OUWTCF073001-LVD

Technical Construction File

For

Netcon Enterprise Pvt Ltd.

NETCON Outdoor UPS 1-10KVA with air conditioner

Model: NTPR1K, NTPR2K, NTPR3K, NTPR6K, NTPR10K

Prepared For : **Netcon Enterprise Pvt Ltd.**
430A, Kathirvedu, Puzhal, Chennai- 600066, India

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Report Number: **OUWTCF073001-LVD**
Date of Test: **2024-08-05**
Date of Report: **2024-08-05**

OUWTCF073001-LVD

TEST REPORT DECLARATION

Applicant	:	Netcon Enterprise Pvt Ltd.
Address	:	430A, Kathirvedu, Puzhal, Chennai- 600066, India
Manufacturer	:	Netcon Enterprise Pvt Ltd.
Address	:	430A, Kathirvedu, Puzhal, Chennai- 600066, India
EUT Description	:	NETCON Outdoor UPS 1-10KVA with air conditioner
Model No.	:	NTPR1K, NTPR2K, NTPR3K, NTPR6K, NTPR10K
Remark	:	N/A

Test Procedure Used:

EN IEC 62040-1:2019+A11:2021,EN IEC 62368-1:2020+A11:2020

The test results of this report relate only to the tested sample identified in this report.

Date of Test : 2024-08-05

Prepared by (Jack)

Checked by : (Gina)

Approved by : (Johnson)

Clause	Requirement-Test	Result-Remark	Verdict
5	**Fundamental design requirements**		**P**
5.1	Protection against electric shock and energy hazards		P
5.1.1	Protection for UPS intended to be used in operator access areas		P
	The requirements and restrictions of 2.1.1/RD apply.		P
	The requirements for protection against electric shock from energized parts are based on the principle that the operator is permitted to have access to: – bare parts of SELV circuits; and – bare parts of limited current circuits; and – TNV circuits under specified conditions	Pass muster	P
5.1.2	Protection for UPS intended to be used in service access areas		P
	In a service access area, the following requirements apply.		P
	Bare parts at hazardous voltage shall be located or guarded so that unintentional contact with such parts is unlikely during service operations involving other parts of the equipment. Bare parts at hazardous voltage shall be located or guarded so that accidental shorting to SELV circuits or to TNV circuits (for example, by tools or test probes used by a service person) is unlikely.	Pass muster	P
5.1.3	Protection for UPS intended to be used in restricted access areas		P
	For equipment to be installed in a restricted access location, the requirements for operator access areas apply, except as permitted in the following three paragraphs.		P
	Contact with bare parts of a secondary circuit at hazardous voltage with the test finger, Figure 2A/RD (see 2.1.1.1/RD) is permitted. However, such parts shall be so located or guarded that unintentional contact is unlikely.	Pass muster	P
5.1.4	Backfeed protection		P
	A UPS shall prevent hazardous voltage or hazardous energy from being present on the UPS input a.c. terminals after interruption of the input a.c. power.		P
	For permanently connected UPS, the requirement may be implemented with the use of an a.c. input line isolation device external to the UPS, in which case: – the requirement applies to the input terminals of the isolation device, – the UPS supplier shall provide or specify a suitable isolating device, – additional labeling applies (4.7.3).	Pass muster	P

Clause	Requirement-Test	Result-Remark	Verdict
5.1.5	Emergency switching (disconnect) device		P
	A UPS shall be provided with an integral single emergency switching device (or terminals for the connection of the remote emergency switching device), which prevents further supply to the load by the UPS in any mode of operation. If reliance is placed on additional disconnection of supplies in the building wiring installation, the installation instructions shall so state. The requirement is not mandatory for pluggable UPS if permitted by national wiring rules.	Pass muster	P
5.2	Requirements for auxiliary circuits		N
5.2.1	Safety extra low voltage circuits – SELV		N
	The provisions of 2.2/RD apply for any SELV circuits provided by the UPS.		N
5.2.2	Telephone network voltage circuits – TNV		N
	The provisions of 2.3/RD apply for any incoming TNV circuits supported by the UPS.		N
5.2.3	Limited current circuits		N
	The provisions of 2.4/RD apply for any limited current circuits provided by the UPS.		N
5.2.4	External signalling circuits		N
	The provisions of 3.5/RD applies.		N
5.2.5	Limited power source		N
	The provisions of 2.5/RD apply.		N
5.3	Protective earthing and bonding		P
5.3.1	General		P
	The provisions of 2.6/RD apply together with the following.		P
5.3.2	Protective earthing		P
	Accessible conductive parts of Class I equipment, which might assume a hazardous voltage in the event of a single insulation fault, shall be reliably connected to a protective earthing terminal within the equipment.	Class I Pass muster	P
5.3.3	Protective bonding		P
	The UPS output a.c. circuit shall be referenced to the protective earth of the equipment as required by the AC power distribution system in which the UPS is intended to operate.	Pass muster	P
	The bonding of the protective earth and neutral conductors applies to all modes of operation of the unit. The physical bonding point may be external to the UPS.		P

Clause	Requirement-Test	Result-Remark	Verdict
5.4	AC and d.c. power isolation		P
5.4.1	General		P
	The provisions of 3.4/RD apply together with the following.		P
5.4.2	Disconnect devices		P
	Means shall be provided to disconnect the UPS from the a.c. and d.c. supplies for service and testing by qualified personnel.	Pass muster	P
5.5	Overcurrent and earth fault protection		P
5.5.1	General		P
	The provisions of 2.7.3/RD, 2.7.4/RD, 2.7.5/RD, 2.7.6/RD apply together with the following.		P
5.5.2	Basic requirements		P
	Protection against excess currents, short circuits and earth faults in input and output circuits shall be provided, either as an integral part of the equipment or as part of the building installation.	Pass muster	P
5.5.3	Battery circuit protection		N
5.5.3.1	Overcurrent and earth fault protection		N
	A battery supply circuit shall be provided with overcurrent and earth fault protection and shall comply with the requirements described in 5.5.3.2 and 5.5.3.3.		N
	Where the batteries are installed inside the UPS, the battery supply circuit shall be provided with a protective device.		N
5.5.3.3	Rating of protective devices		N
	The rating of the overcurrent protective device located internally shall be such as to protect against conditions described in 5.3.1/RD.		N
5.6	Protection of personnel – Safety interlocks		P
5.6.1	Operator protection		P
	To areas where operators have access, the provisions and compliance requirements of 2.8/RD safety interlocks apply.	Pass muster	P
5.6.2	Service person protection		P
5.6.2.1	Introduction		P
	In addition to the requirements of 2.8/RD, the following subclauses apply to service persons who find it necessary to reach over, under, across and around an uninsulated electrical part or moving part to make adjustments or measurements while the UPS is energized.	Pass muster	P
5.6.2.2	Covers		P

Clause	Requirement-Test	Result-Remark	Verdict
	Parts at hazardous voltage or energy level shall be so arranged and covers so located as to reduce the risk of electric shock or high current levels while covers are being removed and replaced	Pass muster	P
5.6.2.3	Location and guarding of parts		P
	Parts at hazardous voltage or energy level and moving parts that involve a risk of injury to persons shall be located, guarded or enclosed so as to reduce the likelihood of unintentional contact by a service person adjusting or resetting controls, or the like, or performing mechanical functions that may be performed with the UPS energized, such as lubricating a motor, adjusting the setting of a control with or without marked dial settings, resetting a trip mechanism or operating a manual switch.	Pass muster	P
5.6.2.4	Parts on doors		N
	Parts at hazardous voltage or energy level located on the rear side of a door shall be guarded or insulated to reduce the likelihood of unintentional contact of the live parts by a service person		N
5.6.2.5	Component access		P
	A component that requires inspection, resetting, adjustment, servicing or maintenance while energized shall be so located and mounted with respect to other components and with respect to grounded metal parts that it is accessible for electrical service functions without subjecting the service person to the risk of electric shock, hazardous energy level, high current or injury to person by adjacent moving parts. Access to a component shall not be impeded by other components or wiring.	Pass muster	P
5.6.2.6	Moving parts		N
	Moving parts that can cause injury to persons during service operations shall be located or protected so that unintentional contact with the moving parts is not likely.		N
5.6.2.7	Capacitor banks		P
	Capacitor banks shall be fitted with a means of discharge for protection of service persons. A warning label shall be added if discharge time exceeds 1,0 s, stating the time taken to reduce the hazard to a safe level (not greater than 5 min) (see 1.2.8.5/RD and 1.2.8.8/RD).	Pass muster	P
5.6.2.8	Internal batteries		N
	Internal batteries shall be so arranged as to minimize risk of electric shock from inadvertent contact with terminals and the interconnection method shall be such as to minimize risk of short-circuiting and electric shock during servicing and replacement.		N
5.7	Clearances, creepage distances and distances through insulation		P

Clause	Requirement-Test	Result-Remark	Verdict
	The provisions of 2.10/RD apply.	Clearances:9.8mm Creepage:9.8mm	P

6	**Wiring, connections and supply**		P
6.1	General		P
6.1.1	Introduction		P
	The provisions and compliance requirements of 3.1/RD apply together with the following		P
	Supply leads to apparatus and measuring instruments in covers or doors shall be so installed that no mechanical damage can occur to conductors as a result of movement of these covers or doors.	Pass muster	P
6.1.2	Dimensions and ratings of busbars and insulated conductors		P
	The choice of cross-sections of conductors inside the UPS is the responsibility of the manufacturer. In addition to the current which must be carried, the choice is governed by the mechanical stresses to which the UPS is subjected, by the way the conductors are laid, by type of insulation and, if applicable, by the kind of elements connected (for example, electronics).	Pass muster	P
6.2	Connection to power		P
6.2.1	General provisions for connection to power		P
	The provisions of 3.2.2/RD, 3.2.3/RD, 3.2.4/RD, 3.2.5/RD, 3.2.6/RD, 3.2.7/RD, 3.2.8/RD apply together with the following.	Pass muster	P
6.2.2	Means of connection		P
	For safe and reliable connection to the primary power supply, UPSs are classified and connected as follows (see 1.2.5.2/RD): – UPS for permanent connection: terminals for permanent connection to the supply; – pluggable UPS type B: non-detachable power supply cord or a type B appliance coupler meeting the requirements of 3.2.5/RD; – pluggable UPS type A: an appliance inlet for connection of a detachable power supply cord or a non-detachable power supply cord meeting the requirements of 3.2.5/RD.	pluggable UPS type A	P
6.3	Wiring terminals for external power conductors		P
	Provisions shall be made for the securement of external power cable glands and accessories, for example, metal/wire sheaths to prevent movement of the cable in its installed condition.		P

Clause	Requirement-Test	Result-Remark	Verdict
	The manufacturer shall indicate if the terminals are suitable for connection of copper or aluminium conductors or both. The terminals shall be such that the external conductors may be connected by a means (screws, connectors, etc.) which ensures that the necessary contact pressure corresponding to the current rating and the short-circuit strength of the apparatus and the circuit is maintained.	Pass muster	P

7	**Physical requirements**		P
7.1	Enclosure		P
	The frame or chassis of a unit shall not be used to carry current during intended operation.	Pass muster	P

7.2	Stability		P
	Under conditions of normal use, units and equipment shall not become physically unstable to the degree that they may become a hazard to operators and service persons.	Pass muster	P
7.3	Mechanical strength		P
	The provisions of 4.2/RD apply.		P
7.4	Construction details		P
7.4.1	Introduction		P
	The provisions of 4.3.1/RD, 4.3.2/RD, 4.3.3/RD, 4.3.4/RD, 4.3.5/RD, 4.3.7/RD, 4.3.11/RD, 4.4/RD and 4.5/RD apply together with the following.		P
	The minimum protection degree IP20 shall be provided for enclosures when installed in accordance with manufacturer's instructions unless a greater level of protection is stated by the manufacturer.	Pass muster	P
7.4.2	Openings		P
	Openings vertically above bare parts at hazardous voltages in the top of a fire enclosure or an electrical enclosure shall not exceed 5 mm in any dimension unless the construction prevents vertical access to such parts, for example, by means of a trap or similar restriction (see Figure 4B/RD). This requirement does not apply to equipment having openings in the top of an enclosure with a height exceeding 1,8 m.	Pass muster	P
7.4.3	Gas concentration		N
	Equipment that, in normal use, contains batteries shall incorporate adequate safeguards against the risk of explosive gas concentration and internal or external spillage (see also 7.6 and Annex M).		N
7.4.4	Equipment movement		P

Clause	Requirement-Test	Result-Remark	Verdict
	Equipment provided with castors to temporarily enable easy movement to installed position and intended to have rigid fixed wiring shall have an additional method to ensure the equipment does not move when installed. For a unit having mass of 25 kg or more, a force equal to 20 % of the weight of the unit but not more than 250 N is applied to verify that the unit does not move.	Pass muster	P
7.5	Resistance to fire		P
	The provisions of 4.7/RD apply with the following. UPS intended to be used in operator access areas (see 5.1.1) shall meet the minimum requirements of 4.7.2/RD.	Pass muster	P
7.6	Battery location		N
7.6.1	Battery location and installation		N
	Batteries for use with UPS shall be installed taking into account the requirements prescribed in 7.6.2 through 7.6.8.		N
	Batteries shall be installed in: – separate battery rooms or buildings; – separate cabinets or compartments, indoor or outdoor; – battery bays or compartments within the UPS.		N
7.6.2	Accessibility and maintainability		N
	When deemed necessary, battery poles and battery connectors shall be accessible so that their fixings can be tightened with the correct tools. Batteries with liquid electrolyte must be so located that the battery cell caps are accessible for electrolyte tests and readjusting of electrolyte levels.		N
7.6.3	Distance		N
	Battery cells shall be mounted with a distance to each other for the purpose of complying with ventilation, battery temperature and insulation requirements		N
7.6.4	Case insulation		N
	Cells in conductive casings shall have adequate insulation between each other and to cabinets or compartments. Such insulation shall meet the requirements of 5.2/RD.		N
7.6.5	Wiring		N
	Contacts, connections and wiring shall be protected against effects of ambient temperature, moisture, gas, vapor and mechanical stress according to Clause 6		N
7.6.6	Electrolyte spillage		N
	To prevent electrolyte spillage from the battery, adequate protection such as an electrolyteresistive coating on the battery trays and cabinets shall be provided.		N

Clause	Requirement-Test		Result-Remark	Verdict
7.6.7	Ventilation			N
	Proper ventilation shall be provided so that any potential explosive mixtures of hydrogen and oxygen are dispersed safely below hazardous levels.			N
7.6.8	Charging voltages			N
	Batteries shall be protected against excessive voltages, including under a single fault condition, for example due to a charger failure, by switching off the charger or interrupting the charging current. The charging voltage limits shall be as declared by the manufacturer.			N
7.7	Temperature rise			P
	The provisions of 4.5/RD apply			P
	Insulation, including winding insulation, of – Class A material 105 – Class E material 120 – Class B material 130 – Class F material 155 – Class H material 180 – Class C material 200 – Class N material 220 – Class P material 250	Maximum temperature ℃ 100 115 120 140 165 180 200 225	32.7℃	P

8	**Electrical requirements and simulated abnormal conditions**		P
8.1	General provisions for earth leakage		P
	The provisions of 5.1.1/RD apply together with the following.		P
	Where the circuit configuration is such that in any mode of operation the UPS protective earth conductor will carry the sum of the UPS and connected load earth leakage currents, the UPS shall meet the following requirements.	0.17mA	P
8.2	Electric strength		P
	The provisions of 5.2/RD apply.	1500V no damage	P
8.3	Abnormal operating and fault conditions		P
8.3.1	General		P
	The provisions of 5.3.1/RD, 5.3.2/RD, 5.3.3/RD, 5.3.4/RD, 5.3.5/RD, 5.3.9/RD apply together with the following.		P
8.3.2	Simulation of faults		P
	For components and circuits other than those covered by 5.3.2/RD, 5.3.3/RD and 5.3.5/RD, compliance is checked by simulating the following conditions:		P

Clause	Requirement-Test	Result-Remark	Verdict
	– faults in any components in primary circuits; – faults in any components where failure could adversely affect supplementary insulation or reinforced insulation; – additionally, for equipment that does not comply with the requirements of 4.7.1/RD and 4.7.2/RD, faults in all components; – faults arising from connection of the most unfavourable load impedance to terminals and connectors that deliver power or signal outputs from the equipment, other than main power outlets.	Pass muster	P
8.3.3	Conditions for tests		P
	Equipment shall be tested by applying any condition that may be expected in normal use and foreseeable misuse, with the UPS operating at rated voltage or at the upper limit of the rated voltage range.		P

9	**Connection to telecommunication networks**		N
	The provisions of Clause 6/RD and 3.5/RD apply together with the following: 2.1.3/RD, 2.3.1/RD, 2.3.2/RD, 2.3.3/RD, 2.3.4/RD, 2.3.5/RD, 2.6.5.8/RD, 2.10.3.3/RD, 2.10.3.4/RD, 2.10.4/RD, Annex M/RD.		N

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Clause	Requirement + Test	Result - Remark	Verdict

4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components		P
4.1.3	Equipment design and construction		P
4.1.15	Markings and instructions.....:	(See Annex F)	P
4.4.4	Safeguard robustness		P
4.4.4.2	Steady force tests.....:	(See Annex T.4)	P
4.4.4.3	Drop tests .....:		N/A
4.4.4.4	Impact tests .....:	Transportable equipment	N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:	No such enclosure and barrier	N/A
4.4.4.6	Glass Impact tests .....:	No glass used	N/A
4.4.4.74	Thermoplastic material tests.....:	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard.....:	No such safeguard used	N/A
4.4.4.9	Accessibility and safeguard effectiveness	All other safeguards remain effective and no class 3 energy sources become accessible.	P
4.5	Explosion		P
4.6	Fixing of conductors		N/A
4.6.1	Fix conductors not to defeat a safeguard		N/A
4.6.2	10 N force test applied to .....:		N/A
4.7	Equipment for direct insertion into mains socket - outlets	Not such equipment	N/A
4.7.2	Mains plug part complies with the relevant standard.....:		N/A
4.7.3	Torque (Nm) .....:		N/A
4.8	Products containing coin/button cell batteries	No such battery used	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery.....:		—
4.8.4	Battery Compartment Mechanical Tests .....:		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object.....:		P

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Clause	Requirement + Test	Result - Remark	Verdict

5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications ..... :		P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current..... :		N/A
5.2.2.3	Capacitance limits ..... :		N/A
5.2.2.4	Single pulse limits ..... :		N/A
5.2.2.5	Limits for repetitive pulses ..... :		N/A
5.2.2.6	Ringing signals ..... :		N/A
5.2.2.7	Audio signals ..... :		P
5.3	Protection against electrical energy sources		N/A
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards		N/A
5.3.2.2	Contact requirements		N/A
	a) Test with test probe from Annex V ..... :		N/A
	b) Electric strength test potential (V) ..... :		N/A
	c) Air gap (mm) ..... :		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		N/A
5.4.1.3	Humidity conditioning ..... :		N/A
5.4.1.4	Maximum operating temperature for insulating materials ..... :		P
5.4.1.5	Pollution degree ..... :		—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage		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 softening temperature..... :		N/A
5.4.1.10.3	Ball pressure ..... :		N/A
5.4.2	Clearances		N/A
5.4.2.2	Determining clearance using peak working voltage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.3	Determining clearance using required withstand voltage ..... :		N/A
	a) a.c. mains transient voltage ..... :		—
	b) d.c. mains transient voltage ..... :		—
	c) external circuit transient voltage ..... :		—
	d) transient voltage determined by measurement ..... :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages ..... :		N/A
5.4.3	Creepage distances ..... :		N/A
5.4.3.1	General		N/A
5.4.3.3	Material Group ..... :		—
5.4.4	Solid insulation		N/A
5.4.4.2	Minimum distance through insulation ..... :		N/A
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) ..... :		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material ..... :		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz ..... :		N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ)..... :		—
5.4.6	Insulation of internal wire as part of supplementary safeguard ..... :		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Relative humidity (%)....:		—
	Temperature (°C) ....:		—
	Duration (h) ....:		—
5.4.9	Electric strength test....:		N/A
5.4.9.1	Test procedure for a solid insulation type test		N/A
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test ....:		N/A
5.4.10.2.3	Steady-state test....:		N/A
5.4.11	Insulation between external circuits and earthed circuitry ....:		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V)....:		—
	Nominal voltage U_{peak} (V)....:		—
	Max increase due to variation U_{sp} ....:		—
	Max increase due to ageing ΔU_{sa} ....:		—
	$U_{op}= U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ ....:		—
5.5	Components as safeguards		
5.5.1	General		N/A
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector....:		N/A
5.5.3	Transformers		N/A
5.5.4	Optocouplers		N/A
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPD’s		N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:		N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm^2) .....:		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm^2).....:		—
	Protective current rating (A) ..... :		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm^2), nominal thread diameter (mm). .....:		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω).....:		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		N/A
5.7.2	Measuring devices and networks		N/A
5.7.2.1	Measurement of touch current .....:		N/A
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
	System of interconnected equipment (separate connections/single connection) .....:		—
	Multiple connections to mains (one connection at a time/simultaneous connections) .....:		—
5.7.4	Earthed conductive accessible parts.....:		N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V).....:		—
	Measured current (mA).....:		—
	Instructional Safeguard.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A
6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications		P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault ... :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault ..... :	(See appended table 6.2.2)	P
6.2.2.4	PS1 ..... :	(See appended table 6.2.2)	P
6.2.2.5	PS2 ..... :	(See appended table 6.2.2)	P
6.2.2.6	PS3 ..... :		N/A
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS ..... :	No arcing PIS exists	N/A
6.2.3.2	Resistive PIS ..... :	No identification of resistive PIS required due to providing fire enclosure and it complied with requirements of sub-clause 6.4.8	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure	V-0 enclosure and PCB used	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Control of fire spread	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	V-0 enclosure and PCB used	N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions..... :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards .....:	(See appended tables 4.1.2)	P
6.4.6	Control of fire spread in PS3 circuit	No PS3 exist	N/A
6.4.7	Separation of combustible materials from a PIS	Fire enclosure used	N/A
6.4.7.1	General.....:		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	The fire enclosure is the overall enclosure	P
6.4.8.1	Fire enclosure and fire barrier material properties	V-0	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings	No openings	N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....:		N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....:		N/A
	Flammability tests for the bottom of a fire enclosure .....:		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....:		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:	V-0	P
6.5	Internal and external wiring		N/A
6.5.1	Requirements		N/A
6.5.2	Cross-sectional area (mm^2) .....:		—
6.5.3	Requirements for interconnection to building wiring .....:	No such wiring	N/A
6.6	Safeguards against fire due to connection to additional equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	External port limited to PS2 or complies with Clause Q.1		N/A
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		P
7.2	Reduction of exposure to hazardous substances		P
7.3	Ozone exposure	No ozone produced.	N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions ..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010) .....:		—
7.6	Batteries.....:	(See Annex M)	P
8	**MECHANICALLY-CAUSED INJURY**		P
8.1	General	Enclosure is smooth and no mechanical energy sources	P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources	No additional safeguards is needed to against mechanical energy sources	N/A
8.4	Safeguards against parts with sharp edges and corners	No sharp edges and corners.	P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts	No moving parts within EUT	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard..... :		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks .....:		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....:		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N) .....:		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.5.2	High Pressure Lamp Explosion Test.....:		N/A
8.6	Stability		N/A
8.6.1	Product classification		N/A
	Instructional Safeguard.....:		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force.....:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt.....:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....:		N/A
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....:		N/A
8.7.2	Direction and applied force.....:		N/A
8.8	Handles strength	No handle	N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....:		N/A
8.9	Wheels or casters attachment requirements		P
8.9.1	Classification		P
8.9.2	Applied force .....:		—
8.10	Carts, stands and similar carriers	Not such devices	N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard.....:		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force .....:		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N).....:		—
8.10.6	Thermoplastic temperature stability (°C).....:		N/A
8.11	Mounting means for rack mounted equipment	Not such apparatus	N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.11.3	Mechanical strength test, variable *N* .....:		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....	No antennas	N/A
	Button/Ball diameter (mm).....:		—
9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications		P
9.3	Safeguard against thermal energy sources		P
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard .....:		N/A
10	**RADIATION**		N/A
10.2	Radiation energy source classification	No such radiation energy source	N/A
10.2.1	General classification		N/A
10.3	Protection against laser radiation		N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault..... :		N/A
	Instructional safeguard ..... :		—
	Tool..... :		—
10.4	Protection against visible, infrared, and UV radiation		N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons .....:		N/A
10.4.1.b)	RS3 accessible to a skilled person.....:		N/A
	Personal safeguard (PPE) instructional safeguard.....:		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 . :		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions .....:		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque.....:		N/A
10.4.1.f)	UV attenuation.....:		N/A
10.4.1.g)	Materials resistant to degradation UV .....:		N/A
10.4.1.h)	Enclosure containment of optical radiation.....:		N/A
10.4.1.i)	Exempt Group under normal operating conditions.....:		N/A
10.4.2	Instructional safeguard .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment :		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards.....:		N/A
	Instructional safeguard for skilled person..... :		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation .....:		—
	Abnormal and single-fault condition ..... :		N/A
	Maximum radiation (pA/kg)..... :		N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)..... :		N/A
	Output voltage, unweighted r.m.s..... :		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards ..... :		N/A
	Equipment safeguard prevent ordinary person to RS2..... :		—
	Means to actively inform user of increase sound pressure..... :		—
	Equipment safeguard prevent ordinary person to RS2..... :		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output..... :		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A)..... :		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A)..... :		—

B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers ..... :	(See Annex E)	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test..... :		P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements..... :		P
B.3.2	Covering of ventilation openings	No openings within the EUT	N/A
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector ..... :	No such selector	N/A
B.3.5	Maximum load at output terminals ..... :	No such terminals used	N/A
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		P
B.3.8	Safeguards functional during and after abnormal operating conditions		P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited ..... :	No such controlling device	N/A
B.4.3	Motor tests		P
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature ..... :		P
B.4.4	Short circuit of 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		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 disconnect of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions ... :		P
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation	General indoor used equipment only	N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
D	**TEST GENERATORS**		N/A
D.1	Impulse test generators	Not such apparatus	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**		P
E.1	Audio amplifier normal operating conditions		P
	Audio signal voltage (V) .....:		—
	Rated load impedance (Ω) .....:		—
E.2	Audio amplifier abnormal operating conditions		P
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	General requirements		P
	Instructions – Language .....:	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	On the rear enclosure	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification .....:	See page 3 for details	—
F.3.2.2	Model identification .....:	See page 3 for details	—
F.3.3	Equipment rating markings	See page 3 for details	P
F.3.3.1	Equipment with direct connection to mains		N/A
F.3.3.2	Equipment without direct connection to mains		P
F.3.3.3	Nature of supply voltage.....:	See page 3 for details	—
F.3.3.4	Rated voltage .....:	See page 3 for details	—
F.3.3.4	Rated frequency.....:		—
F.3.3.6	Rated current or rated power .....:	See page 3 for details	—
F.3.3.7	Equipment with multiple supply connections	No multiple supply connection	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.4	Voltage setting device	No such device	N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings..... :		N/A
F.3.5.2	Switch position identification marking ..... :		N/A
F.3.5.3	Replacement fuse identification and rating markings..... :		N/A
F.3.5.4	Replacement battery identification marking ..... :		N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I Equipment		P
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....:	IPX0 equipment	—
F.3.8	External power supply output marking	No such power supplied provided	N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings	After test there was no damage on the label. The marking on the label did not fade. There was no curling and lifting of the label edge.	P
F.4	Instructions		N/A
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use		N/A
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
j)	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
G	**COMPONENTS**		N/A
G.1	**Switches**		N/A
G.1.1	General requirements	No such device used	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	**Relays**		N/A
G.2.1	General requirements	No such device used	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	**Protection Devices**		N/A
G.3.1	Thermal cut-offs	No such device used	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691	No such device used	N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) ..... :		—
	Single Fault Condition ..... :		—
	Test Voltage (V) and Insulation Resistance (Ω). :		—
G.3.3	PTC Thermistors	No such device used	N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions.....:	(See appended Table B.4)	N/A
G.4	**Connectors**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.4.1	Spacings	No such device used	N/A
G.4.2	Mains connector configuration .....:		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	**Wound Components**		N/A
G.5.1	Wire insulation in wound components.....	No such device used	N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....:		—
	Temperature (°C) .....:		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	**Transformers**		N/A
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....:	No such device used	N/A
	Position.....:		—
	Method of protection .....:		—
G.5.3.2	Insulation		N/A
	Protection from displacement of windings.....:		—
G.5.3.3	Overload test..... :		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	**Motors**		N/A
G.5.4.1	General requirements	No such device used	N/A
	Position .....:		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....:		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V).....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V).....:		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....:		N/A
	Electric strength test (V) .....:		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V).....:		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....:		—
G.6	**Wire Insulation**		P
G.6.1	General		P
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	**Mains supply cords**		N/A
G.7.1	General requirements	No mains supply cords used	N/A
	Type.....:		—
	Rated current (A).....:		—
	Cross-sectional area (mm^2), (AWG)..... :		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) .....:		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)....:		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry ..... :		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) ..... :		—
	Diameter (m) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Temperature (°C) .....:		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	**Varistors**		N/A
G.8.1	General requirements	No such components used	N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test .....:		N/A
G.8.3.3	Temporary overvoltage .....:		N/A
G.9	**Integrated Circuit (IC) Current Limiters**		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No such components used	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....:		—
G.9.1 d)	IC limiter output current (max. 5A) .....:		—
G.9.1 e)	Manufacturers' defined drift .....:		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	**Resistors**		N/A
G.10.1	General requirements	No such components used	N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	**Capacitor and RC units**		N/A
G.11.1	General requirements	No such components used	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 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....:	No such components used	N/A
	Type test voltage Vini .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Routine test voltage, Vini,b .....:		—
G.13	**Printed boards**		N/A
G.13.1	General requirements	No such components used	N/A
G.13.2	Uncoated printed boards		N/A
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction).....:		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation.....:		N/A
	Number of insulation layers (pcs) .....:		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements ..... :		N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements	No such components used	N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours	No such components used	N/A
b)	Impulse test using circuit 2 with Uc = to transient voltage .....:		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
C2)	Test voltage .....:		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....:		—
D3)	Resistance .....:		—
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	General	Not such apparatus	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....:		—
H.3.1.2	Voltage (V) .....:		—
H.3.1.3	Cadence; time (s) and voltage (V) .....:		—
H.3.1.4	Single fault current (mA):.....:		—
H.3.2	Tripping device and monitoring voltage .....:		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....:		—
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		N/A
	General requirements	No such winding wire used	N/A
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements	No safety interlocks in the EUT	N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance .....:		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method .....:		N/A
K.7	Interlock circuit isolation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....:		N/A
K.7.2	Overload test, Current (A) .....:		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test .....:		N/A
L	**DISCONNECT DEVICES**		N/A
L.1	General requirements		N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method) .. :		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance .....:		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature .....:		—
M.4.2.2 b)	Single faults in charging circuitry .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) ..... :		N/A
M.6.2	Leakage current (mA) ..... :		N/A
M.7	Risk of explosion from lead acid and NiCd batteries	No such battery used	N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries	No such battery used	N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume Vz (m^3/s)..... :		—
M.8.2.3	Correction factors..... :		—
M.8.2.4	Calculation of distance d (mm) ..... :		—
M.9	Preventing electrolyte spillage	No such battery used	N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) ..... :		N/A
N	**ELECTROCHEMICAL POTENTIALS**		P
	Metal(s) used ..... :	Pollution degree considered	—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		N/A
	Figures O.1 to O.20 of this Annex applied ..... :		—
P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		N/A
P.1	General requirements		N/A
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm) ..... :		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts ..... :		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) ..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C) ..... :		—
	Tr (°C) ..... :		—
	Ta (°C) ..... :		—
P.4.2 b)	Abrasion testing ..... :		N/A
P.4.2 c)	Mechanical strength testing ..... :		N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		N/A
Q.1	Limited power sources		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (test condition), (°C).....:		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A

T	**MECHANICAL STRENGTH TESTS**		**P**
T.1	General requirements		P
T.2	Steady force test, 10 N .....:		N/A
T.3	Steady force test, 30 N .....:		N/A
T.4	Steady force test, 100 N .....:		P
T.5	Steady force test, 250 N .....:		N/A
T.6	Enclosure impact test		N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test .....:	(See appended table T7)	P
T.8	Stress relief test .....:	(See appended table T8)	P
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....:		—
	Height (m) .....:		—
T.10	Glass fragmentation test .....:		N/A
T.11	Test for telescoping or rod antennas		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Torque value (Nm) .....:		—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen.....:		N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		N/A
V.1	Accessible parts of equipment		N/A
V.2	Accessible part criterion		N/A

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

4.1.2	TABLE: List of critical components				
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1]
Plastic material of enclosure	GOODALL ENGINEERING PLASTICS (SHENZHEN) CO LTD	1NSG00(a)	HB, 65° C, Min Thk: 0.75mm..	IEC 60695-11-10	UL
PCB of the EUT	Shenzhen Amission Electronic Technology Co Ltd	AM	V-0, 130°C	UL 94	UL

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) ..... :	240V~	--	--	--	—
	Ambient T_{min} (°C) ..... :	25	--	--	--	—
	Ambient T_{max} (°C) ..... :	28	--	--	--	—
	Tma (°C) ..... :	30	--	--	--	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
PCB surface		55	--	--	--	125
External plastic enclosure inside		42	--	--	--	43
External plastic enclosure outside		38	--	--	--	43
Supplementary information: Note 1: Tma should be considered as directed by appliable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)						

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

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Clause	Requirement + Test	Result - Remark	Verdict

T.2, T.3, T.4, T.5	TABLE: Steady force test				P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Complete EUT enclosure	Plastic material	Min. 1.5	100	5S	No energy source exceed class 1 can be accessed
Supplementary information:					

T.8	TABLE: Stress relief test				P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Enclosure	Plastic material	Min. 1.5	70	7	No energy source exceed class 1 can be accessed
Supplementary information:					

Annex：Technical Information

(1) Product Photos

A.2