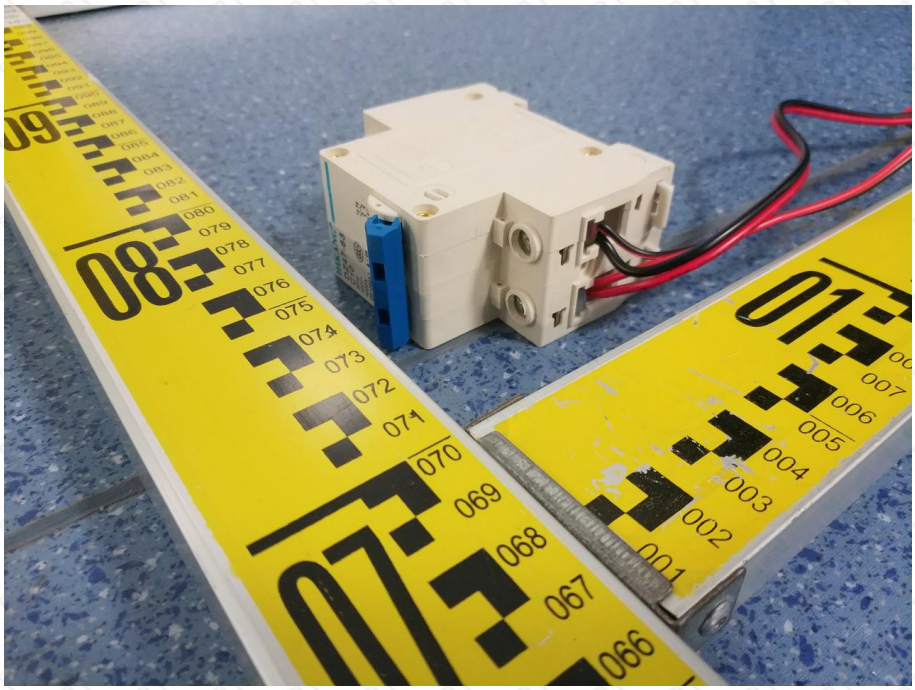

Fig.6

===End of the report===