Test Report On The Safety Of Electrical Equipment

For

Pro V&V Inc

On

ADA Voting Machine (Ballot Marking Device),

Model: ExpressVote Universal Voting System Hardware 3.0

Report No. PRVV0001-R1

09 October 2023

EMT form STRF62368-1E 7.0

Test Report issued under the responsibility of:

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

Report Number..... :	PRVV0001-R1
Date of issue ..... :	2023-10-09
Total number of pages ..... :	71 (Including Attachments)
Name of Testing Laboratory preparing the Report ..... :	Element Materials Technology (Irvine) 41 Tesla, Irvine, CA 92618, United States of America
Applicant's name ..... :	Pro V&V Inc.
Address ..... :	6705 Odyssey Drive Suite C, Huntsville, AL 35806 USA
Test specification:	
Standard ..... :	UL 62368-1:3rd Edition: 2021-07
Test procedure..... :	SF-SSP-023A
Non-standard test method..... :	N/A
TRF template used ..... :	IECEE OD-2020-F1:2020, Ed.1.3
Test Report Form No. ..... :	IEC62368_1E (EMT form STRF62368-1E)
Test Report Form(s) Originator.... :	UL(US)
Master TRF ..... :	Dated 2021-02-04

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Test item description .....:		ADA Voting Machine (Ballot Marking Device)	
Trade Mark(s) .....:		ExpressVote, ES&S, ES&S Logo Block	
Manufacturer.....:		Election Systems & Software (ES&S), 11208 John Galt Blvd. Omaha, NE 68137 USA	
Model/Type reference .....:		ExpressVote Universal Voting System Hardware 3.0	
Ratings .....:		100-125 Vac, 60 Hz, 1.5 A without AC Outlet / 15 A with AC Outlet	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☐	**Testing Laboratory:**	-	
Testing location/ address..... :		-	
Tested by (name, function, signature) ..... :		-	
Approved by (name, function, signature) .. :		-	
☒	**Testing procedure: TMP:**	NTS / Element (Longmont)	
Testing location/ address..... :		1736 Vista View Drive, Longmont, CO, 80504-5242 United States of America	
Tested by (name, function, signature) ..... :		Duy Nguyen Sr. Product Safety Test Engineer – Safety Division	
Approved by (name, function, signature) .. :		Jameel Armstrong Sr. Product Safety Test Engineer – Safety Division	
☐	**Testing procedure: WMT:**	-	
Testing location/ address..... :		-	
Tested by (name, function, signature)		-	-
Witnessed by (name, function, signature). :		-	-
Approved by (name, function, signature) .. :		-	-
☐	**Testing procedure: SMT:**	-	
☐	**Testing procedure: RMT:**	-	
Testing location/ address..... :		-	
Tested by (name, function, signature) ..... :		-	-
Witnessed by (name, function, signature). :		-	-
Approved by (name, function, signature) .. :		-	-
Supervised by (name, function, signature) :		-	-

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

Attachment	Description	Pages
Attachment 1	Test equipment used	1 page
Attachment 2	US National Differences	7 pages
Attachment 3	Photographs of the equipment	6 pages
Attachment 4	Power Supply Condition of Acceptability	3 pages

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
4. General requirements 5. Electrically caused injury 6. Electrically caused fire 8. Mechanically caused injury 9. Thermal burn injury Annex B Normal operating condition tests, Abnormal operating condition tests and single fault condition tests	NTS Longmont - EMI/EMC Test Lab 1736 Vista View Dr, Longmont, CO 80504 United States of America

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

AU ☐ CA ☐ CN ☐ NZ ☐ SA ☐ SG ☐ US ☒

By virtue of the national differences applied above, the product fulfils the full requirements of the following national standard:

☒ UL 62368-1:3rd Edition: 2021-07

Statement concerning the uncertainty of the measurement systems used for the tests

☒ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

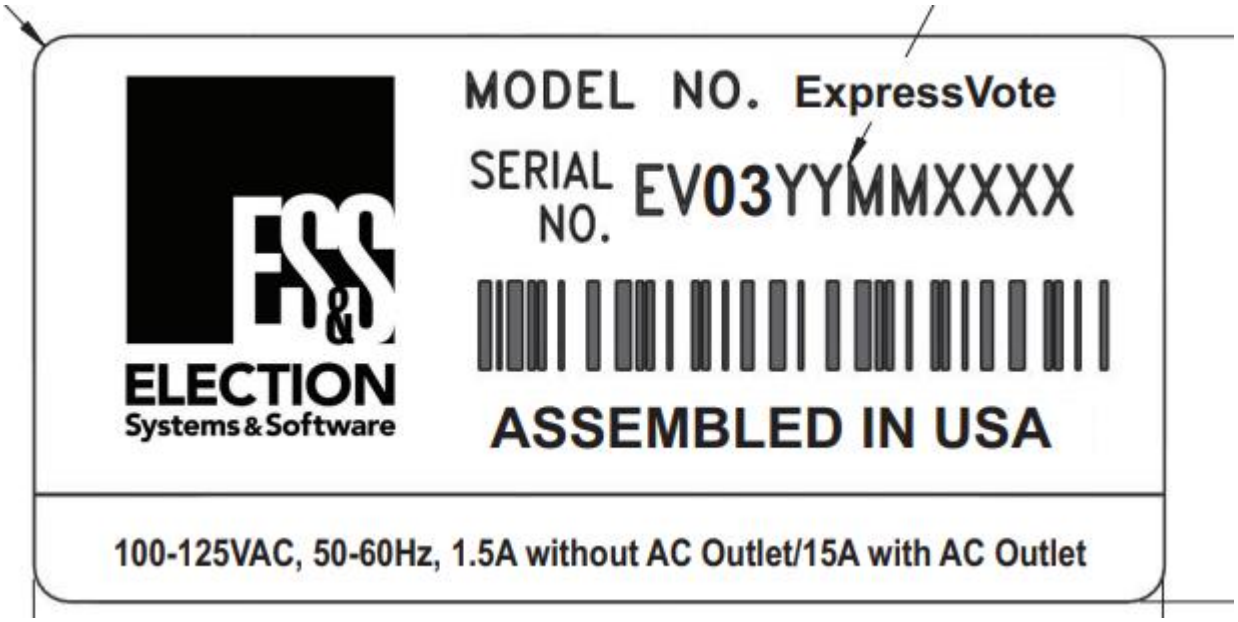
SF-OP 002 Measurement Uncertainty Version 10.0 2021-11-18

The decision rule for compliance is not inherent within the specification. As requested by the customer, all tests reported in this document are required to have a statement of conformity. Measurement uncertainty has been accounted for in determining compliance according to Procedure 1 of IEC Guide 115:2007. Where a measurement falls within the limits of uncertainty (WLU), the results section will identify the specific measurement with the abbreviation 'WLU' and will include the laboratory's Uncertainty Budget for the measurement in question.

☐ **Statement not required by the standard used for type testing**.

Copy of marking plate:

The artwork below may be only a draft.



Actual model number on label 'ExpressVote HW 3.0'

Test item particulars:	
Product group .....:	☒ end product ☐ built-in component
Classification of use by .....:	☒ Ordinary person ☐ Children likely present ☒ Instructed person ☐ Skilled person
Supply connection.....:	☒ AC mains ☐ DC mains ☐ not mains connected: ☐ ES1 ☐ ES2 ☒ ES3
Supply tolerance .....:	☒ +10%/-10% ☐ +20%/-15% ☐ + %/ - % ☒ None
Supply connection – type .....:	☒ pluggable equipment type A - ☐ non-detachable supply cord ☒ appliance coupler ☐ direct plug-in ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☐ other:
Considered current rating of protective device.....:	☒ N/A 20 A Location: ☒ building ☐ equipment ☐ N/A
Equipment mobility .....:	☒ movable ☐ hand-held ☐ transportable ☐ direct plug-in ☒ stationary ☐ for building-in ☐ wall/ceiling-mounted ☐ SRME/rack-mounted ☐ other:
Overvoltage category (OVC) .....:	☒ OVC I ☐ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Class of equipment .....:	☐ Class I ☒ Class II ☐ Class III ☐ Not classified ☐
Special installation location .....:	☒ N/A ☐ restricted access area ☐ outdoor location ☐
Pollution degree (PD) .....:	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified T_{ma}.....:	15.5 – 37.75 °C ☐ Outdoor: minimum °C
IP protection class .....:	☒ IPX0 ☐ IP___
Power systems .....:	☒ TN ☐ TT ☐ IT - V_{L-L} ☒ not AC mains
Altitude during operation (m) .....:	☒ 2000 m or less ☐ m
Altitude of test laboratory (m) .....:	☒ 2000 m or less ☐ m
Mass of equipment (kg) .....:	10.5
Overall size of equipment – W x D x H (mm) :	470 x 457 x 546 (Operating) 470 x 457 x 118 (Operating)

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 .....:	2023-09-11
Date (s) of performance of tests .....:	2023-09-11 to 2023-09-15
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) ..... :	Pivot-Hawks Manila, Inc. Orient Goldcrest Greenfield Automotive Park East American Road, Lot 7 B1 and B2 Greenfield Auto Park Bldg 1, SEZ B Barangay Don Jose Santa Rosa Laguna, 4026, Philippines

General product information and other remarks:

The Express Vote 3 (EV3) is a ballot marking device giving voters a convenient method to create a summary of their selections while preventing the voter intent issues inherent in hand-marked ballots.

The EV3 utilizes a thermal card that both initiates the voting session and captures the voter's selections. Insertion of the activation card triggers the selection of ballot, which is presented to the voter. After makings their selections through the touchscreen interface, their selections are printed on the card. The EV3 then reads back their selections and presents a summary to the voter. The ballot summary card is returned to the voter for insertion into a tabulator.

1. The equipment was assessed using the following documentation references:
   Circuit diagrams: PSB528 Rev A01
   User/installation guide: ExpressVote 3 Manual

2. Classification of some polymeric materials has been verified using data supplied by the client. In these cases no testing has been conducted under this project.

3. Where approval or product certification documentation has been used to verify suitability of safety critical components then limited testing only has been conducted under this project. Responsibility for compliance of such items remains with the issuing authority.

4. The operating temperature range of the apparatus was 15.5 °C to 37.75 °C

Model Differences –

N/A – only 1 model assessed

Isolation Diagram –

Refer to Energy Source Diagram below

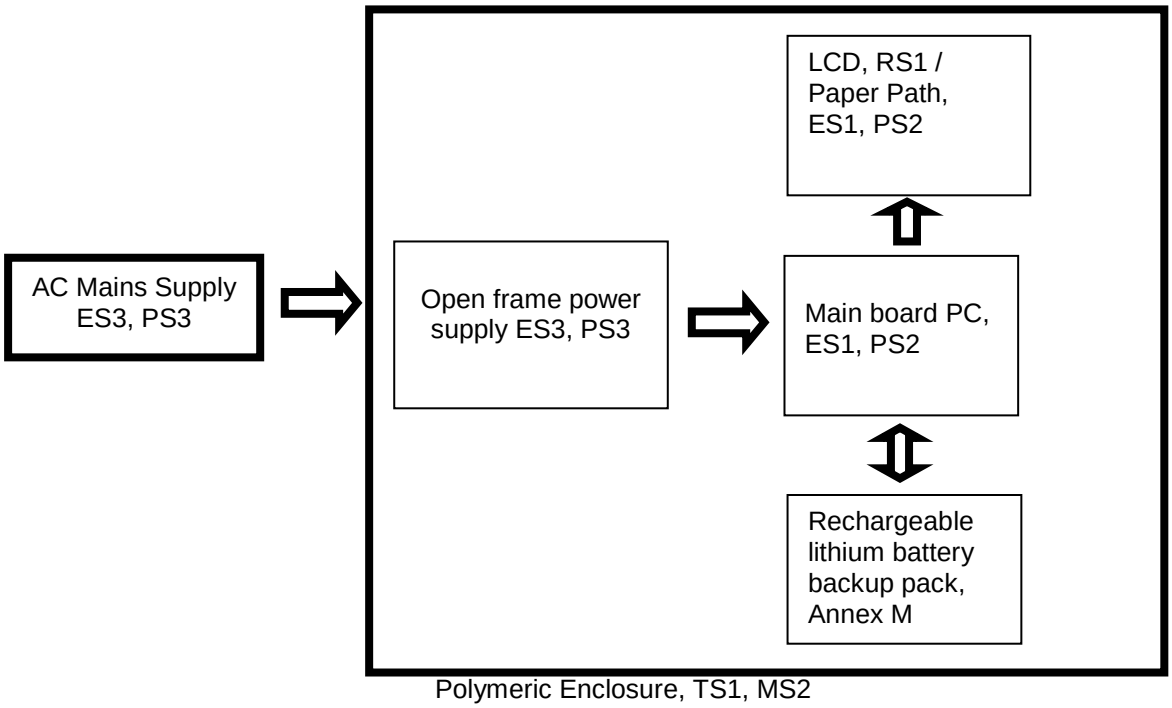
OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	**Possible Hazard**			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: Primary circuit	Instructed and Skilled	Insulation	Enclosure / FE	-
ES1: Secondary Circuits	Ordinary and Instructed	No Safeguard Required		
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1st S	2nd S
PS3: Power Supply	PCB	See Clause 6.3	Fire Enclosure (Polymeric)	-
PS2: Enclosure and Internal components, Secondary Circuits	PCB	See Clause 6.3	-	-
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
Backup Battery	Lithium	Annex M	-	-
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS2: Mass of the product	Ordinary	See Clause 8.6	-	-
MS1: Edges and corners	Ordinary	No Safeguard Required		
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: Enclosure	Ordinary	No Safeguard Required		
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1: LEDs and LCD	Ordinary	No Safeguard Required		
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



Remark: Primary circuit within EUT is ES3, PS3; Secondary circuits within EUT is ES, PS2 and external surface of EUT is TS1, MS2.

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

4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies	Components which are certified to IEC/UL and/or national standards are used within their ratings. Components not covered by IEC/UL standards are tested under the conditions present in the equipment. See Annex G and Table 4.1.2	P
4.1.2	Use of components	Certified components used in accordance with their ratings, certifications and they comply with applicable parts of the standard. Components, which not certified are used in accordance with their ratings and they comply with applicable parts of UL 62368-1 and applicable component standard.	P
4.1.3	Equipment design and construction	Equipment designed with appropriate safeguards. Hazardous parts are not accessible. Adjustment of controls does not defeat equipment safeguards.	P
4.1.4	Specified ambient temperature for outdoor use (°C) .....:	Indoor location only	N/A
4.1.5	Constructions and components not specifically covered	(See Annex F)	P
4.1.8	Liquids and liquid filled components (LFC)	LCD screen considered	P
4.1.15	Markings and instructions	(See Annex T.4, T.5)	P
4.4.3	Safeguard robustness	Not Hand-held or transportable	N/A
4.4.3.1	General	(See Annex T.6)	P
4.4.3.2	Steady force tests		P
4.4.3.3	Drop tests		P
4.4.3.4	Impact tests		P
4.4.3.5	Internal accessible safeguard tests		P
4.4.3.6	Glass impact tests		N/A
4.4.3.7	Glass fixation tests		N/A
	Glass impact test (1J)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Push/pull test (10 N)	10 N applied to relevant conductors.	P
4.4.3.8	Thermoplastic material tests		N/A
4.4.3.9	Air comprising a safeguard		N/A
4.4.3.10	Accessibility, glass, safeguard effectiveness	Class 3 energy sources not accessible. All safeguards remain effective	P
4.4.4	Displacement of a safeguard by an insulating liquid	No insulating liquids	N/A
4.4.5	Safety interlocks	No Safety Interlocks	N/A
4.5	**Explosion**		P
4.5.1	General	Explosion did not occur during normal and operating conditions.	P
4.5.2	No explosion during normal/abnormal operating condition		P
	No harm by explosion during single fault conditions	Single faults performed as part of approved components	N/A
4.6	**Fixing of conductors**		P
	Fix conductors not to defeat a safeguard		P
	Compliance is checked by test ..... :		P
4.7	**Equipment for direct insertion into mains socket–outlets**		N/A
4.7.2	Mains plug part complies with relevant standard .. :		N/A
4.7.3	Torque (Nm) ..... :		N/A
4.8	**Equipment containing coin/button cell batteries**		N/A
4.8.1	General	Professional equipment	N/A
4.8.2	Instructional safeguard ..... :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	**Likelihood of fire or shock due to entry of conductive object**		P
4.10	**Component requirements**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.10.1	Disconnect Device	Appliance coupler	P
4.10.2	Switches and relays		N/A

5	**ELECTRICALLY-CAUSED INJURY**		P
5.2	**Classification and limits of electrical energy sources**		P
5.2.2	ES1, ES2 and ES3 limits	(See appended table 5.2)	P
5.2.2.2	Steady-state voltage and current limits .....:	ES3	P
5.2.2.3	Capacitance limits .....:	(See appended table 5.2)	P
5.2.2.4	Single pulse limits.....:		N/A
5.2.2.5	Limits for repetitive pulses .....:	No pulse signals	N/A
5.2.2.6	Ringing signals	No ringing signals	N/A
5.2.2.7	Audio signals	No Audio signals	N/A
5.3	**Protection against electrical energy sources**		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	Only ES1 accessible to the ordinary person	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	ES2 / ES3 circuits	N/A
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors	Ordinary person	N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards		N/A
	Accessibility to outdoor equipment bare parts	Not for outdoor use	N/A
5.3.2.2	Contact requirements		N/A
	Test with test probe from Annex V		—
5.3.2.2 a)	Air gap – electric strength test potential (V) .....:		N/A
5.3.2.2 b)	Air gap – distance (mm) .....:		N/A
5.3.2.3	Compliance		N/A
5.3.2.4	Terminals for connecting stripped wire	No stripped wire type terminals	N/A
5.4	**Insulation materials and requirements**		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Material is non-hygroscopic	Compliance determined during separate certification of power supply.	N/A
5.4.1.4	Maximum operating temperature for insulating materials .....:	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degrees.....:	PD2	P
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 applied.	N/A
5.4.1.5.3	Thermal cycling test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses	No starting pulses	N/A
5.4.1.8	Determination of working voltage .....:	ES3	N/A
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat test.....:	No Vicat softening	N/A
5.4.1.10.3	Ball pressure test.....:		N/A
5.4.2	Clearances		P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method	ES3	P
5.4.2.2	Procedure 1 for determining clearance		P
	Temporary overvoltage .....:		—
5.4.2.3	Procedure 2 for determining clearance		N/A
5.4.2.3.2.2	a.c. mains transient voltage .....:		—
5.4.2.3.2.3	d.c. mains transient voltage .....:		—
5.4.2.3.2.4	External circuit transient voltage.....:		—
5.4.2.3.2.5	Transient voltage determined by measurement .....:		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test .....:		N/A
5.4.2.5	Multiplication factors for clearances and test voltages .....:	Equipment not intended to be used more than 2000 m above sea level	N/A
5.4.2.6	Clearance measurement.....:		N/A
5.4.3	Creepage distances		N/A
5.4.3.1	General		N/A
5.4.3.3	Material group.....:		—
5.4.3.4	Creepage distances measurement .....:		N/A
5.4.4	Solid insulation		N/A
5.4.4.1	General requirements		N/A
5.4.4.2	Minimum distance through insulation .....:		N/A
5.4.4.3	Insulating compound forming solid insulation	None used	N/A
5.4.4.4	Solid insulation in semiconductor devices	Evaluated as part of certified power supply	N/A
5.4.4.5	Insulating compound forming cemented joints	No such construction	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6	Thin sheet material	Evaluated as part of certified power supply	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) .....:	See above	N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
	Number of layers (pcs) .....:	See above	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		N/A
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 .....:		N/A
5.4.5	Antenna terminal insulation	No antenna terminals	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance (MΩ).....:	See above	N/A
	Electric strength test.....:	See above	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	No cemented joints	N/A
5.4.8	Humidity conditioning		N/A
	Relative humidity (%), temperature (°C), duration (h).....:	Investigated as part of separately certified power supply. No natural rubber, hygroscopic materials used in insulation.	—
5.4.9	Electric strength test		P
5.4.9.1	Test procedure for type test of solid insulation.....:		P
5.4.9.2	Test procedure for routine test	Not required for this evaluation	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

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Clause	Requirement + Test	Result - Remark	Verdict
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	No external circuits	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 ΔU_{sp} ..... :		—
	Max increase due to ageing ΔU_{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 ..... :	ES1. No connections to Mains	N/A
5.4.12.3	Compatibility of an insulating liquid ..... :	See above	N/A
5.4.12.4	Container for insulating liquid ..... :	See above	N/A
5.5	**Components as safeguards**		P
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector ..... :	(See appended table 5.5.2.2) Part of certified power supply	P
5.5.3	Transformers	Evaluated as part of certified power supply	N/A
5.5.4	Optocouplers	See above	N/A
5.5.5	Relays		N/A
5.5.6	Resistors	See above	N/A
5.5.7	SPDs	See above	N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable ..... :	No such connections	N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA) ..... :	None	—
5.6	**Protective conductor**	Protective conductor not relied upon. Class II construction	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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) ..... :		—
	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^2). ..... :		—
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 (Ω) 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^2) ..... :		N/A
	Class II with functional earthing marking ..... :		N/A
	Appliance inlet cl & cr (mm) ..... :		N/A
5.7	**Prospective touch voltage, touch current and protective conductor current**		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current		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 ..... :	Class II construction	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
5.8	**Backfeed safeguard in battery backed up supplies**		N/A
	Mains terminal ES ..... :		N/A
	Air gap (mm) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	**Classification of PS and PIS**		P
6.2.2	Power source circuit classifications.....:	PS3 part of PSU evaluation	P
6.2.3	Classification of potential ignition sources		N/A
6.2.3.1	Arcing PIS .....:	Within certified power supply	N/A
6.2.3.2	Resistive PIS .....:	None assessed	N/A
6.3	**Safeguards against fire under normal operating and abnormal operating conditions**		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	(See appended table B.1.5 and B.3)	P
	Combustible materials outside fire enclosure .....:		N/A
6.4	**Safeguards against fire under single fault conditions**		P
6.4.1	Safeguard method	Both methods (reduce the likelihood of ignition and control fire spread) employed.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	No safeguards required	N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		P
6.4.3.1	Supplementary safeguards	Protective devices employed (see appended table 4.1.2)	P
6.4.3.2	Single Fault Conditions ..... :	(See appended table B.4)	P
	Special conditions for temperature limited by fuse	Not applied	N/A
6.4.4	Control of fire spread in PS1 circuits	No PS1 circuits	N/A
6.4.5	Control of fire spread in PS2 circuits	Complies. Fire enclosure provided	P
6.4.5.2	Supplementary safeguards	(See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuits	Complies. Fire enclosure provided	P
6.4.7	Separation of combustible materials from a PIS	Separation by fire enclosure	P
6.4.7.2	Separation by distance		P
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		P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties	No top openings	N/A
	Openings dimensions (mm)..... :		N/A
6.4.8.3.4	Bottom openings and properties	No bottom openings	N/A
	Openings dimensions (mm)..... :		N/A
	Flammability tests for the bottom of a fire enclosure		N/A
	Instructional Safeguard.....:		N/A
6.4.8.3.5	Side openings and properties		P
	Openings dimensions (mm)..... :	See clause P.2.2 for side openings	P
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :	No doors or covers	N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating ..... :	Fire enclosure not made of combustible material	N/A
6.4.9	Flammability of insulating liquid.....:	None	N/A
6.5	**Internal and external wiring**		P
6.5.1	General requirements		P
6.5.2	Requirements for interconnection to building wiring ..... :		N/A
6.5.3	Internal wiring size (mm^2) for socket-outlets..... :	16 AWG	P
6.6	**Safeguards against fire due to the connection to additional equipment**		N/A

7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		P
7.2	**Reduction of exposure to hazardous substances**		N/A
7.3	**Ozone exposure**		N/A
7.4	**Use of personal safeguards or personal protective equipment (PPE)**		N/A
	Personal safeguards and instructions ..... :	No hazardous substances	—
7.5	**Use of instructional safeguards and instructions**		N/A
	Instructional safeguard (ISO 7010)..... :	No hazardous substances	—
7.6	**Batteries and their protection circuits**		P

8	**MECHANICALLY-CAUSED INJURY**	P
8.2	**Mechanical energy source classifications**	P
8.3	**Safeguards against mechanical energy sources**	N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict
	Explosion test.....:	No external moving parts	N/A
8.5.5.3	Glass particles dimensions (mm) .....:		N/A
8.6	**Stability of equipment**		P
8.6.1	General	MS2 for equipment Mass MS1 for sharp edges	P
	Instructional safeguard.....:		N/A
8.6.2	Static stability		P
8.6.2.2	Static stability test .....:	10° / 360 ° rotation	P
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm) .....:		—
	Tilt test		P
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test.....:		N/A
8.7	**Equipment mounted to wall, ceiling or other structure**		N/A
8.7.1	Mount means type .....:	Not wall or ceiling mounted	N/A
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N).....:	Not wall or ceiling mounted	N/A
	Test 2, number of attachment points and test force (N).....:	Not wall or ceiling mounted	N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm).....:	Not wall or ceiling mounted	N/A
8.8	**Handles strength**		N/A
8.8.1	General	None declared for lifting or carrying	N/A
8.8.2	Handle strength test		N/A
	Number of handles.....:		—
	Force applied (N) .....:		—
8.9	**Wheels or casters attachment requirements**		N/A
8.9.2	Pull test	No wheels or casters	N/A
8.10	**Carts, stands and similar carriers**		N/A
8.10.1	General	No carts, stands or similar carriers	N/A
8.10.2	Marking and instructions.....:	No carts, stands or similar carriers	N/A
8.10.3	Cart, stand or carrier loading test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Loading force applied (N) .....:	No carts, stands or similar carriers	N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Force applied (N) .....:	No carts, stands or similar carriers	—
8.10.6	Thermoplastic temperature stability		N/A
8.11	**Mounting means for slide-rail mounted equipment (SRME)**		N/A
8.11.1	General	Not slide rail mounted	N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard.....:	No carts, stands or similar carriers	N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied.....:	No carts, stands or similar carriers	N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	**Telescoping or rod antennas**		N/A
	Button/ball diameter (mm) .....:	No carts, stands or similar carriers	—

9	**THERMAL BURN INJURY**		P
9.2	**Thermal energy source classifications**		P
9.3	**Touch temperature limits**		P
9.3.1	Touch temperatures of accessible parts.....:	(See appended table 9.3)	P
9.3.2	Test method and compliance		N/A
9.4	**Safeguards against thermal energy sources**		N/A
9.5	**Requirements for safeguards**		N/A
9.5.1	Equipment safeguard		N/A
9.5.2	Instructional safeguard.....:	TS1 energy sources only. No safeguards required.	N/A
9.6	**Requirements for wireless power transmitters**		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 .....:	No wireless power transmitters	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10	**RADIATION**		P
10.2	**Radiation energy source classification**		P
10.2.1	General classification	No safeguards required	N/A
	Lasers ..... :	RS1 indicator	—
	Lamps and lamp systems ..... :	RS1 indicator	—
	Image projectors ..... :	See above	—
	X-Ray ..... :	See above	—
	Personal music player ..... :	See above	—
10.3	**Safeguards against laser radiation**		N/A
	The standard(s) equipment containing laser(s) comply .....:	No laser	N/A
10.4	**Safeguards against optical radiation from lamps and lamp systems (including LED types)**		N/A
10.4.1	General requirements		N/A
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location .....:	No lamps	N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure .....:	No lamps	N/A
10.4.3	Instructional safeguard ..... :	No lamps	N/A
10.5	**Safeguards against X-radiation**		N/A
10.5.1	Requirements	No X-radiation sources	N/A
	Instructional safeguard for skilled persons ..... :	See above	—
10.5.3	Maximum radiation (pA/kg)..... :	See above	—
10.6	**Safeguards against acoustic energy sources**		N/A
10.6.1	General	No acoustic energy sources	N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A).....:	No acoustic energy sources	N/A
	Unweighted RMS output voltage (mV).....:	No acoustic energy sources	N/A
	Digital output signal (dBFS).....:	No acoustic energy sources	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) .....:	No acoustic energy sources	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Warning for MEL ≥ 100 dB(A) .....:	No acoustic energy sources	N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards ..... :	No acoustic energy sources	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)..... :	No acoustic energy sources	N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A) .....:	No acoustic energy sources	N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A) .....:	No acoustic energy sources	N/A

B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.1	**General**		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	**Normal operating conditions**		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers ..... :	No audio amplifiers	N/A
B.2.3	Supply voltage and tolerances	±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	(See appended table B.3)	P
B.3.2	Covering of ventilation openings		P
	Instructional safeguard ..... :	No instructional safeguards	N/A
B.3.3	DC mains polarity test		N/A
B.3.4	Setting of voltage selector	No voltage setting devices	N/A
B.3.5	Maximum load at output terminals	No output terminals	N/A
B.3.6	Reverse battery polarity		P
B.3.7	Audio amplifier abnormal operating conditions	No audio amplifiers	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions ..... :	No safeguards	N/A
B.4	**Simulated single fault conditions**		P
B.4.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.2	Temperature controlling device	Approved thermal switch used	N/A
B.4.3	Blocked motor test	Jammed paper path module motor	P
B.4.4	Functional insulation		N/A
B.4.4.1	Short circuit of clearances for functional insulation		N/A
B.4.4.2	Short circuit of creepage distances for functional insulation	Part of certified power supply	N/A
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnection of passive components		N/A
B.4.7	Continuous operation of components	No components intended for short-time or intermittent operation. Equipment and components rated for continuous operation.	N/A
B.4.8	Compliance during and after single fault conditions ..... :		N/A
B.4.9	Battery charging and discharging under single fault conditions	(See Annex M)	N/A
C	**UV RADIATION**		N/A
C.1	**Protection of materials in equipment from UV radiation**		N/A
C.1.2	Requirements	No UV radiation	N/A
C.1.3	Test method		N/A
C.2	**UV light conditioning test**		N/A
C.2.1	Test apparatus..... :	No UV radiation	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
D	**TEST GENERATORS**		N/A
D.1	**Impulse test generators**		N/A
D.2	**Antenna interface test generator**		N/A
D.3	**Electronic pulse generator**		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		N/A
E.1	**Electrical energy source classification for audio signals**		N/A
	Maximum non-clipped output power (W) ..... :	No audio amplifiers as an electrical energy source	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated load impedance (Ω) ..... :	See above	—
	Open-circuit output voltage (V)..... :	See above	—
	Instructional safeguard ..... :	See above	—
E.2	**Audio amplifier normal operating conditions**		N/A
	Audio signal source type ..... :	See above	—
	Audio output power (W)..... :	See above	—
	Audio output voltage (V) ..... :	No audio amplifiers as an electrical energy source	—
	Rated load impedance (Ω) ..... :	See above	—
	Requirements for temperature measurement		N/A
E.3	Audio amplifier abnormal operating conditions		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	**General**		N/A
	Language ..... :	English	—
F.2	**Letter symbols and graphical symbols**		P
F.2.1	Letter symbols according to IEC60027-1	Considered	P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific	Considered	P
F.3	**Equipment markings**		P
F.3.1	Equipment marking locations	Exterior	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification ..... :	Election Systems & Software (ES&S),	P
F.3.2.2	Model identification ..... :	Express Vote 3	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..... :	AC	P
F.3.3.4	Rated voltage ..... :	100-125	P
F.3.3.5	Rated frequency ..... :	60	P
F.3.3.6	Rated current or rated power ..... :	1.5 A / 15 A (pass through outlet)	P
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device	None	N/A
F.3.5	Terminals and operating devices		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.1	Mains appliance outlet and socket-outlet markings ..... :	Marked with max current rating	P
F.3.5.2	Switch position identification marking..... :		N/A
F.3.5.3	Replacement fuse identification and rating markings ..... :	No replaceable fuses	N/A
	Instructional safeguards for neutral fuse ..... :		N/A
F.3.5.4	Replacement battery identification marking ..... :	No replaceable batteries	N/A
F.3.5.5	Neutral conductor terminal	Part of appliance inlet	P
F.3.5.6	Terminal marking location		P
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I equipment		P
F.3.6.1.1	Protective earthing conductor terminal..... :	Part of appliance inlet	P
F.3.6.1.2	Protective bonding conductor terminals ..... :	Part of certified power supply	P
F.3.6.2	Equipment class marking ..... :	Class I	N/A
F.3.6.3	Functional earthing terminal marking ..... :		N/A
F.3.7	Equipment IP rating marking ..... :	IPX0	N/A
F.3.8	External power supply output marking ..... :		N/A
F.3.9	Durability, legibility and permanence of marking	The marking plate has no curling and is not able to be removed easily.	P
F.3.10	Test for permanence of markings		P
F.4	**Instructions**		P
	a) Information prior to installation and initial use		P
	b) Equipment for use in locations where children not likely to be present	Sufficient information is provided to the user.	P
	c) Instructions for installation and interconnection	Sufficient information is provided to the user.	P
	d) Equipment intended for use only in restricted access area	Sufficient information is provided to the user.	P
	e) Equipment intended to be fastened in place		P
	f) Instructions for audio equipment terminals	No ES3 audio 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	Not permanently connected equipment	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	Not for outdoor use	N/A
F.5	Instructional safeguards		P
G	**COMPONENTS**		P
G.1	**Switches**		P
G.1.1	General	Thermal switch located in PS3 circuits	P
G.1.2	Ratings, endurance, spacing, maximum load	Approved thermal switch used	P
G.1.3	Test method and compliance		N/A
G.2	**Relays**		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
G.3	**Protective devices**		N/A
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	No overcurrent protection devices	N/A
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..... :	No simulated single fault conditions	N/A
G.4	**Connectors**		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.4.1	Spacings		P
G.4.2	Mains connector configuration ..... :	Approved appliance inlet and outlet used	N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		P
G.5	**Wound components**		N/A
G.5.1	Wire insulation in wound components	Part of certified power supply	N/A
G.5.1.2	Protection against mechanical stress		N/A
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	Part of certified power supply	N/A
G.5.3.1	Compliance method..... :	See above	N/A
	Position..... :	See above	N/A
	Method of protection..... :	See above	N/A
G.5.3.2	Insulation		N/A
	Protection from displacement of windings..... :	See above	—
G.5.3.3	Transformer overload tests		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding temperatures		N/A
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
	FIW wire nominal diameter..... :	See above	—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation ..... :	See above	N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4	Motors	Paper Path Module	P
G.5.4.1	General requirements		P
G.5.4.2	Motor overload test conditions		P
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		P
	Test duration (days) ..... :	An error occurred immediately	—
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		P
G.5.4.6.2	Tested in the unit		P
	Maximum Temperature ..... :	An error occurred immediately	N/A
G.5.4.6.3	Alternative method		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage ..... :		—
G.6	**Wire Insulation**		N/A
G.6.1	General	Part of certified power supply	N/A
G.6.2	Enamelled winding wire insulation		N/A
G.7	**Mains supply cords**		N/A
G.7.1	General requirements	Power supply cord not part of evaluation	N/A
	Type..... :		—
G.7.2	Cross sectional area (mm^2 or AWG) ..... :		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords	Pluggable equipment	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

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.5.2	Test method and compliance		N/A
	Overall diameter or minor overall dimension, *D* (mm) ..... :		—
	Radius of curvature after test (mm)..... :		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	**Varistors**		N/A
G.8.1	General requirements	Part of certified power supply	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
G.9	**Integrated circuit (IC) current limiters**		N/A
G.9.1	Requirements		N/A
	IC limiter output current (max. 5A) ..... :	None	—
	Manufacturers' defined drift ..... :	See above	—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	**Resistors**		N/A
G.10.1	General	Part of certified power supply	N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	**Capacitors and RC units**		N/A
G.11.1	General requirements	Part of certified power supply	N/A
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 with specifics	Part of certified power supply	N/A
	Type test voltage $V_{ini,a}$ ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Routine test voltage, $V_{ini, b}$ ..... :		—
G.13	**Printed boards**		P
G.13.1	General requirements	UL recognized PCB	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
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements ..... :	Not used	N/A
G.15	**Pressurized liquid filled components**		N/A
G.15.1	Requirements	No pressurised liquid filled components	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
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
G.16.1	Condition for fault tested is not required	No capacitor discharge functions	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 ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test ..... :		—
G.16.3	Capacitor discharge test..... :		N/A
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	**General**		N/A
H.2	**Method A**		N/A
H.3	**Method B**		N/A
H.3.1	Ringing signal	No ringing signals	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		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
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		N/A
J.1	**General**		N/A
	Winding wire insulation..... :		—
	Solid round winding wire, diameter (mm)..... :		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm^2)..... :		N/A
J.2/J.3	Tests and Manufacturing		—
K	**SAFETY INTERLOCKS**		N/A
K.1	**General requirements**		N/A
	Instructional safeguard ..... :	No safety interlocks	N/A
K.2	**Components of safety interlock safeguard mechanism**		N/A
K.3	**Inadvertent change of operating mode**		N/A
K.4	**Interlock safeguard override**		N/A
K.5	**Fail-safe**		N/A
K.5.1	Under single fault condition		N/A
K.6	**Mechanically operated safety interlocks**		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance ..... :	See above	N/A
K.7	**Interlock circuit isolation**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm)..... :	See above	N/A
	In circuit isolated from mains, separation distance for contact gaps (mm)..... :	See above	N/A
	Electric strength test before and after the test of K.7.2 ..... :	See above	N/A
K.7.2	Overload test, Current (A) ..... :	See above	N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	**DISCONNECT DEVICES**		P
L.1	**General requirements**	Appliance inlet used as disconnect.	P
L.2	**Permanently connected equipment**		N/A
L.3	**Parts that remain energized**		N/A
L.4	**Single-phase equipment**	All poles are disconnected simultaneously	P
L.5	**Three-phase equipment**	Single phase	N/A
L.6	**Switches as disconnect devices**		N/A
L.7	**Plugs as disconnect devices**		N/A
L.8	**Multiple power sources**		N/A
	Instructional safeguard ..... :		N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		P
M.1	**General requirements**		P
M.2	**Safety of batteries and their cells**		P
M.2.1	Batteries and their cells comply with relevant IEC standards..... :	IEC 62133-2	P
M.3	**Protection circuits for batteries provided within the equipment**	Battery Protection IC used	P
M.3.1	Requirements		N/A
M.3.2	Test method	Battery Protection IC used	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	Evaluated under battery pack certification.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.4	**Additional safeguards for equipment containing a portable secondary lithium battery**		P
M.4.1	General	Evaluated under battery pack certification. No additional tests deemed necessary.	P
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance..... :	No SFC within the Voting Machine that may affect the battery	N/A
M.4.3	Fire enclosure..... :	Voting machine over all enclosure acts as fire enclosure	N/A
M.4.4	Drop test of equipment containing a secondary lithium battery	Movable equipment	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
M.5	**Risk of burn due to short-circuit during carrying**		N/A
M.5.1	Requirement	Battery not accessible in normal use	N/A
M.5.2	Test method and compliance		N/A
M.6	**Safeguards against short-circuits**		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		N/A
M.7	**Risk of explosion from lead acid and NiCd batteries**		N/A
M.7.1	Ventilation preventing explosive gas concentration	No lead acid or NiCd batteries	N/A
	Calculated hydrogen generation rate ..... :		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m^3/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

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Clause	Requirement + Test	Result - Remark	Verdict
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%) ..... :		N/A
M.7.4	Marking ..... :		N/A
M.8	**Protection against internal ignition from external spark sources of batteries with aqueous electrolyte**		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_Z (m^3/s) ..... :		—
M.8.2.3	Correction factors ..... :		—
M.8.2.4	Calculation of distance *d* (mm) ..... :		—
M.9	**Preventing electrolyte spillage**		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse		P
	Instructional safeguard ..... :	Provided in user manual	P
N	**ELECTROCHEMICAL POTENTIALS**		N/A
	Material(s) used ..... :	None	—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		N/A
	Value of *X* (mm) ..... :		—
P	**SAFEGUARDS AGAINST CONDUCTIVE OBJECTS**		P
P.1	**General**		P
P.2	**Safeguards against entry or consequences of entry of a foreign object**		P
P.2.1	General		P
P.2.2	Safeguards against entry of a foreign object		P
	Location and Dimensions (mm) ..... :	Paper Path Slot 12.5 mm Length x 100 mm Width	—
P.2.3	Safeguards against the consequences of entry of a foreign object		P
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 ..... :	Movable	N/A
P.2.3.2	Consequence of entry test ..... :	Movable	N/A
P.3	**Safeguards against spillage of internal liquids**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
P.3.1	General	No internal liquids	N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	**Metallized coatings and adhesives securing parts**		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T_C (°C) ..... :		—
	Duration (weeks) ..... :		—
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		N/A
Q.1	**Limited power sources**	None	N/A
Q.1.1	Requirements		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output		N/A
	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 ..... :		N/A
	Current rating of overcurrent protective device (A) ..... :		N/A
Q.2	**Test for external circuits – paired conductor cable**		N/A
	Maximum output current (A) ..... :		N/A
	Current limiting method ..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	**General**		N/A
R.2	**Test setup**		N/A
	Overcurrent protective device for test ..... :	Not performed	—
R.3	**Test method**		N/A
	Cord/cable used for test ..... :		—
R.4	**Compliance**		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**		P
	Samples, material..... :	Approved material used. No additional tests deemed necessary.	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Wall thickness (mm) ..... :		—
	Conditioning (°C) ..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	**Flammability test for fire enclosure and fire barrier integrity**		N/A
	Samples, material..... :		—
	Wall thickness (mm) ..... :		—
	Conditioning (°C) ..... :		—
S.3	**Flammability test for the bottom of a fire enclosure**		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		
	Mounting of samples ..... :	See above	—
	Wall thickness (mm) ..... :		—
S.4	**Flammability classification of materials**		P
S.5	**Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W**	Approved material used. No additional tests deemed necessary.	P
	Samples, material..... :		—
	Wall thickness (mm) ..... :		—
	Conditioning (°C) ..... :		—
T	**MECHANICAL STRENGTH TESTS**		P
T.1	**General**		P
T.2	**Steady force test, 10 N ..... :**	(See appended table T.2)	P
T.3	**Steady force test, 30 N ..... :**		N/A
T.4	**Steady force test, 100 N ..... :**		N/A
T.5	**Steady force test, 250 N ..... :**		N/A
T.6	**Enclosure impact test**	(See appended table T.6)	P
	Fall test		P
	Swing test		N/A
T.7	**Drop test ..... :**	(See appended table T.7)	P
T.8	**Stress relief test..... :**		N/A
T.9	**Glass Impact Test..... :**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
T.10	**Glass fragmentation test**		N/A
	Number of particles counted .....:		N/A
T.11	**Test for telescoping or rod antennas**		N/A
	Torque value (Nm) ..... :	No telescopic or rod antennas	N/A
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION**		N/A
U.1	**General**		N/A
	Instructional safeguard **:**	No CRTs	N/A
U.2	**Test method and compliance for non-intrinsically protected CRTs**		N/A
U.3	**Protective screen**		N/A
V	**DETERMINATION OF ACCESSIBLE PARTS**		P
V.1	**Accessible parts of equipment**		P
V.1.1	General	Jointed test probe for equipment not likely to be accessible to children used	P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		N/A
V.1.4	Plugs, jacks, connectors tested with blunt probe		N/A
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		N/A
V.2	**Accessible part criterion**		N/A
X	**ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)**		N/A
	Clearance.....:		N/A
Y	**CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES**		N/A
Y.1	**General**	Not for outdoor installation	N/A
Y.2	**Resistance to UV radiation**		N/A
Y.3	**Resistance to corrosion**		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by ..... :		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure..... :		N/A
Y.3.5	Compliance		N/A
Y.4	**Gaskets**		N/A
Y.4.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
Y.5	**Protection of equipment within an outdoor enclosure**		N/A
Y.5.1	General	Not for outdoor installation	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
Y.6	**Mechanical strength of enclosures**		N/A
Y.6.1	General		N/A
Y.6.2	Impact test ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.2	**TABLE: Classification of electrical energy sources**						N/A
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type[1)]	Additional Info [2)]	
-	-	-	-	-	-	-	-
Supplementary information:							
1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.							
2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.							

5.4.1.8	**TABLE: Working voltage measurement**				N/A
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
-	-	-	-	-	
Supplementary information:					
Pre-approved PSU					

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

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

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance							P
Clearance (cl) and creepage distance (cr) at/of/between:	U_p (V)	U_{rms} (V)	Freq [1] (Hz)	Required cl (mm)	cl (mm)	E.S. [2] (V)	Required cr (mm)	cr (mm)
L to N at mains outlet	177	125	60	0.5	4.5	-	1.5	4.5
L to GND at mains outlet	177	125	60	0.5	1.9	-	1.5	1.9
N to GND at mains outlet	177	125	60	0.5	1.9	-	1.5	1.9
Primary to GND, PSU	177	125	60	0.5	5.0	-	1.5	5.0
Secondary to GND, PSU	18 Vdc	-	-	-	3.5	-	-	3.5
Supplementary information:								
1) Only for frequency above 30 kHz 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)								

5.4.4.2	TABLE: Minimum distance through insulation			
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)
-	-	-	-	-
Supplementary information:				

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz					
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)
-	-		-	-	-	-
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

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
L/N to Polymeric Enclosure		AC	2500	No
L/N to Functional Earth		AC	1500	No
L/N to Enclosure (At thermal stabilization and after SFC)		AC	2500	No
L/N to FE (At thermal stabilization and after SFC)		AC	1500	No
Supplementary information:				

5.5.2.2	TABLE: Stored discharge on capacitors				N/A
Location	Supply voltage (V)	Operating and fault condition [1)]	Switch position	Measured voltage (Vpk)	ES Class
-	-	-	-	-	-
Supplementary information: Covered under the approved power supply					
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					

5.6.6	TABLE: Resistance of protective conductors and terminations			N/A
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
-	-	-	-	-
Supplementary information: Protective conductor not relied upon for product safety. Class II construction.				

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Clause	Requirement + Test	Result - Remark	Verdict

5.7.4	TABLE: Unearthed accessible parts					P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V_{rms} or V_{pk})	Current (μA_{rms} or μA_{pk})	Freq. (Hz)	
Polymeric enclosure wrapped in aluminum foil	Normal	138	-	0.01	60	ES1
Polymeric enclosure wrapped in aluminum foil	Open ground	138	-	0.01	60	ES1
Polymeric enclosure wrapped in aluminum foil	Reverse Polarity	138	-	0.01	60	ES1
Polymeric enclosure wrapped in aluminum foil	Open neutral	138	-	0.01	60	ES1
Between main enclosure and disability key pad	Normal	138	-	0.01	60	ES1
Between main enclosure and disability key pad	Open ground	138	-	0.01	60	ES1
Polymeric enclosure wrapped in aluminum foil	Reverse Polarity	138	-	0.01	60	ES1
Polymeric enclosure wrapped in aluminum foil	Open neutral	138	-	0.01	60	ES1
Access key	Open Ground	138	-	0.01	60	ES1
Access key	Reverse Polarity	138	-	0.01	60	ES1
Access key	Open Neutral	138		0.01	60	ES1
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						

5.7.5	TABLE: Earthed accessible conductive part	N/A
Supply voltage (V) ..... :	138	—
Phase(s) ..... :	[X] Single Phase; [ ] Three Phase: [ ] Delta [ ] Wye	

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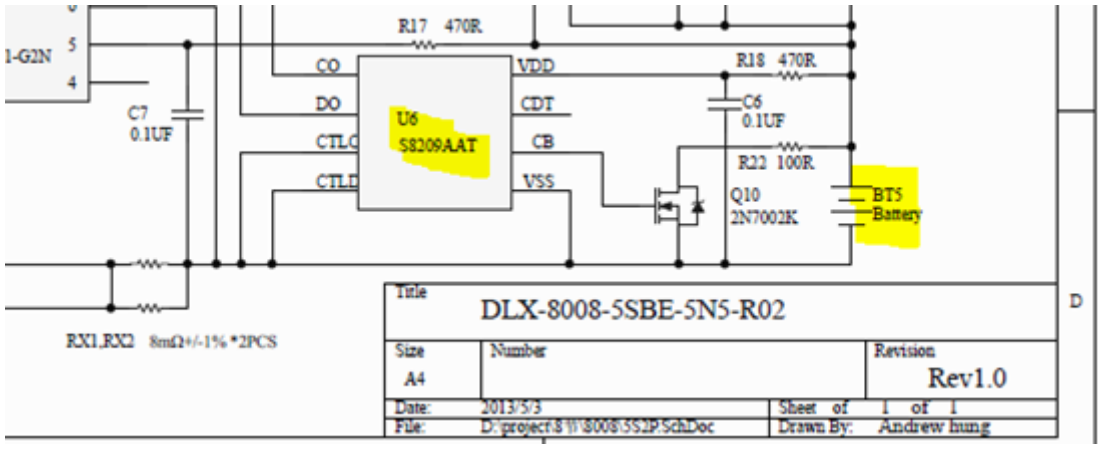
Clause	Requirement + Test	Result - Remark	Verdict

Power Distribution System .....:	[X] TN [ ]TT [ ] IT		
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment
-	-	-	-
Supplementary Information: Class II construction			

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



6.2.2	TABLE: Power source circuit classifications					N/A
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power[1)] (W)	Time (S)	PS class
-	-	-	-	-	-	-
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.						

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

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:
An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (Vp) and normal operating condition rms current (Irms) is greater than 15.

6.2.3.2	**TABLE: Determination of resistive PIS**		N/A
Location	Operating and fault condition	Dissipate power (W)	Resistive PIS? Yes / No
-	-	-	-
Supplementary information:			
Abbreviation: SC= short circuit; OC= open circuit			

8.5.5	**TABLE: High pressure lamp**			N/A
Lamp manufacturer	Lamp type	Explosion method	Longest axis of glass particle (mm)	Particle found beyond 1 m Yes / No
-	-	-	-	-
Supplementary information:				
None present				

9.6	**TABLE: Temperature measurements for wireless power transmitters**							N/A
Supply voltage (V)..... :	-							—
Max. transmit power of transmitter (W)..... :	-							—
	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	
Foreign objects	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)
-	-	-	-	-	-	-	-	-
Supplementary information:								

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**					P
Supply voltage (V) .....:		90[1)]	18.5[2)] Vdc	115[3)]	-	—
Ambient temperature during test T_{amb} (°C) .....:		23.9	25.2	26.2	-	—
Maximum measured temperature *T* of part/at:		*T* (°C)				Allowed T_{max} (°C)
Power Supply PCB (primary side)		49.0/62.9	31.7/44.3	57.1/68.7	-	70*
Power Supply Transformer (primary side)		54.1/68.0	32.0/44.6	64.2/75.8	-	95
Appliance Inlet		32.4/33.5	31.5/31.3	34.6/33.4	-	94
Back up battery pack case		32.2/46.1	38.0/50.6	35.7/47.3	-	60*
Internal Wiring (Line Conductor)		35.1/49.0	34.3/46.9	38.8/50.4	-	105*
Thermal Switch Case near Inlet/Outlet		32.9/34.0	32.7/32.5	34.8/33.6	-	94
Outlet case		34.7/35.8	36.1/35.9	36.3/35.1	-	94
Battery Pack Protection IC Case		34.7/48.6	37.9/50.5	37.6/49.2	-	85*
Enclosure (touch screen)		31.0/32.1	33.8/33.6	30.2/29.0	-	94
Motherboard PCB		57.0/70.9	72.2/84.8	60.0/71.6	-	130*

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:

Measured temperature *T* are calculated to manufacturer's maximum temperature of 37.75 °C, or a touch temperature of 25 °C.

Continuous Operation Test, Print Delay of 20 seconds interval.

Note 1: AC power, 90 V, 60 Hz

Note 2: 18.5 V battery backup

Note 3: Blocked ventilation holes, 115 V, 60 Hz, battery charging
*Manufacturer temperature limit

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Clause	Requirement + Test	Result - Remark	Verdict

B.2.5	TABLE: Input test							P
U (V)	Hz	I (mA)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
90	60	1.5	-	134	-	-	-	With feeder motor running
100	60	1.3	1.5	124	-	-	-	With feeder motor running
125	60	1.01	1.5	110	-	-	-	With feeder motor running
138	60	0.97	-	110	-	-	-	With feeder motor running
Supplementary information:								

B.3, B.4	TABLE: Abnormal operating and fault condition tests					P
Ambient temperature T_{amb} (°C)..... :			-			—
Power source for EUT: Manufacturer, model/type, outputrating .. :			-			—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
EUT	Blocked Ventilation	115	2 hours	-	-	See appended table 5.4.1.4
Paper Path Module	Jammed the motor	115	-	-	-	'paper jammed error message' prompt indicated on display. Motor stopped operating. No hazards.
Supplementary information:						

M.3	TABLE: Protection circuits for batteries provided within the equipment						P
Is it possible to install the battery in a reverse polarity position? ..... :			No, Keyed connector				—
Equipment Specification	Charging						
	Voltage (V)		Current (A)				
	18.5		5.2				
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)			

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Clause	Requirement + Test	Result - Remark	Verdict

Shenzhen BAK Energy Co., Ltd. / PCLI18650-5S2P ESS1	-	-	-	-	-	-

Note: The tests of M.3.2 are applicable only when above appropriate data is not available.

Specified battery temperature (°C) ..... :	-	

Component No.	Fault condition	Charge/ discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
	-	-	-	-	-	-	-

Supplementary information:

Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.

M.4.2	**TABLE: Charging safeguards for equipment containing a secondary lithium battery**	N/A

Maximum specified charging voltage (V) ..... :		—
Maximum specified charging current (A) ..... :		—
Highest specified charging temperature (°C) ..... :		
Lowest specified charging temperature (°C) ..... :		

Battery manufacturer/type	Operating and fault condition	Measurement			Observation
		Charging voltage (V)	Charging current (A)	Temp. (°C)	
-	-	-	-	-	-

Supplementary information:

-SFC of battery performed under battery pack certification.

-The overcharging/over discharging protection addressed under battery pack certification.

-The battery can only be removed by instructed person. No measurement of the charging voltage and current necessary.

-The battery's temperature limits exceed the operating limits of the Voting Machine. No additional tests required.

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)**						N/A
Output Circuit	Condition	U_{oc} (V)	Time (s)	I_{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
-	-	-	-	-	-	-	-

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary Information:

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

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation
Enclosure	Polymeric (Front cover)	3.2	30 mm circular plane	250	5	No deformation
Enclosure	Polymeric (Rear cover)	3.5	30 mm circular plane	250	5	No deformation
Primary wiring	Poylmeric insulator	-	-	10	5	No detachment
Supplementary information:						

T.6, T.9	TABLE: Impact test			P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation
Enclosure	Polymeric (Front cover) Right side	3.2	1300	No damage; No hazard
Enclosure	Polymeric (Rear cover), Left side	3.5	1300	No damage; No hazard
Enclosure	Polymeric (Rear cover), Right side	3.5	1300	No damage; No hazard
Enclosure	Polymeric (Rear cover), Rear toward bottom at PSU location	3.5	1300	No damage; No hazard
Supplementary information:				
Vertical impact conducted				

T.7	TABLE: Drop test			P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation
EUT facing down	Polymeric (Front cover)	3.2	750	No damage; No hazard
EUT facing up	Polymeric (Rear cover)	3.5	750	No damage; No hazard
Supplementary information:				

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

T.8	TABLE: Stress relief test				N/A
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
-	-	-	-	-	-
Supplementary information:					

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

Y.4.3	TABLE: Gasket Tests -Tensile strength and elongation			N/A
Material	Location Fitted	Tensile Strength %	Elongation %	
-	-	-	-	
Supplementary information:				
Tensile strength of not less than 75% and an elongation of not less than 60%.				

Y.4.4	TABLE: Gasket Tests - Compression				N/A
Material	Location Fitted	Thickness at the start of testing (mm)	Thickness at the end of testing (mm)	Compression %	
-	-	-	-	-	
Supplementary information:					
Compression shall not exceed 50%.					

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[1)]
Power Supply	Mean Well	EPP-200-24	Input: 80-264 Vac, 47-63 Hz, 1.8 A Output: 24 Vdc, 5.9 A, 141.6 W	IEC/UL 62368-1	CB, UR
Paper Path Module	ESS	ASM, EV3 (7800-0050508)	24 Vdc, 6 A, 40 °C,	UL 62368-1	Evaluated as part of the system
Appliance Inlet	Schurter	5110	C14, 125 Vac, 15 A, 85 °C, V-0	IEC 60320, UL 498	UR (E72928)
Appliance Outlet	Schurter	0709	Nema 5-15R, 125 Vac, 15 A, 60 °C	UL 60320-1	UR (E103791)
Appliance Outlet Alternate	Rich Bay	RU-02	Nema 5-15R, 125 Vac, 15 A, 60 °C, V-2	UL 60320-1	UR (E128780)
Thermal Circuit Breaker	Tyco Electronics	W58 Series	250 Vac, 25 A, 60 °C	UL 1077, UL 1500	UR (E69543)
Motherboard	Axiomtek	S3D1528101	15-24 Vdc, 55 °C	UL 62368-1	Evaluated as part of the system
Motherboard PCB	Circuitech Precision Electronics Inc.	002V0	V-0, 130 °C	UL 796	UR (E92481)
Backup Battery	Zeus Battery Products	PCLI18650-5S2P ESS1	18.5 Vdc, 5200 mAh	IEC 62133-2, UL 62368-1	CB, Evaluated as part of the system
Backup Battery Protection IC	Ablic	S-8209A Series	7.0 µA max. consumption 85 °C	UL 62368-1	Evaluated as part of the system
Polymeric Enclosure	Sabic	C6600	V-0, 1.5 mm minimum thickness, 80 °C, (75 °C Ball Pressure)	UL 94, UL 796, IEC 60695-10-2	UR
Internal Wiring (Line)	Qifurui Electronics Co	1015	Black, 16 AWG, 80 °C	UL 758, UL 1015	UR (E211048)
Internal Wiring (Neutral)	Qifurui Electronics Co	1015	White, 16 AWG, 80 °C	UL 758, UL 1015	UR (E211048)
Internal Wiring (Bonding)	Qifurui Electronics Co	1015	White, 18 AWG, 80 °C	UL 758, UL 1015	UR (E211048)

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

TFT LCD Module	AUO	G156HAT01.8	15.6 in screen, 3.3 Vdc, 0.98 W, 60 °C, (10.4 W Backlight)	UL 62368-1	cURus (E204356)
Power Cord-Set	Webber Electronics	CW43938 (LT-543B Plug)	125 Vac, 15 A, 14/3 SJT, 60 °C	UL 817, UL 62	UR (121791)
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

Attachment 1 – Test Equipment Used

Clause	Measurement / testing	Testing / measuring equipment / material used	Reference Number	Last Calibration date	Calibration due date
General	-	Environmental Monitor, Omega, iTHx-SD-5	DVF	2023-04-03	2024-04-03
General	-	Thermocouple Wire, Omega, TT-J-30-200	SMZ	Initial Calibration Only	Initial Calibration Only
9, Annex B	Thermal burn, Normal operating condition tests	Digital Stopwatch, Control Company 1051	SMM	2023-08-23	2024-08-23
9, Annex B	Thermal burn, Normal operating condition tests	Multimeter, Gossen, M249A	SMS	2022-07-22	2023-07-22
9, Annex B	Thermal burn, Normal operating condition tests	Temperature Datalogger, Graphtec, GL240, SLH	SLI	2023-03-28	2024-03-28
8	Mechanically caused injury	Force Gauge, ED&D, AFI-500N	SLS	2023-02-25	2024-02-25
5.7.4	Earthed accessible conductive part	Leakage Meter, ED&D, LT-952HC	SLB	2023-03-01	2024-03-01
5.4.9	Electric Strength	HiPot Tester, Vitrek, V70	SNK	2023-03-15	2024-03-15
8.6.2.2	Stability	10-30 Degree Angle, ED&D AM-01	SLT	2023-09-06	2024-09-06
4.4.4, Annex T	Safeguard robustness	Impact Ball, KingPo Technology	SUO	2022-10-25	2023-10-25
Annex P	Entry of conductive object	Jointed Finger Probe, KingPo Technology	SUR	2022-10-25	2023-10-25
Annex P	Entry of conductive object	Feeler gage, ED&D, CC-23	SMO	2023-09-06	2024-09-06

Note: Equipment used was within calibration date at time of testing and has since been calibrated where shown as elapsed.

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 62368-1** **U.S.A. NATIONAL DIFFERENCES** (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to.....:	UL 62368-1:2019		
TRF template used: .....:	IECEE OD-2020-F3, Ed. 1.1		
Attachment Form No.....:	US_ND_IEC62368_1E		
Attachment Originator .....:	UL(US)		
Master Attachment.....:	Dated 2022-03-04		
IEC 62368-1 - US and Canadian National Differences **Special National Conditions based on Regulations and Other National Differences**			
1 (1DV.1) (1.3)	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70 and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.	In accordance with the National Electrical Code (NEC) and the Canadian Electrical Code (CEC) part 1 CAN/CSA C22.1, ANSI/NFPA 70, and unless marked or otherwise identified, the Standard for Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	P
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.		N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.		N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in UL 2391. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits (≤ 200V per conductor to earth).	None	N/A
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 for additional requirements.	Indoor	N/A
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A

Attachment 2 - US National Differences

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.1 (4.1.17)	For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.	None	N/A
	For lengths 3.05 m or less, external interconnecting cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.		N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.	No coin batteries used	N/A
5.4.2.3.2 (5.4.2.3.2.1)	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.		N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.	Class II construction. PE not relied upon.	N/A
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.	No PS3 wiring outside of fire enclosure	N/A
Annex F (F.3.3.9)	Output terminals provided for supply of other equipment, except mains supply, are required to be marked with a maximum rating or reference to equipment permitted to be connected.	Not intended to receive or send power over a network or other equipment.	N/A
Annex F (F.3.7)	Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E.	Indoor	N/A
Annex G (G.7)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	Pluggable equipment	N/A

Attachment 2 - US National Differences

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	Pluggable equipment	N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC.		N/A
	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
	Power supply cords for outdoor equipment are required to be suitable outdoor use type as required by Section 400.4 of the NEC, i.e., marked “W.”		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	None	N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring are required to have special voltage, current, power and marking requirements.	None	N/A
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and complies with Article 230 of the National Electrical Code (NEC), NFPA 70.		N/A
	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.		N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A

Attachment 2 - US National Differences

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. Regulations.		N/A
	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
	Storage batteries and battery management equipment, other than associated with lead-acid batteries, and including battery backup systems that are not an integral part of stationary AV and ICT equipment, such as provided in separate cabinets, are required to be certified (listed) to the appropriate standard(s) for such storage batteries and equipment.		N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m^2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.	Full metal fire enclosure and low flammability materials used (Metal, Plastics rated V-2 or better). All internal plastics are rated min. V-2 and mounted on either metal or min. V-1 material (i.e. a PCB)	P
Annex DVA (10.3)	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	None	N/A
Annex DVA (10.5)	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation produced in the product.	N/A
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.	Not for ITE room	N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position, where mounted in an enclosure, vertically mounted **disconnect switches** and **circuit breakers** with vertical operating means extending outside the enclosure are required to indicate in a location visible when accessing the external operating means whether the switch or circuit breaker is in the open (off) or closed (on) position.	None	N/A

Attachment 2 - US National Differences

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.3.4)	Suitable NEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D).		N/A
Annex DVA (G.4.3)	Interconnection of units by conductors supplied by a limited power source, or a Class 2 circuit defined in the NEC may have field wiring connections other than specified in DVH.3, such as wire-wrap and crimp-on types, if the limited power source and Class 2 circuits are separated from all other circuits by barriers, routing or fixing.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	Transformers are part of certified power supplies	N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix “W” marked on the flexible cord.		N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	If applicable per NEC 725.121(C), some limited power sources supplied from AV/ICT equipment are required to have a label indicating the maximum voltage and rated current output for per conductor for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.		N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC Part 1 are required to be marked with the voltage rating and “Class 2” or equivalent. The marking is located adjacent to the terminals and visible during wiring.		N/A

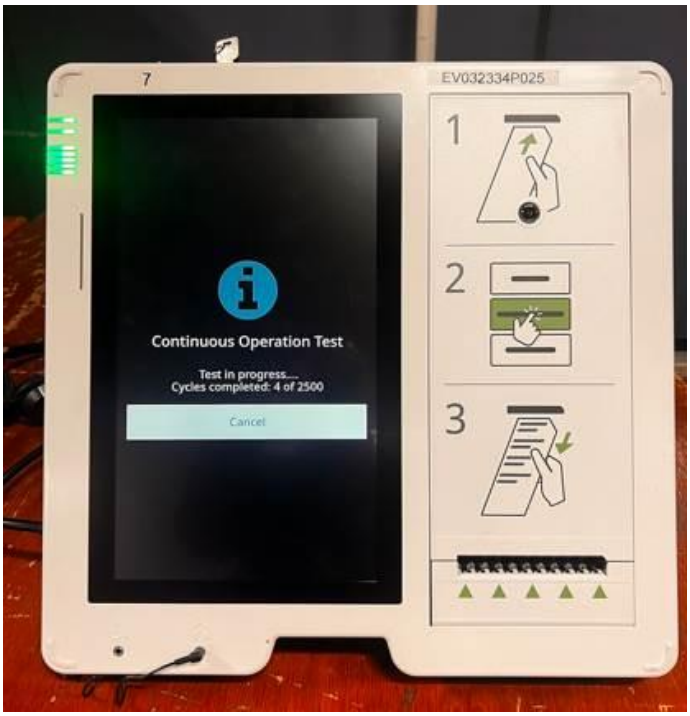
Attachment 2 - US National Differences

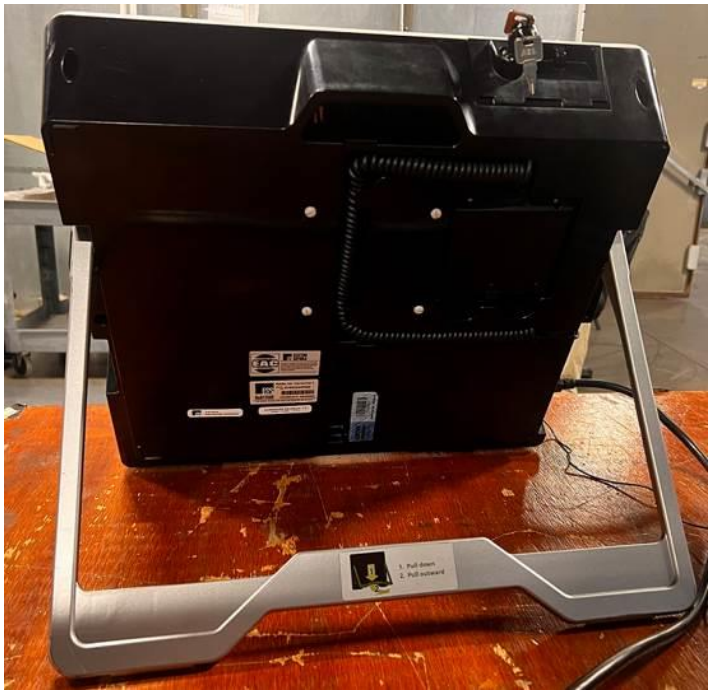
IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Applicable parts of Chapter 8 of the NEC, may be applicable to ITE installed outdoors with connections to communication systems.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.	Not for entertainment purposes	N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.	Not intended for household use	N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S.) component or material requirements. These equipment and components include: appliance couplers, attachment plugs, battery backup systems, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, modular data centres, power supply cords, some power distribution equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	See critical parts list for details of component certifications where US/Canadian certifications were considered	P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.	Pluggable equipment	N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are required to be in accordance with the NEC.		N/A
Annex DVH (DVH.2.1)	For safe and reliable connection to a mains, permanently connected equipment is to be provided.		N/A
Annex DVH (DVH.2.2)	Additional considerations for D.C. mains.		N/A
Annex DVH (DVH.3.2.1)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.		N/A
Annex DVH (DVH.3.2.3)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm^2).		N/A
Annex DVH (DVH.3.2.4)	All associated mains supply terminals are located in proximity to each other and to the main protective earthing terminal, if any.		N/A

Attachment 2 - US National Differences

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.3.2.5)	Terminals are located, guarded or insulated so that, should a strand of a conductor escape when the conductor is fitted, there is no likelihood of accidental contact between such a strand and accessible conductive parts or unearthed conductive parts separated from accessible conductive parts by supplementary insulation only.	Pluggable equipment	N/A
Annex DVH (DVH.3.3)	When field connection to an external circuit is via wires (example, free conductors), the wires are not smaller than 18 AWG (0.82 mm^2) and the free length of the wire inside an outlet box or wiring compartment is 150 mm or more.		N/A
Annex DVH (DVH.3.4)	Size of protective earthing conductors and terminals		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH.4.1)	Wire bending space		N/A
Annex DVH (DVH.4.2)	Volume of wiring compartment		N/A
Annex DVH (DVH.4.3)	Separation of circuits		N/A
Annex DVH (DVH.5)	Equipment markings and instructional safeguards		N/A
Annex DVH (DVH.5.1)	Identification of protective earthing terminal		N/A
Annex DVH (DVH.5.2)	Identification of terminal for earthed conductor (neutral)		N/A
Annex DVH (DVH.5.3)	Identification of terminals for aluminium conductors		N/A
Annex DVH (DVH.5.4)	Wire temperature ratings		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

Attachment 3 - Photographs of the equipment





External View

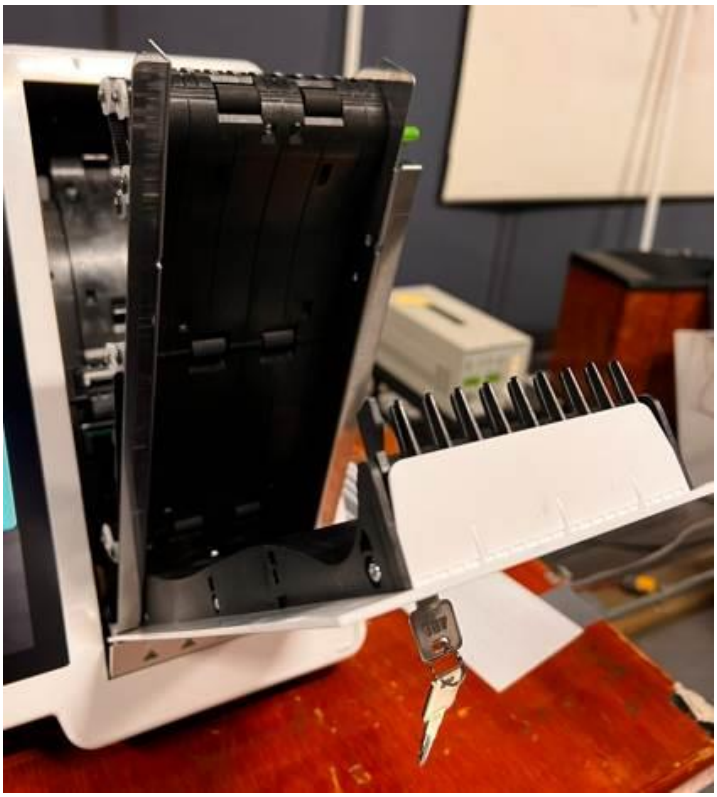
Attachment 3 - Photographs of the equipment

External View

Attachment 3 - Photographs of the equipment

ADA compliance keypad, ordinary person

Attachment 3 - Photographs of the equipment



Internal View, Paper Patch Module

Internal View

Attachment 3 - Photographs of the equipment

Meanwell Open Frame Power Supply

Attachment 3 - Photographs of the equipment

Battery Pack

Appliance Inlet and Outlet-Socket

Attachment 4 – Power Supply Conditions of Acceptability

Additional application considerations – (Considerations used to test a component or sub-assembly) -
The following secondary output circuits are ES1: all outputs.

The power supply terminals and/or connectors are: Suitable for factory wiring only

The maximum investigated branch circuit rating is: 20 A

The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C): T1 (Class B)

The equipment is suitable for direct connection to: AC mains supply

The means of connection to the mains supply is: to be determined in the end product

The equipment disconnect devices is considered: to be determined in the end product

TRF No. IEC62368_1D

Attachment 4 – Power Supply Conditions of Acceptability

Proper bonding to the end-product main protective earthing termination is: Required

An investigation of the protective bonding terminals has: Not been conducted

The equipment is defined as Class I equipment and shall be connected to protective earth in the end product installation.

Testing for with fan condition was conducted with one inward blowing DC fan (air flow= 9.6 CFM) and CN101 is FAN Connector load 12V, 0.5A for all model with fan, refer Diagrams ID 4-03 for details.

The need for suitable Electrical enclosure (for ES safeguard), fire enclosure (for PS safeguard), mechanical enclosure (for MS safeguard), and safeguard for thermal burn injury (for TS safeguard) is to be evaluated and provided (if necessary) when it's employed in the end-use equipment.

Technical Considerations

- The Risk Group of a lamp or lamp system (including LEDs) is : Exempt
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual
- 1.2 The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50 °C for PCB type and Enclosure type with Fan;45 degree C for Enclosure type without fan, 45°C for Model EPP-200-54BMD.
- 1.4 The product is intended for use on the following power systems: TN
- 1.5 The equipment disconnect device is considered to be: evaluated in the end product.

Engineering Conditions of Acceptability
When installed in an end-product, consideration must be given to the following:
The following secondary output circuits are ES1: all outputs.

The power supply terminals and/or connectors are: Suitable for factory wiring only

The maximum investigated branch circuit rating is: 20 A

The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C): T1 (Class B)

The equipment is suitable for direct connection to: AC mains supply

The means of connection to the mains supply is: to be determined in the end product

The equipment disconnect devices is considered: to be determined in the end product

Proper bonding to the end-product main protective earthing termination is: Required

An investigation of the protective bonding terminals has: Not been conducted

The equipment is defined as Class I equipment and shall be connected to protective earth in the end product installation.

Testing for with fan condition was conducted with one inward blowing DC fan (air flow= 9.6 CFM) and CN101 is FAN Connector load 12V, 0.5A for all model with fan, refer Diagrams ID 4-03 for details.

TRF No. IEC62368_1D

Attachment 4 – Power Supply Conditions of Acceptability

The need for suitable Electrical enclosure (for ES safeguard), fire enclosure (for PS safeguard), mechanical enclosure (for MS safeguard), and safeguard for thermal burn injury (for TS safeguard) is to be evaluated and provided (if necessary) when it's employed in the end-use equipment.