[LAB LOGO]

Test Report No.: **xxxxxxxxxx**	*Page 1 of xx*
	Issue Date: *DD/MM/YYYY*

Manufacturer:	**Applicant's Name** Applicant's address	
Test item:	**Keyboard**	
Identification:	**(Model No.)**	*Serial No.:*
Receipt No.:		*Date of receipt:*
Testing laboratory and its address:	**Lab Name** **Lab address**	
Test specification:	**IS 13252 (Part 1): 2010 + A1: 2013 + A2 : 2015 /** **IEC 60950-1: 2005 + A1: 2009 + A2 : 2013**	
Test Result:	*The test item passed / failed the test specification(s).*	
Other Aspects: - This report consists of xx pages and the attachment as detailed in page no. xx		
This test report relates to the test sample submitted and list of documents attached.		

Tested by:	**Approved by / Authorized Signatory:**	**Issued by:**
(Name / Designation)	**(Name / Designation)**	**(Name / Designation)**
Date:	**Date:**	**Date:**

[LAB LOGO]

TEST REPORT **IS 13252 (Part 1): 2010 + A1: 2013+ A2: 2015 / IEC 60950-1: 2005 + A1: 2009 + A2: 2013 Information technology equipment – Safety – Part 1: General requirements "Keyboard"**	
Report Reference No.....:	xxxxxxxxxx
Date of issue.....:	(see cover page)
Total number of pages .....:	(see cover page)
Testing Laboratory.....:	Lab Name
Address .....:	Lab address
Manufacturer's name .....:	Applicant's Name
Address .....:	Applicant's address
Test specification:	
Standard .....:	**IS 13252 (Part 1): 2010 + A1: 2013+ A2:2015 / IEC 60950-1: 2005 + A1: 2009 +A2:2013**
Test procedure .....:	Compliance Report
Non-standard test method……..:	N/A
Test Report Form No.....:	BIS_IT/KB_IS13252_V1.0
Test Report Form(s) Originator .....:	Bureau of Indian Standards
Master TRF.....:	01/04/2020
Test item description .....:	**Keyboard**
Trade Mark .....:	
Model/Type reference .....:	
Ratings .....:	
Other Documents submitted.....:	Please refer to Table – List of Attachments at Page No. *xx*

Tested by:	**Approved by / Authorized Signatory:**	**Issued by:**
(Name / Designation)	**(Name / Designation)**	**(Name / Designation)**
Date:	**Date:**	**Date:**

Test Code	Description	Measurement/ testing	Total No. of tests	Total no. of applicable tests/ Req.	No. of tests/ Req. passed	Page No.
EL 2100	General Requirements	Components (Cl.1.5)	18			
EL 2101	General Requirements	Power interface (Cl.1.6)	05			
EL 2102	Marking Requirements	Marking & instructions(Cl.1.7)	39			
EL 2103	Electrical safety	Protection from electric shock and energy hazards (Cl.2.1)	14			
EL 2104	Electrical safety	SELV Circuits (Cl.2.2)	04			
EL 2105	Electrical safety	TNV Circuits (Cl.2.3)	12			
EL 2106	Electrical safety	Limited current circuits (Cl.2.4)	04			
EL 2107	Electrical safety	Limited Power sources (Cl.2.5)	07			
EL 2108	Electrical safety	Provisions for earthing and bonding (Cl.2.6)	19			
EL 2109	Electrical safety	Overcurrent and earth fault protection in primary circuits (Cl.2.7)	07			
EL 2110	Electrical safety	Safety Interlocks (Cl.2.8)	13			
EL 2111	Electrical safety	Electrical Insulation (Cl.2.9)	05			
EL 2112	Electrical safety	Clearances, Creepage distances and distances through insulation (Cl.2.10)	63			
EL 2113	Wiring	Wiring, connections and supply (Cl.3)	11			
EL 2114	Wiring	Connection to a main supply (Cl.3.2)	14			
EL 2115	Wiring	Wiring terminals for connection of external conductors (Cl.3.3)	09			
EL 2116	Wiring	Disconnection for the main supply (Cl.3.4)	12			
EL 2117	Wiring	Interconnection of equipment (Cl.3.5)	05			
EL 2118	Mechanical properties	Stability (Cl.4.1)	05			

EL 2119	Mechanical properties	Mechanical strength (Cl.4.2)	13			
EL 2120	Mechanical properties	Design and construction (Cl.4.3)	25			
EL 2121	Mechanical properties	Protection against hazardous moving parts (Cl.4.4)	14			
EL 2122	Thermal Properties	Thermal requirements (Cl.4.5)	06			
EL 2123	Mechanical properties	Openings in Enclosures (Cl.4.6)	18			
EL 2124	Fire Safety	Resistance to fire (Cl.4.7)	25			
EL 2125	Insulating properties	Electrical requirements and simulated abnormal conditions(Cl.5),5.1	20			
EL 2126	Insulating properties	Electric Strength (Cl.5.2)	03			
EL 2127	Insulating properties	Abnormal operating and fault conditions (Cl.5.3)	11			
EL 2128	Communicating connection	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment(Cl.6.1)	04			
EL 2129	Communicating connection	Protection of equipment users from overvoltages on telecommunication networks (Cl.6.2)	06			
EL 2130	Communicating connection	Protection of the telecommunication wiring system from overheating (Cl.6.3)	05			
EL 2131	Connection to cable distribution systems	Connection to cable distribution systems (Cl.7)	08			
EL 2132	Fire safety	Tests for resistance to heat and fire (Annex A)	20			
EL 2133	Insulating properties	Motor tests under abnormal conditions (Annex B)	19			
EL 2134	Electrical Safety	Transformers (Annex C)	03			
EL 2135	Insulating	Measuring Instruments	03			

	properties	For Touch-Current Tests (Annex D)				
EL 2136	Thermal Properties	Temperature Rise Of A Winding(Annex E)	01			
EL 2137	Electrical safety	Measurement Of Clearances And Creepage Distances(Annex F)	01			
EL 2138	Electrical safety	Alternative Method For Determining Minimum Clearances(Annex G)	17			
EL 2139	Radiation Safety	Ionizing Radiation(Annex H)	01			
EL 2140	Electrical Safety	Table of electrochemical potentials (Annex J)	01			
EL 2141	General Requirements	Thermal controls (Annex K)	07			
EL 2142	General Requirements	Normal load conditions for some types of electrical business equipment (Annex L)	08			
EL 2143	Electrical Safety	Criteria for telephone ringing signals (Annex M)	13			
EL 2144	Electrical safety	Impulse Test Generators(Annex N)	03			
EL 2145	General Requirements	Normative References(Annex P)	01			
EL 2146	General Requirements	Voltage dependent resistors (VDRs) (Annex Q)	03			
EL 2147	General Requirements	Examples Of Requirements For Quality Control Programmes(Annex R)	03			
EL 2148	General Requirements	Procedure For Impulse Testing (Annex S)	04			
EL 2149	Protection against Ingress of water	Guidance On Protection Against Ingress Of Water (Annex T)	01			
EL 2150	Wiring	Insulated Winding Wires For Use Without Interleaved Insulation (Annex U)	17			
EL 2151	Electrical Safety	Ac Power Distribution Systems(Annex V)	05			

EL 2152	Electrical Safety	Summation Of Touch Currents (Annex W)	08			
EL 2153	Electrical Safety	Maximum Heating Effect In Transformer Tests(Annex X)	03			
EL 2154	Radiation safety	Ultraviolet light conditioning test (Annex Y)	05			
EL 2155	Electrical Safety	Overvoltage Categories (Annex Z)	01			
EL 2156	Mechanical properties	Mandrel Test(Annex AA)	01			
EL 2158	Electrical Safety	Evaluation Of Integrated Circuit (IC) Current Limiters (Annex CC)	06			
EL 2159	Mechanical properties	Requirements For The Mounting Means Of Rack-Mounted Equipment (Annex DD)	04			
EL 2160	Electrical Safety	Household And Home/Office Document/Media Shredders (Annex EE)	06			

Certificate: It is certified that the above tests were performed and found to be passing/failing in the requirement tested.

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(Approving Authority)

Copy of marking plate:

Copy of marking label:

Table – List of Attachments

Attachment No.	Attachment Description	No. of pages in Attachment
Attachment – 1	Photo Document	xx

General remarks:

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

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

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 .....:

Date(s) of performance of tests .....:

Laboratory conditions ..... :

Ambient Temperature .....:

Ambient Humidity .....:

Test item particulars ..... :	
Sample received condition……..:	☐ Good ☐ Others
Equipment mobility..... :	☐ movable ☐ hand-held ☐ transportable ☐ stationary ☐ for building-in ☐ direct plug-in
Connection to the mains ..... :	☐ pluggable equipment [] type A [] type B ☐ permanent connection ☐ detachable power supply cord ☐ non-detachable power supply cord ☐ not directly connected to the mains
Operating condition..... :	☐ continuous ☐ rated operating / resting time:
Access location ..... :	☐ operator accessible ☐ restricted access location
Over voltage category (OVC) ..... :	☐ OVC I ☐ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Mains supply tolerance (%) or absolute mains supply values ..... :	-10%, +6% <OR> ±10%
Class of equipment ..... :	☐ Class I ☐ Class II ☐ Class III ☐ Not classified
Considered current rating of protective device as a part of the building installation (A) ..... :	16A (for India)
Pollution degree (PD) ..... :	☐ PD 1 ☐ PD 2 ☐ PD 3
IP protection class ..... :	IPXX or Not rated, indoor use only
Altitude during operation (m) ..... :	Up to 2000
Altitude of test laboratory (m) ..... :	< 1000
Mass of equipment (kg) ..... :	

Abbreviations that may be used throughout this test report:

PE/PB.....:	protective earth/protective bonding	Pri .....:	primary
CB .....:	circuit breaker	sec.....:	secondary
(SW)PS .....:	(switching) power supply	gnd.....:	ground
HV .....:	high voltage	I/O.....:	input/output
PCB.....:	printed circuit (wiring) board	ii.....:	installation instruction
TIW .....:	triple insulated wire	PSU.....:	Power Supply Unit

B/I.....: built-in application (compliance shall be guarantee in host equipment)

F/B/S/R : Functional/Basic/Supplementary/Reinforced Insulation

General product information:

1) Application details / Description of the product:

Max. specified ambient temperature (°C) ..... :	?? °C
Laser classification..... ..... :	< delete this line, if not applicable >

2) Differences between the models:

(N/A, one single model)

<OR>

< describe the constructional differences in such general terms, that the informed reader can still make a rough evaluation of their safety relevance >

Model No. tested with-in the family series. : ??

3) Options:

The equipment was tested without any optional accessory installed. Hence, this report does not cover parameters that are influenced by the installation of optional accessory that might affect safety in the meaning of this standard.

Tests relating to General Requirements

EL 2100 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
1.5	Components*	EL 2100-00		
1.5.1	General:	EL 2100-01		
	Components shall be complying with IEC 60950-1 or relevant component standard.			
	Components and subassemblies approved for IEC 62368-1 can be considered as complying with this standard			
1.5.2	Evaluation and testing of components	EL 2100-02		
1.5.3	Thermal controls	EL 2100-03		
1.5.4	Transformers	EL 2100-04		
1.5.5	Interconnecting cables*	EL 2100-05		
1.5.6	Capacitors bridging insulation *	EL 2100-06		
1.5.7	Resistors bridging insulation	EL 2100-07		
1.5.7.1	Resistors bridging functional, basic or supplementary insulation*	EL 2100-08		
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	EL 2100-09		
1.5.7.3	Resistors bridging double insulation or reinforced insulation between the a.c. mains supply and circuits connected to an antenna or coaxial cable	EL 2100-10		
1.5.8	Components in equipment for IT power distribution systems*	EL 2100-11		
1.5.9	Surge suppressors	EL 2100-12		
1.5.9.1	General*	EL 2100-13		
1.5.9.2	Protection of VDRs*	EL 2100-14		
1.5.9.3	Bridging of functional insulation by a VDR*	EL 2100-15		
1.5.9.4	Bridging of basic insulation by a VDR*	EL 2100-16		
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR*	EL 2100-17		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
Total No of applicable Tests =
No. of tests for which the sample passed=

Certificate: It is certified that the above tests were performed and found to be passing/failing in the requirement tested.

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(Approving Authority)

Tests relating to Electrical Safety

EL 2101 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
1.6	Power interface*	EL 2101-00		
1.6.1	AC power distribution systems*	EL 2101-01		
1.6.2	Input current	EL 2101-02		
1.6.3	Voltage limit of hand-held equipment*	EL 2101-03		
1.6.4	Neutral conductor *	EL 2101-04		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

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Total No of applicable Tests =
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Tests relating to Marking Requirements

EL 2102 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
1.7	Marking and instructions*	EL 2102-00		
1.7.1	Power rating and identification markings			
1.7.1.1	Power rating marking*	EL 2102-01		
	Rated voltage(s) or voltage ranges(s) (V)*.	EL 2102-02		
	Multiple mains supply connections*.	EL 2102-03		
	Symbol for nature of supply, for d.c. only*:	EL 2102-04		
	Rated frequency or rated frequency range (Hz) *:	EL 2102-05		
	Rated current (mA or A)*:	EL 2102-06		
1.7.1.2	Identification markings*	EL 2102-07		
	Manufacturer's name or trade-mark or identification mark *:	EL 2102-08		
	Model identification or type reference *:	EL 2102-09		
	Symbol for Class II equipment only* :	EL 2102-10		
	Other markings and symbols*:	EL 2102-11		
1.7.1.3	Use of graphical symbols*	EL 2102-12		
1.7.2	Safety instructions and marking*	EL 2102-13		
1.7.2.1	General	EL 2102-14		
1.7.2.2	Disconnect devices*	EL 2102-15		
1.7.2.3	Overcurrent protective devices*	EL 2102-16		
1.7.2.4	IT power distribution systems*	EL 2102-17		
1.7.2.5	Operator access with a tool*	EL 2102-18		
1.7.2.6	Ozone*	EL 2102-19		
1.7.3	Short duty cycles*	EL 2102-20		
1.7.4	Supply voltage adjustment*	EL 2102-21		
1.7.5	Power outlets on the equipment*	EL 2102-22		

Tests relating to Marking Requirements

EL 2102 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) Fuse(s) shall clearly and adequately marked with fuse number and rating*.	EL 2102-23		
1.7.7	Wiring terminals	EL 2102-24		
1.7.7.1	Protective earthing and bonding terminals*	EL 2102-25		
1.7.7.2	Terminals for a.c. mains supply conductors*	EL 2102-26		
1.7.7.3	Terminals for d.c. mains supply conductors*	EL 2102-27		
1.7.8	Controls and indicators	EL 2102-28		
1.7.8.1	Identification, location and marking *:	EL 2102-29		
1.7.8.2	Colours*	EL 2102-30		
1.7.8.3	Symbols according to IEC 60417*:	EL 2102-31		
1.7.8.4	Markings using figures* :	EL 2102-32		
1.7.9	Isolation of multiple power sources*	EL 2102-33		
1.7.10	Thermostats and other regulating devices*	EL 2102-34		
1.7.11	Durability	EL 2102-35		
1.7.12	Removable parts*	EL 2102-36		
1.7.13	Replaceable batteries*	EL 2102-37		
	Language(s)			
1.7.14	Equipment for restricted access locations*	EL 2102-38		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

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(Approving Authority)

Tests relating to Electrical Safety

EL 2103 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.1	Protection from electric shock and energy hazards*	EL 2103-00		
2.1.1	Protection in operator access areas*	EL 2103-01		
2.1.1.1	Access to energized parts	EL 2103-02		
	Test by inspection :			
	Test with test finger (Figure 2A)			
	Test with test pin (Figure 2B):			
	Test with test probe (Figure 2C)			
2.1.1.2	Battery compartments *	EL 2103-03		
2.1.1.3	Access to ELV wiring	EL 2103-04		
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)			
2.1.1.4	Access to hazardous voltage circuit wiring	EL 2103-05		
2.1.1.5	Energy hazards :	EL 2103-06		
2.1.1.6	Manual controls	EL 2103-07		
2.1.1.7	Discharge of capacitors in equipment			
	Measured voltage (V); time-constant (s):	EL 2103-08		
2.1.1.8	Energy hazards – d.c. mains supply			
	a) Capacitor connected to the d.c. mains supply :	EL 2103-09		
	b) Internal battery connected to the d.c. mains supply :	EL 2103-10		
2.1.1.9	Audio amplifiers to be tested according to IEC 60065, cl. 9.1.1.:	EL 2103-11		
2.1.2	Protection in service access areas	EL 2103-12		
2.1.3	Protection in restricted access locations	EL 2103-13		

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Total No of applicable Requirement =
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(Approving Authority)

Tests relating to Electrical Safety

EL 2104 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.2	SELV circuits*	EL 2104-00		
2.2.2	Voltages under normal conditions	EL 2104-01		
2.2.3	Voltages under fault conditions	EL 2104-02		
2.2.4	Connection of SELV circuits to other circuits* :	EL 2104-03		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
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.....
(Approving Authority)

Tests relating to Electrical Safety

EL 2105 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.3	TNV circuits*	EL 2105-00		
2.3.1	Type of TNV circuits: TNV-1 / TNV-2 / TNV-3	EL 2105-01		
	a) Limits of TNV-1:	EL 2105-02		
	b) Limits of TNV-2 or TNV-3: Continuous voltages, combination of AC and DC values, are such that : $\frac{U_{ac}}{71} + \frac{U_{dc}}{120} \leq 1$	EL 2105-03		
2.3.2	Separation from other circuits and from accessible parts*	EL 2105-04		
2.3.2.1	General Requirements	EL 2105-05		
2.3.2.2	Protection by basic insulation	EL 2105-06		
2.3.2.3	Protection by earthing	EL 2105-07		
2.3.2.4	Protection by other constructions :	EL 2105-08		
2.3.3	Separation from hazardous voltages	EL 2105-09		
2.3.4	Connection of TNV circuits to other circuits	EL 2105-10		
2.3.5	Test for operating voltages generated externally	EL 2105-11		

*- Total number of Requirements to be observed / inspected =
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(Approving Authority)

Tests relating to Electrical Safety

EL 2106 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.4	Limited current circuits *	EL 2106-00		
2.4.1	General requirements *	EL 2106-01		
2.4.2	Limit values	EL 2106-02		
2.4.3	Connection of limited current circuits to other circuits*	EL 2106-03		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
Total No of applicable Tests =
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.....
(Approving Authority)

Tests relating to Electrical Safety

EL 2107 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.5	Limited power sources *	EL 2107-00		
	a) Inherently limited output	EL 2107-01		
	b) Impedance limited output	EL 2107-02		
	c) Regulating network limited output under normal operating and single fault condition Use of integrated circuit (IC) current limiters	EL 2107-03	(See Annex CC)	
	d) Overcurrent protective device limited output	EL 2107-04		
	Max. output voltage (V), Max. output current (A), Max. apparent power (VA)	EL 2107-05		
	Current rating of overcurrent protective device (A)	EL 2107-06		

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Total No of applicable Requirement =
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(Approving Authority)

Tests relating to Electrical Safety

EL 2108 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.6	Provisions for earthing and bonding*	EL 2108-00		
2.6.1	Protective earthing	EL 2108-01		
2.6.2	Functional earthing : The Functional earthing either separated from hazardous voltages by double or reinforced insulation or by protectively earthed screen or conductive part separated by at least basic insulation, or safely connected to Protective Bonding Conductor.*	EL 2108-02		
	Use of symbol for functional earthing:*	EL 2108-03		
2.6.3	Protective earthing and protective bonding conductors*	EL 2108-04		
2.6.3.2	Size of protective earthing conductors	EL 2108-05		
	Rated current (A), cross-sectional area (mm2),			
2.6.3.3	Size of protective bonding conductors	EL 2108-06		
	Protective current Rating (A), cross-sectional area (mm2)			
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min):	EL 2108-07		
2.6.3.5	Colour of insulation*:	EL 2108-08		
2.6.4	Terminals			
2.6.4.2	Protective earthing and bonding terminals : Rated current(A), Type, Nominal thread diameter (mm)	EL 2108-09		
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors*	EL 2108-10		
2.6.5	Integrity of protective earthing*			
2.6.5.1	Interconnection of equipment*	EL 2108-11		
2.6.5.2	Components in protective earthing conductors and protective bonding conductors*	EL 2108-12		
2.6.5.3	Disconnection of protective earth*	EL 2108-13		

2.6.5.4	Parts that can be removed by an operator*	EL 2108-14		
2.6.5.5	Parts removed during servicing*	EL 2108-15		
2.6.5.6	Corrosion resistance*	EL 2108-16		
2.6.5.7	Screws for protective bonding*	EL 2108-17		
2.6.5.8	Reliance on telecommunication network or cable distribution system*	EL 2108-18		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

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(Approving Authority)

Tests relating to Electrical Safety

EL 2109 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.7	Overcurrent and earth fault protection in primary circuits*	EL 2109-00		
2.7.1	Basic requirements: Protection in primary circuits against overcurrents, short-circuits and earth faults shall be provided, either as an integral part of the equipment or as part of building installation.	EL 2109-01		
	If pluggable equipment Type B or permanently connected equipment relies on protective device external to the equipment for protection, the equipment installation Instructions shall so state and shall also specify the requirements for short-circuit protection or overcurrent protection or, where necessary, for both.			
2.7.2	Faults not simulated in 5.3.7* need not be fitted as an integral part of the equipment	EL 2109-02		
2.7.3	Short-circuit backup protection	EL 2109-03		
2.7.4	Number and location of protective devices :	EL 2109-04		
2.7.5	Protection by several devices*	EL 2109-05		
2.7.6	Warning to service personnel* :	EL 2109-06		

*- Total number of Requirements to be observed / inspected =
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No of Requirements for which the sample passed=

Total number of tests to be conducted =
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.....
(Approving Authority)

Tests relating to Electrical Safety

EL 2110 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.8	Safety Interlocks*	EL 2110-00		
2.8.1	General principles*	EL 2110-01		
2.8.2	Protection requirements	EL 2110-02		
2.8.3	Inadvertent reactivation	EL 2110-03		
2.8.4	Fail-safe operation	EL 2110-04		
2.8.5	Moving parts	EL 2110-05		
2.8.6	Overriding*	EL 2110-06		
2.8.7	Switches, relays and their related circuits	EL 2110-07		
2.8.7.1	Separation distances for contact gaps and their related circuits	EL 2110-08		
2.8.7.2	Overload test	EL 2110-09		
2.8.7.3	Endurance test	EL 2110-10		
2.8.7.4	Electric strength test	EL 2110-11		
2.8.8	Mechanical actuators	EL 2110-12		

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(Approving Authority)

Tests relating to Electrical Safety

EL 2111 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.9	Electrical insulation*	EL 2111-00		
2.9.1	Properties of insulating materials*	EL 2111-01		
2.9.2	Humidity conditioning	EL 2111-02		
	Relative Humidity : 93 ±3 %, Temperature: t at 40 ± 2°C Duration : 120 hours			
2.9.3	Grade of insulation*	EL 2111-03		
2.9.4	Separation from hazardous voltages*	EL 2111-04		
	Method(s) used			

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Tests relating to Electrical Safety

EL 2112 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.10	Clearances, creepage distances and distances through Insulation*	EL 2112-00		
2.10.1.1	Frequency *	EL 2112-01		
2.10.1.2	Pollution degrees*	EL 2112-02		
2.10.1.3	Reduced values for functional insulation	EL 2112-03		
2.10.1.4	Intervening unconnected conductive parts	EL 2112-04		
2.10.1.5	Insulation with varying dimensions	EL 2112-05		
2.10.1.6	Special separation requirements	EL 2112-06		
2.10.1.7	Insulation in circuits generating starting pulses	EL 2112-07		
2.10.2	Determination of working voltage	EL 2112-08		
2.10.2.2	RMS working voltage	EL 2112-09		
2.10.2.3	Peak working voltage	EL 2112-10		
2.10.3	Clearances	EL 2112-11		
2.10.3.1	General	EL 2112-12		
2.10.3.2	Mains transient voltages*			
	a) AC mains supply * :	EL 2112-13		
	b) Earthed d.c. mains supplies*	EL 2112-14		
	c) Unearthed d.c. mains supplies* :	EL 2112-15		
	d) Battery operation* :	EL 2112-16		
2.10.3.3	Clearances in primary circuits	EL 2112-17		
2.10.3.4	Clearances in secondary circuits	EL 2112-18		
2.10.3.5	Clearances in circuits having starting pulses	EL 2112-19		
2.10.3.6	Transients from a.c. mains supply :	EL 2112-20		
2.10.3.7	Transients from d.c. mains supply :	EL 2112-21		
2.10.3.8	Transients from telecommunication networks and cable distribution systems	EL 2112-22		
2.10.3.9	Measurement of transient voltages			
	a) Transients from a mains supply	EL 2112-23		
	For an a.c. mains supply			

	For a d.c. mains supply			
	b) Transients from a telecommunication network	EL 2112-24		
2.10.4	Creepage distances*	EL 2112-25		
2.10.4.1	General	EL 2112-26		
2.10.4.2	Material group and comparative tracking index : CTI tests*	EL 2112-27		
2.10.4.3	Minimum creepage distances	EL 2112-28		
2.10.5	Solid insulation	EL 2112-29		
2.10.5.1	General	EL 2112-30		
2.10.5.2	Distances through insulation	EL 2112-31		
2.10.5.3	Insulating compound as solid insulation	EL 2112-32		
2.10.5.4	Semiconductor devices	EL 2112-33		
2.10.5.5.	Cemented joints	EL 2112-34		
2.10.5.6	Thin sheet material – General	EL 2112-35		
2.10.5.7	Separable thin sheet material	EL 2112-36		
2.10.5.8	Non-separable thin sheet material	EL 2112-37		
2.10.5.9	Thin sheet material – standard test procedure	EL 2112-38		
	Electric strength test as per Cl.5.2.2			
2.10.5.10	Thin sheet material – alternative test procedure	EL 2112-39		
	Electric strength test as per Cl.5.2.2			
2.10.5.11	Insulation in wound components	EL 2112-40		
2.10.5.12	Wire in wound components			
	If Peak Working voltage >71 V			
	a) Basic insulation not under stress	EL 2112-41		
	b) Basic, supplementary, reinforced insulation	EL 2112-42		
	c) Compliance with Annex U	EL 2112-43		
	d) Where two winding wires in contact inside wound component; angle between 45° and 90°	EL 2112-44		
2.10.5.13	Wire with solvent-based enamel in wound components			
	a) Electric strength test (Type test as per Cl.5.2.2)	EL 2112-45		
	b) Electric Strength test (Routine test as per Cl.5.2.2)	EL 2112-46		

2.10.5.14	Additional insulation in wound components			
	If Peak Working Voltage >71V			
	a) Basic insulation not under stress	EL 2112-47		
	b) Supplementary, reinforced insulation	EL 2112-48		
2.10.6	Construction of printed boards*			
2.10.6.1	Uncoated printed boards	EL 2112-49		
2.10.6.2	Coated printed boards	EL 2112-50		
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	EL 2112-51		
2.10.6.4	Insulation between conductors on different surfaces of a printed board*			
	a) Minimum Thickness of insulation: 0.4mm or	EL 2112-52		
	b) Confirm with one of the specification and pass the relevant tests as per Table 2R	EL 2112-53		
2.10.7	Component external terminations	EL 2112-54		
2.10.8	Tests on coated printed boards and coated components			
2.10.8.1	Sample preparation and preliminary inspection*	EL 2112-55		
2.10.8.2	Thermal conditioning	EL 2112-56		
2.10.8.3	Electric strength test	EL 2112-57		
2.10.8.4	Abrasion resistance test	EL 2112-58		
2.10.9	Thermal cycling	EL 2112-59		
2.10.10	Test for Pollution Degree 1 environment and insulating compound	EL 2112-60		
2.10.11	Tests for semiconductor devices and cemented joints	EL 2112-61		
2.10.12	Enclosed and sealed parts	EL 2112-62		

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Tests relating to Wiring

EL 2113 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
3.0	Wiring, connections and supply*	EL 2113-00		
3.1.1	Current rating and overcurrent protection	EL 2113-01		
3.1.2	Protection against mechanical damage*	EL 2113-02		
3.1.3	Securing of internal wiring*	EL 2113-03		
3.1.4	Insulation of conductors	EL 2113-04		
3.1.5	Beads and ceramic insulators	EL 2113-05		
3.1.6	Screws for electrical contact pressure*	EL 2113-06		
3.1.7	Insulating materials in electrical connections*	EL 2113-07		
3.1.8	Self-tapping and spaced thread screws*	EL 2113-08		
3.1.9	Termination of conductors : 10 N pull test	EL 2113-09		
3.1.10	Sleeving on wiring*	EL 2113-10		

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Tests relating to Wiring

EL 2114 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
3.2	Connection to a mains supply*	EL 2114-00		
3.2.1	Means of connection			
3.2.1.1	Connection to an a.c. mains supply*	EL 2114-01		
3.2.1.2	Connection to a d.c. mains supply*	EL 2114-02		
3.2.2	Multiple supply connections	EL 2114-03		
3.2.3	Permanently connected equipment	EL 2114-04		
3.2.4	Appliance inlets: Are so Located that parts at hazardous voltage are not accessible during insertion or removal of the connector, connector can be inserted without difficulty and after insertion of the connector, the equipment is not supported by the connector for any position of normal use on a flat surface (appliance inlets complying with IEC 60309 or IEC 60320 considered to comply with this requirement.	EL 2114-05		
3.2.5	Power supply cords			
3.2.5.1	AC power supply cords*	EL 2114-06		
	Rated current (A), cross-sectional area (mm²), AWG			
3.2.5.2	DC power supply cords*	EL 2114-07		
3.2.6	Cord anchorages and strain relief			
	Mass of the equipment: Pull Force (N):	EL 2114-08		
	b) Longitudinal displacement: 2 mm (Max)	EL 2114-09		
3.2.7	Protection against mechanical damage	EL 2114-10		
3.2.8	Cord guards			
	a) Diameter or minor dimension D (mm) : Test mass (g) :	EL 2114-11		

	b) Radius of curvature of cord : 1.5 D (Min)	EL 2114-12		
3.2.9	Supply wiring space	EL 2114-13		

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Tests relating to Wiring

EL 2115 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
3.3	Wiring terminals for connection of external conductors*	EL 2115-00		
3.3.1	Wiring terminals*	EL 2115-01		
3.3.2	Connection of non-detachable power supply cords	EL 2115-02		
3.3.3	Screw terminals*	EL 2115-03		
3.3.4	Conductor sizes to be connected	EL 2115-04		
	Rated current (A), cord/cable type, cross-sectional area (mm2)			
3.3.5	Wiring terminal sizes	EL 2115-05		
	Rated current (A), type, nominal thread diameter (mm)			
3.3.6	Wiring terminal design	EL 2115-06		
3.3.7	Grouping of wiring terminals*	EL 2115-07		
3.3.8	Stranded wire	EL 2115-08		

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Tests relating to Wiring

EL 2116 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
3.4	Disconnection from the mains supply*	EL 2116-00		
3.4.1	General Requirement A disconnect device or devices shall be provided to disconnect the equipment from the mains supply for servicing.	EL 2116-01		
3.4.2	Disconnect devices*	EL 2116-02		
3.4.3	Permanently connected equipment*	EL 2116-03		
3.4.4	Parts which remain energized*	EL 2116-04		
3.4.5	Switches in flexible cords*	EL 2116-05		
3.4.6	Number of poles - single-phase and d.c. equipment*	EL 2116-06		
3.4.7	Number of poles - three-phase equipment*	EL 2116-07		
3.4.8	Switches as disconnect devices*	EL 2116-08		
3.4.9	Plugs as disconnect devices*	EL 2116-09		
3.4.10	Interconnected equipment*	EL 2116-10		
3.4.11	Multiple power sources*	EL 2116-11		

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Tests relating to Wiring

EL 2117 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
3.5	Interconnection of equipment*	EL 2117-00		
3.5.1	General requirements*	EL 2117-01		
3.5.2	Types of interconnection circuits*	EL 2117-02		
3.5.3	ELV circuits as interconnection circuits *	EL 2117-03		
3.5.4	Data ports for additional equipment	EL 2117-04		

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Tests relating to Mechanical Properties **EL 2118 – V1.0**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4	PHYSICAL REQUIREMENTS*	EL 2118-00		
4.1	Stability	EL 2118-01		
	a) A unit having a mass of 7 kg or more shall not fall over when tilted to an angle of 10° from its normal upright position. Alternatively, the unit is placed in its intended position of use on a plane, inclined at an angle of 10° to the horizontal, and then rotated slowly through an angle of 360° about its normal vertical axis.	EL 2118-02		
	b) A floor-standing unit having a mass of 25 kg or more shall not fall over when a force equal to 20 % of the weight of the unit, but not more than 250 N, is applied in any direction except upwards, at a height not exceeding 2 m from the floor.	EL 2118-03		
	c) A floor-standing unit shall not fall over when a constant downward force of 800 N is applied at the point of maximum moment to any horizontal surface of at least 125 mm by at least 200 mm, at a height up to 1 m from the floor.	EL 2118-04		

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Tests relating to Mechanical Properties

EL 2119 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4.2	Mechanical Strength	EL 2119-00		
4.2.1	General	EL 2119-01		
4.2.2	Steady force test, 10 N	EL 2119-02		
4.2.3	Steady force test, 30 N	EL 2119-03		
4.2.4	Steady force test, 250 N	EL 2119-04		
4.2.5	Impact test	EL 2119-05		
	a) Fall test as per Fig. 4A	EL 2119-06		
	b) Swing test as per Fig. 4A	EL 2119-07		
4.2.6	Drop test; height (mm) :	EL 2119-08		
4.2.7	Stress relief test	EL 2119-09		
4.2.8	Cathode Ray Tubes	EL 2119-10		
4.2.9	High Pressure Lamps*	EL 2119-11		
4.2.10	Wall or ceiling mounted equipment; force(N)	EL 2119-12		

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Tests relating to Mechanical Properties

EL 2120 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4.3	Design and Construction*	EL 2120-00		
4.3.1	Edges and corners*	EL 2120-01		
4.3.2	Handles and manual controls; force (N)	EL 2120-02		
4.3.3	Adjustable controls	EL 2120-03		
4.3.4	Securing of parts	EL 2120-04		
4.3.5	Connections by Plugs and Sockets*	EL 2120-05		
4.3.6	Direct plug-in equipment	EL 2120-06		
	Torque	EL 2120-07		
	Compliance with the relevant mains plug standard	EL 2120-08		
4.3.7	Heating elements in earthed equipment*	EL 2120-09		
4.3.8	Batteries Portable secondary sealed cells and batteries (other than button) containing alkaline or other non-acid electrolyte shall comply with IEC 62133			
	a) Overcharging of a rechargeable battery	EL 2120-10		
	b) Unintentional charging of a non-rechargeable battery	EL 2120-11		
	c) Reverse charging of a rechargeable battery	EL 2120-12		
	d) Excessive discharging rate for any battery	EL 2120-13		
	e) Electric strength as per Cl.5.3.9.2	EL 2120-14		
4.3.9	Oil & grease*	EL 2120-15		
4.3.10	Dust, powders, liquids and gases	EL 2120-16		
4.3.11	Containers for liquids or gases	EL 2120-17		
4.3.12	Flammable liquids	EL 2120-18		
4.3.13	Radiation			
4.3.13.2	Ionizing radiation	EL 2120-19		

4.3.13.3	Effect of ultraviolet (UV) radiation on materials	EL 2120-20		
4.3.13.4	Human exposure to ultraviolet (UV) radiation	EL 2120-21		
4.3.13.5	Lasers (including laser diodes) and LED's:			
4.3.13.5.1	Lasers (including laser diodes) For laser see IEC 60825-1, respective part as applicable.	EL 2120-22		
	Laser class			
4.3.13.5.2	Light emitting diodes (LED's)	EL 2120-23		
4.3.13.6	Other types*	EL 2120-24		

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Tests relating to Mechanical Properties

EL 2121 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4.4	Protection against hazardous moving parts	EL 2121-00		
4.4.1	General	EL 2121-01		
4.4.2	Protection in operator access areas	EL 2121-02		
4.4.3	Protection in restricted access locations *	EL 2121-03		
4.4.4	Protection in service access areas*	EL 2121-04		
4.4.5	Protection against moving fan blades	EL 2121-05		
4.4.5.1	General*	EL 2121-06	m = r = N = K =	
	Not considered likely to cause pain or injury. a)……..…..:	EL 2121-07	$\frac{r/\text{min}}{15000} + \frac{K\ \text{factor}}{2\,400}$ =	
	Is considered likely to cause pain, not injury. b)	EL 2121-08	$\frac{r/\text{min}}{22000} + \frac{K\ \text{factor}}{3\,600}$ =	
	Considered likely to cause injury. c)……..……:	EL 2121-09		
4.4.5.2	Protection for users*	EL 2121-10		
	Use of symbol or warning*	EL 2121-11		
4.4.5.3	Protection for service persons*	EL 2121-12		
	Use of symbol or warning *	EL 2121-13		

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Tests relating to Thermal Properties

EL 2122 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4.5	Thermal Requirements*	EL 2122-00		
4.5.1	General	EL 2122-01		
4.5.2	Temperature tests	EL 2122-02		
4.5.3	Temperature limits for materials*	EL 2122-03		
4.5.4	Touch temperature limits*	EL 2122-04		
4.5.5	Resistance to abnormal heat	EL 2122-05		

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Tests relating to Mechanical Properties

EL 2123 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4.6	Openings in enclosures*	EL 2123-00		
4.6.1	Top and side openings	EL 2123-01		
	Dimensions (mm) :			
4.6.2	Bottoms of fire enclosures :	EL 2123-02		
	Construction of the bottom, dimensions (mm) :			
4.6.3	Doors or covers in fire enclosures*	EL 2123-03		
4.6.4	Openings in transportable equipment	EL 2123-04		
4.6.4.1	Constructional design measures	EL 2123-05		
	Dimensions (mm)			
4.6.4.2	Evaluation measures for larger openings	EL 2123-06		
4.6.4.3	Use of metallized parts	EL 2123-07		
4.6.5	Adhesives for constructional purposes: Compliance is checked by examination of the construction and of the available data. If such data is not available, compliance is checked by the following tests.	EL 2123-08		
	a)Temperature Conditioning at : 100 °C ± 2 °C for one week; or 90 °C ± 2 °C for three weeks; or 82 °C ± 2 °C for eight weeks.	EL 2123-09		
	After temperature conditioning b) Leave the sample between 20°C to 30°C for 1 hour	EL 2123-10		
	c) Place the sample at - 40°C±2°C for 4 hours	EL 2123-11		
	d) Remove and allow the sample to come to any convenient temperature between 20 °C and 30 °C for 8 h;	EL 2123-12		
	e) Place the sample in a cabinet at 91 % to 95 % relative humidity for 72 h;	EL 2123-13		

	f) Remove the sample and leave it at any convenient temperature between 20 °C and 30 °C for 1 h;	EL 2123-14		
	g) Place the sample in an oven at the temperature used for the temperature conditioning for 4 h;	EL 2123-15		
	h) Remove the sample and allow it to reach any convenient temperature between 20 °C; and 30 °C for 8 h.	EL 2123-16		
	i) The sample is then immediately subjected to the tests of Cl.4.2 as applicable.	EL 2123-17		

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Tests relating to Fire Safety

EL 2124 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4.7	Resistance to fire*	EL 2124-00		
4.7.1	Reducing the risk of ignition and spread of flame			
	Method 1, selection and application of components wiring and materials OR	EL 2124-01		
	Method 2, application of all of simulated fault condition tests	EL 2124-02		
4.7.2	Conditions for a fire enclosure*			
4.7.2.1	Parts requiring a fire enclosure*	EL 2124-03		
4.7.2.2	Parts not requiring a fire enclosure	EL 2124-04		
4.7.3	Materials*	EL 2124-05		
4.7.3.1	General*	EL 2124-06		
	a)Class of material used*	EL 2124-07		
	b) Where HB40 CLASS MATERIAL, HB75 CLASS MATERIAL or HBF CLASS FOAMED MATERIAL, is required, material passing/failing the glow-wire test at 550 °C according to IEC 60695-2-11 is acceptable as an alternative.	EL 2124-08		
	c) Where it is not practical to protect components against overheating under fault conditions, the components shall be mounted on V-1 CLASS MATERIAL. Additionally, such components shall be separated from material of a class lower than V-1 CLASS MATERIAL by at least 13 mm of air, or by a solid barrier of V-1 CLASS MATERIAL.	EL 2124-09		
4.7.3.2	Materials for fire enclosures			

	a) For MOVABLE EQUIPMENT having a total mass not exceeding 18 kg, the material of a FIRE ENCLOSURE, in the thinnest significant wall thickness used, shall be of V-1 CLASS MATERIAL or shall pass the test of Clause A.2.	EL 2124-10		
	b) For MOVABLE EQUIPMENT having a total mass exceeding 18 kg and for all STATIONARY EQUIPMENT, the material of a FIRE ENCLOSURE, in the thinnest significant wall thickness used, shall be of 5VB CLASS MATERIAL or shall pass the test of Clause A.1.	EL 2124-11		
	c) Materials for components that fill an opening in a FIRE ENCLOSURE, and that are intended to be mounted in this opening shall : be of V-1 CLASS MATERIAL; or pass the tests of Clause A.2; or comply with the flammability requirements of the relevant IEC component standard	EL 2124-12		
	d) Plastic materials of a FIRE ENCLOSURE shall be located more than 13 mm through air from arcing parts such as unenclosed commutators and unenclosed switch contacts.	EL 2124-13		
	e)Plastic materials of a FIRE ENCLOSURE located less than 13mm through air from non-arcing parts which, under any condition of normal or abnormal operation,could attain a temperature sufficient to ignite the material, shall be capable of passing/failing the test of IEC 60695-2-20. The average time to ignition of the samples shall be not less than 15sec. If the sample melts through without igniting, the time at which this occurs is not considered to be the time to ignition.	EL 2124-14		

4.7.3.3	Materials for components and other parts outside fire enclosures *			
	a) Materials shall be of : − HB75 CLASS MATERIAL if the thinnest significant thickness of this material is < 3 mm, or − HB40 CLASS MATERIAL if the thinnest significant thickness of this material is ≥ 3 mm, or − HBF CLASS FOAMED MATERIAL.*	EL 2124-15		
	b) Connectors shall comply with one of the following: − be made of V-2 CLASS MATERIAL; or − pass the tests of Clause A.2; or − comply with the flammability requirements of the relevant IEC component standard; or − be mounted on V-1 CLASS MATERIAL and be of a small size; or − be located in a SECONDARY CIRCUIT supplied by a power source that is limited to a maximum of 15 VA (see 1.4.11) under normal operating conditions and after a single fault in the equipment (see 1.4.14).	EL 2124-16		
4.7.3.4	Materials for components and other parts inside fire enclosures			

	a) Inside FIRE ENCLOSURES, materials for components and other parts shall comply with one of the following: – be of V-2 CLASS MATERIAL or HF-2 CLASS FOAMED MATERIAL; or – pass the flammability test described in Clause A.2; or – meet the flammability requirements of a relevant IEC component standard that includes such requirements.	EL 2124-17		
	Requirements for voltage dependent resistors (VDR's) are in Annex Q.*	EL 2124-18		
4.7.3.5	Materials for air filter assemblies : Air filter assemblies shall be constructed of V-2 CLASS MATERIAL, or HF-2 CLASS FOAMED MATERIAL.	EL 2124-19		
4.7.3.6	Materials used in high-voltage components			
	a) High-voltage components operating at peak-to-peak voltages exceeding 4 kV shall either be of V-2 CLASS MATERIAL, or HF-2 CLASS FOAMED MATERIAL, or comply with 14.4 of IEC 60065 or pass the needle flame test according to IEC 60695-11-5.	EL 2124-20		
	b) Compliance is checked by inspection of the equipment and material data sheets and, if necessary, by – the tests for V-2 CLASS MATERIAL or HF-2 CLASS FOAMED MATERIAL; or – the test described in 14.4 of IEC 60065; or – the needle flame test according to IEC 60695-11-5.	EL 2124-21		

	c) In addition to above, the following details apply, referring to clauses of IEC 60695-11-5: Clause 7 - Severities	EL 2124-22		
	Clause 8 - Conditioning	EL 2124-23		
	Clause 11 - Evaluation of test results	EL 2124-24		

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(Approving Authority)

Tests relating to Insulating Properties

EL 2125 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
5.0	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS*	EL 2125-00		
5.1	Touch current and protective conductor current*	EL 2125-01		
5.1.2	Configuration of equipment under test (EUT)*	EL 2125-02		
5.1.2.1	Single connection to an a.c. mains supply*	EL 2125-03		
5.1.2.2	Redundant multiple connections to an a.c. mains supply*	EL 2125-04		
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	EL 2125-05		
5.1.3	Test circuit	EL 2125-06		
5.1.4	Application of measuring instrument	EL 2125-07		
5.1.5	Test procedure	EL 2125-08		
5.1.6	Test measurements			
	a) r.m.s value of voltage, U2 measured using the instrument as per Fig. D.1 or r.m.s value of current measured using the instrument as per Fig. D.2 Alternatively, peak value of voltage, U2, is measured using the measuring instrument described in Clause D.1	EL 2125-09		
	b) Measured touch current (mA):	EL 2125-10		
	c) Calculated value of TOUCH CURRENT (mA) = U2 / 500	EL 2125-11		
	d) Measured protective conductor current(mA)	EL 2125-12		
	e) Max. protective conductor current =5% of Input current	EL 2125-13		
5.1.7	Equipment with touch current exceeding 3.5 mA	EL 2125-14		
5.1.7.1	General	EL 2125-15		

5.1.7.2	Simultaneous multiple connections to the supply	EL 2125-16		
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	EL 2125-17		
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system	EL 2125-18		
	Supply voltage (V)			
	Measured touch current (mA)			
	Max. allowed touch current (mA)			
5.1.8.2	Summation of touch currents from telecommunication networks	EL 2125-19		
	a) EUT with earthed telecommunication ports :			
	b) EUT whose telecommunication ports have no reference to protective earth			

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Tests relating to Insulating Properties

EL 2126 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
5.2	Electric strength*	EL 2126-00		
5.2.1	General*	EL 2126-01		
5.2.2	Test procedure			
	a) The test voltages for electric strength for the appropriate grade of insulation [FUNCTIONAL INSULATION if required by 5.3.4 b), BASIC INSULATION, SUPPLEMENTARY INSULATION or REINFORCED INSULATION] are as specified in either: – Table 5B using the PEAK WORKING VOLTAGE (U), as determined in 2.10.2; or – Table 5C using the REQUIRED WITHSTAND VOLTAGE, as determined in G.4.	EL 2126-02		

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Tests relating to Insulating Properties

EL 2127 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
5.3	Abnormal operating and fault conditions	EL 2127-00		
5.3.1	Protection against overload and abnormal operation	EL 2127-01		
5.3.2	Motors	EL 2127-02		
5.3.3	Transformers	EL 2127-03		
5.3.4	Functional insulation:	EL 2127-04		
5.3.5	Electromechanical components	EL 2127-05		
5.3.6	Audio amplifiers in ITE :	EL 2127-06		
5.3.7	Simulation of faults	EL 2127-07		
5.3.8	Unattended equipment	EL 2127-08		
5.3.9	Compliance criteria for abnormal operating and fault conditions*			
5.3.9.1	During the tests	EL 2127-09		
5.3.9.2	After the tests	EL 2127-10		

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Tests relating to Communicating Connection

EL 2128 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment	EL 2128-00		
6.1.1	Protection from hazardous voltages	EL 2128-01		
6.1.2	Separation of the telecommunication network from earth*			

6.1.2.1	Requirements: - Surge suppressors that bridge the insulation shall have a minimum rated operating voltage U_{op} of $U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ Where U_{peak} is 360V or 180V ΔU_{sp} is the maximum increase of the rated operating voltage due to variations in component production(If not specified by the manufacturer, shall be taken as 10% of the rated operating voltage of the component) ΔU_{sa} is the maximum increase of the rated operating voltage due to the component ageing over the expected life of the equipment(If not specified by the manufacturer, shall be taken as 10% of the rated operating voltage of the component) -Insulation is subjected to electric strength test according to 5.2.2. The a.c test voltage is 1.5kV or 1.0kV - Components bridging the insulation that are left in place during electric strength testing shall not be damaged. There shall be no breakdown of insulation during electric strength testing.	EL 2128-02		
6.1.2.2	Exclusions	EL 2128-03		

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Tests relating to Communicating Connection

EL 2129 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
6.2	Protection of equipment users from overvoltages on telecommunication networks*	EL 2129-00		
6.2.1	Separation requirements	EL 2129-01		
6.2.2	Electric strength test procedure	EL 2129-02		
6.2.2.1	Impulse test	EL 2129-03		
6.2.2.2	Steady-state test	EL 2129-04		
6.2.2.3	Compliance criteria	EL 2129-05		

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Tests relating to Communicating Connection

EL 2130 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
6.3	Protection of the telecommunication wiring system from overheating	EL 2130-00		
	a)If current limiting is due to the inherent impedance of the power source, the output current into any resistive load, including a short-circuit, is measured. The current limit shall not be exceeded after 60 s of test. Max. output current (A) :	EL 2130-01		
	b) If current limiting is provided by an overcurrent protective device having a specified time/current characteristic: – the time/current characteristic shall show that a current equal to 110 % of the current limit will be interrupted within 60 min; and	EL 2130-02		
	c) the output current into any resistive load, including a short-circuit, with the overcurrent protective device bypassed, measured after 60 s of test, shall not exceed 1 000/U, where U is the output voltage measured in accordance with 1.4.5 with all load circuits disconnected.	EL 2130-03		

	d) If current limiting is provided by an overcurrent protective device that does not have a specified time/current characteristic: – the output current into any resistive load, including a short-circuit, shall not exceed the current limit after 60 s of test; and – the output current into any resistive load, including a short-circuit, with the overcurrent protective device bypassed, measured after 60 s of test, shall not exceed 1 000/U, where U is the output voltage measured in accordance with 1.4.5 with all load circuits disconnected.	EL 2130-04		

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Tests relating to Connection to cable distribution system

EL 2131 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
7	Connection to cable distribution systems*	EL 2131-00		
7.1	General requirements*	EL 2131-01		
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment	EL 2131-02		
7.3	Protection of equipment users from overvoltages on the cable distribution system	EL 2131-03		
7.4	Insulation between primary circuits and cable distribution systems	EL 2131-04		
7.4.1	General	EL 2131-05		
7.4.2	Voltage surge test	EL 2131-06		
7.4.3	Impulse test	EL 2131-07		

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Tests relating to Fire Safety

EL 2132 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE	EL 2132-00		
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)	EL 2132-01		
A.1.1	Samples:	EL 2132-02		
	Wall thickness (mm):			
A.1.2	Conditioning of samples; temperature (°C) :	EL 2132-03		
A.1.3	Mounting of samples :	EL 2132-04		
A.1.4	Test flame (see IEC 60695-11-3)	EL 2132-05		
	Flame A, B, C or D :			
A.1.5	Test procedure	EL 2132-06		
A.1.6	Compliance criteria	EL 2132-07		
	Sample 1 burning time (s):			
	Sample 2 burning time (s):			
	Sample 3 burning time (s):			
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)	EL 2132-08		
A.2.1	Samples, material:	EL 2132-09		
	Wall thickness (mm):			
A.2.2	Conditioning of samples; temperature (°C) :	EL 2132-10		
A.2.3	Mounting of samples :	EL 2132-11		
A.2.4	Test flame (see IEC 60695-11-4)	EL 2132-12		
	Flame A, B or C :			
A.2.5	Test procedure	EL 2132-13		

Tests relating to Fire Safety

EL 2132 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
A.2.6	Compliance criteria	EL 2132-14		
	Sample 1 burning time (s):			
	Sample 2 burning time (s):			
	Sample 3 burning time (s):			
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9	EL 2132-15		
	Sample 1 burning time (s):			
	Sample 2 burning time (s):			
	Sample 3 burning time (s):			
A.3	Hot flaming oil test (see 4.6.2)	EL 2132-16		
A.3.1	Mounting of samples	EL 2132-17		
A.3.2	Test procedure	EL 2132-18		
A.3.3	Compliance criterion	EL 2132-19		

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Tests relating to Insulating Properties

EL 2133 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)	EL 2133-00		
B.1	General requirements	EL 2133-01		
	Position :			
	Manufacturer :			
	Type :			
	Rated values :			
B.2	Test conditions	EL 2133-02		
B.3	Maximum temperatures	EL 2133-03		
B.4	Running overload test	EL 2133-04		
B.5	Locked-rotor overload test	EL 2133-05		
	Test duration (days):			
	Electric strength test: test voltage (V) :			
B.6	Running overload test for d.c. motors in secondary circuits	EL 2133-06		
B.6.1	General	EL 2133-07		
B.6.2	Test procedure	EL 2133-08		
B.6.3	Alternative test procedure	EL 2133-09		
B.6.4	Electric strength test; test voltage (V):	EL 2133-10		
B.7	Locked-rotor overload test for d.c. motors in secondary circuits	EL 2133-11		
B.7.1	General	EL 2133-12		
B.7.2	Test procedure	EL 2133-13		
B.7.3	Alternative test procedure	EL 2133-14		
B.7.4	Electric strength test; test voltage (V) :	EL 2133-15		
B.8	Test for motors with capacitors	EL 2133-16		
B.9	Test for three-phase motors	EL 2133-17		
B.10	Test for series motors	EL 2133-18		
	Operating voltage (V) :			

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Tests relating to Electrical Safety

EL 2134 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)*	EL 2134-00		
	Position :			
	Manufacturer :			
	Type :			
	Rated values :			
	Method of protection:			
C.1	Overload test	EL 2134-01		
C.2	Insulation	EL 2134-02		
	Protection from displacement of windings:			

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Tests relating to Insulating Properties

EL 2135 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)	EL 2135-00		
D.1	Measuring instrument	EL 2135-01		
D.2	Alternative measuring instrument	EL 2135-02		

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Tests relating to Thermal Properties

EL 2136– V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)	EL2136-00		

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Tests relating to Electrical Safety

EL 2137 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)	EL2137-00		

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Tests relating to Electrical safety

EL 2138 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES	EL 2138-00		
G.1	Clearances	EL 2138-01		
G.1.1	General	EL 2138-02		
G.1.2	Summary of the procedure for determining minimum clearances	EL 2138-03		
G.2	Determination of mains transient voltage (V)	EL 2138-04		
G.2.1	AC Mains supply	EL 2138-05		
G.2.2	Earthed d.c. mains supplies	EL 2138-06		
G.2.3	Unearthed d.c. mains supplies	EL 2138-07		
G.2.4	Battery operation	EL 2138-08		
G.3	Determination of telecommunication network transient voltage (V)	EL 2138-09		
G.4	Determination of required withstand voltage (V)	EL 2138-10		
G.4.1	Mains transients and internal repetitive peaks	EL 2138-11		
G.4.2	Transients from telecommunication networks:	EL 2138-12		
G.4.3	Combination of transients	EL 2138-13		
G.4.4	Transients from cable distribution systems	EL 2138-14		
G.5	Measurement of transient voltages (V)	EL 2138-15		
	a) Transients from a mains supply			
	For an a.c. mains supply			
	For a d.c. mains supply			
	b) Transients from a telecommunication network			
G.6	Determination of minimum clearances	EL 2138-16		

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Tests relating to Radiation Safety

EL 2139 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
H	ANNEX H, IONIZING RADIATION (see 4.3.13)	EL 2139-00		

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Tests relating to Electrical Safety

EL 2140 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)*	EL 2140-00		
	Metal(s) used :			

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Tests relating to General Requirement **EL 2141 – V1.0**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)*	EL 2141-00		
K.1	Making and breaking capacity	EL 2141-01		
K.2	Thermostat reliability; operating voltage (V) :	EL 2141-02		
K.3	Thermostat endurance test; operating voltage (V) :	EL 2141-03		
K.4	Temperature limiter endurance; operating voltage (V) :	EL 2141-04		
K.5	Thermal cut-out reliability	EL 2141-05		
K.6	Stability of operation	EL 2141-06		

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Tests relating to General Requirement

EL 2142 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)*	EL 2142-00		
L.1	Typewriters*	EL 2142-01		
L.2	Adding machines and cash registers*	EL 2142-02		
L.3	Erasers*	EL 2142-03		
L.4	Pencil sharpeners*	EL 2142-04		
L.5	Duplicators and copy machines*	EL 2142-05		
L.6	Motor-operated files*	EL 2142-06		
L.7	Other business equipment*	EL 2142-07		

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Tests relating to Electrical Safety

EL 2143 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)	EL 2143-00		
M.1	Introduction*	EL 2143-01		
M.2	Method A	EL 2143-02		
M.3	Method B	EL 2143-03		
M.3.1	Ringing signal	EL 2143-04		
M.3.1.1	Frequency (Hz)	EL 2143-05		
M.3.1.2	Voltage (V)	EL 2143-06		
M.3.1.3	Cadence; time (s), voltage (V)	EL 2143-07		
M.3.1.4	Single fault current (mA)	EL 2143-08		
M.3.2	Tripping device and monitoring voltage	EL 2143-09		
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage	EL 2143-10		
M.3.2.2	Tripping device	EL 2143-11		
M.3.2.3	Monitoring voltage (V)	EL 2143-12		

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Tests relating to Electrical safety

EL 2144 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)	EL 2144-00		
N.1	ITU-T impulse test generators	EL 2144-01		
N.2	IEC 60065 impulse test generator	EL 2144-02		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
Total No of applicable Tests =
No. of tests for which the sample passed=

Certificate: It is certified that the above tests were performed and found to be passing/failing in the requirement tested.

.....
(Approving Authority)

Tests relating to General Requirements **EL 2145– V1.0**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
P	ANNEX P, NORMATIVE REFERENCES	EL 2145-00		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
Total No of applicable Tests =
No. of tests for which the sample passed=

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(Approving Authority)

Tests relating to General Requirements **EL 2146 – V1.0**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)	EL 2146-00		
	A VDR shall comply with iec 61051-2, whether a fire enclosure is provided or not, taking into account all of the following:			
	a) Preferred climatic categories Lower category temperature: -10ºC Upper category temperature: +85ºC Duration of damp Test, steady state test:21 days			
	b) Maximum continuous voltage: Atleast 1,25 times the rated voltage of the equipment or Atleast 1,25 times the upper voltage of the rated voltage range			
	c) Combination pulse :	EL 2146-01		
	d) Body of the VDR shall comply with Needle flame test according to IEC 60695-11-5 with the following test severities: duration of application of the test flame: 10 s after flame time: 5s [This test is not required if VDR complies with V-1 CLASS MATERIAL]	EL 2146-02		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =

Total No of applicable Tests =

No. of tests for which the sample passed=

Certificate: It is certified that the above tests were performed and found to be passing/failing in the requirement tested.

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(Approving Authority)

EL 2147– V1.0

Tests relating to General Requirement

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES*	EL 2147-00		
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)*	EL 2147-01		
R.2	Reduced clearances (see 2.10.3)*	EL 2147-02		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
Total No of applicable Tests =
No. of tests for which the sample passed=

Certificate: It is certified that the above tests were performed and found to be passing/failing in the requirement tested.

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(Approving Authority)

Tests relating to General Requirement

EL 2148 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)*	EL 2148-00		
S.1	Test equipment*	EL 2148-01		
S.2	Test procedure*	EL 2148-02		
S.3	Examples of waveforms during impulse testing*	EL 2148-03		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
Total No of applicable Tests =
No. of tests for which the sample passed=

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(Approving Authority)

EL 2149 – V1.0

Tests relating to Protection against Ingress of water

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)*	EL 2149-00		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

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(Approving Authority)

EL 2150 – V1.0

Tests relating to Wiring

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)	EL2150-00		
U.1	GENERAL	EL2150-01		
U.2	TYPE TESTS	EL2150-02		
U.2.1	GENERAL	EL2150-03		
U.2.2	ELECTRIC STRENGTH	EL2150-04		
U.2.2.1	SOLID ROUND WINDING WIRE AND STRANDED WINDING WIRES	EL2150-05		
U.2.2.1.1	WIRES WITH NOMINAL CONDUCTOR DIAMETER UPTO AND INCLUDING 0.100MM	EL2150-06		
U.2.2.1.2	WIRES WITH NOMINAL CONDUCTOR DIAMETER OVER 0.100MM AND INCLUDING 2.500MM	EL2150-07		
U.2.2.1.3	WIRES WITH NOMINAL CONDUCTOR DIAMETER OVER 2.500MM	EL2150-08		
U.2.2.2	SQUARE OR RECTANGULAR WIRES	EL2150-09		
U.2.3	FLEXIBILITY AND ADHERENCE	EL2150-10		
U.2.4	HEAT SHOCK	EL2150-11		
U.2.5	RETENTION OF ELECTRIC STRENGTH AFTER BENDING	EL2150-12		
U.3	TESTING DURING MANUFACTURING	EL2150-13		
U.3.1	GENERAL	EL2150-14		
U.3.2	ROUTINE TESTS	EL2150-15		
U.3.3	SAMPLING TEST	EL2150-16		

*- Total number of Requirements to be observed / inspected =

Total No of applicable Requirement =

No of Requirements for which the sample passed=

Total number of tests to be conducted =
Total No of applicable Tests =
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(Approving Authority)

Tests relating to Electrical Safety

EL 2151 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1) *	EL 2151-00		
V.1	Introduction*	EL 2151-01		
V.2	TN power distribution systems	EL 2151-02		
V.3	TT Power Distribution systems	EL 2151-03		
V.4	IT Power Distribution systems	EL 2151-04		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
Total No of applicable Tests =
No. of tests for which the sample passed=

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(Approving Authority)

Tests relating to Electrical Safety

EL 2152 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
W	ANNEX W, SUMMATION OF TOUCH CURRENTS *	EL 2152-00		
W.1	Touch current from electronic circuits*	EL 2152-01		
W.1.1	Floating circuits*	EL 2152-02		
W.1.2	Earthed circuits*	EL 2152-03		
W.2	Interconnection of several equipments*	EL 2152-04		
W.2.1	Isolation*	EL 2152-05		
W.2.2	Common return, isolated from earth*	EL 2152-06		
W.2.3	Common return, connected to protective earth*	EL 2152-07		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
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No. of tests for which the sample passed=

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(Approving Authority)

Tests relating to Electrical Safety **EL 2153– V1.0**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)*	EL 2153-00		
X.1	Determination of maximum input current*	EL 2153-01		
X.2	Overload test procedure*	EL 2153-02		

*- Total number of Requirements to be observed / inspected =
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Total number of tests to be conducted =
Total No of applicable Tests =
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(Approving Authority)

Tests relating to Radiation Safety **EL 2154– V1.0**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)	EL 2154-00		
Y.1	Test apparatus	EL 2154-01		
Y.2	Mounting of test samples	EL 2154-02		
Y.3	Carbon-arc light-exposure apparatus	EL 2154-03		
Y.4	Xenon-arc light exposure apparatus	EL 2154-04		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
Total No of applicable Tests =
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(Approving Authority)

EL 2155– V1.0

Tests relating to Electrical Safety

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)*	EL 2155-00		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
Total No of applicable Tests =
No. of tests for which the sample passed=

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(Approving Authority)

Tests relating to Mechanical Properties **EL 2156 – V1.0**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)	EL 2156-00		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
Total No of applicable Tests =
No. of tests for which the sample passed=

Certificate: It is certified that the above tests were performed and found to be passing/failing in the requirement tested.

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(Approving Authority)

Tests relating to Electrical Safety

EL 2158 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
CC	Evaluation of integrated circuit (IC) current limiters*	EL 2158-00		
CC.1	Integrated circuit (IC) current limiters*	EL 2158-01		
CC.2	Test program 1	EL 2158-02		
CC.3	Test program 2	EL 2158-03		
CC.4	Test program 3	EL 2158-04		
CC.5	Compliance	EL 2158-05		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
Total No of applicable Tests =
No. of tests for which the sample passed=

Certificate: It is certified that the above tests were performed and found to be passing/failing in the requirement tested.

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(Approving Authority)

Tests relating to Mechanical Properties

EL 2159 – V1.0

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
DD	Requirements for the mounting means of rack-mounted equipment*	EL 2159-00		
DD.1	General			
DD.2	Mechanical strength test, variable N……..:	EL 2159-01		
DD.3	Mechanical strength test, 250N, including end stops……..:	EL 2159-02		
DD.4	Compliance*……..:	EL 2159-03		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
Total No of applicable Tests =
No. of tests for which the sample passed=

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(Approving Authority)

Tests relating to Mechanical Properties **EL 2160 – V1.0**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
EE	ANNEX EE, Household and home/office document/media shredders	EL 2160-00		
EE.1	General			
EE.2	Markings and instructions*	EL 2160-01		
	Use of markings or symbols*……:			
	Information of user instructions, maintenance and/or servicing instructions*……::			
EE.3	Inadvertent reactivation test……:	EL 2160-02		
EE.4	Disconnection of power to hazardous moving parts*	EL 2160-03		
	Use of markings or symbols*……:			
EE.5	Protection against hazardous moving parts			
	Test with test finger (Figure 2A) ……:	EL 2160-04		
	Test with wedge probe (Figure EE1 and EE2) ……:	EL 2160-05		

*- Total number of Requirements to be observed / inspected =
Total No of applicable Requirement =
No of Requirements for which the sample passed=

Total number of tests to be conducted =
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.....
(Approving Authority)

1.5.1	TABLE: List of components				
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity
Supplementary information:					

1.6.2	TABLE: Electrical data (in normal conditions)					
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
Supplementary information:						

2.1.1.5	TABLE: Energy hazard measurement			
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
Supplementary information:				

2.1.1.7	TABLE: Discharge test			
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments
Supplementary information:				

2.2.2	TABLE: SELV measurement (under normal conditions)			
Transformer	Location	Voltage (max.) (V)		Voltage Limitation Component
		V peak	V d.c.	
Supplementary information:				

2.2.3	TABLE: SELV measurement (under fault conditions)	
Location	Voltage (max.) (V)	Comments
Supplementary information:		

2.4.2	TABLE: Limited current circuit measurement					
Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments	
Supplementary information:						

2.5	TABLE: Limited power source measurement		
	Limits	Measured	Verdict
According to Table 2B/2C (normal condition)			
current (in A)			
apparent power (in VA)			
According to Table 2B/2C (single fault condition)			
current (in A)			
apparent power (in VA)			
Supplementary information:			

2.6.3.4	TABLE: Resistance of earthing measurement	
Location	Resistance measured (mΩ)	Comments

Supplementary information: Tested current 32A.		

<OR>

2.6.3.4	TABLE: Resistance of earthing measurement	
Location	Voltage drop (V)	Comments
Supplementary information: Tested current 32A.		

2.10.2	Table: Working voltage measurement		
Location	RMS voltage (V)	Peak voltage (V)	Comments
Supplementary information:			

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Functional:						
Basic / supplementary:						
Reinforced:						

Supplementary information:						

2.10.5	TABLE: Distance through insulation measurements				
Distance through insulation (DTI) at/of:	U peak (V)	U r.m.s. (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Basic:					
Supplementary:					
Reinforced:					
Supplementary information:					

4.3.8	TABLE: Batteries	
The tests of 4.3.8 are applicable only when appropriate battery data is not available		
Is it possible to install the battery in a reverse polarity position?		

	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition									
Max. current during fault condition									

Test results:		Verdict
- Chemical leaks		
- Explosion of the battery		
- Emission of flame or expulsion of molten metal		
- Electric strength tests of equipment after completion of tests		

Supplementary information:

4.5	TABLE: Temperature rise measurements	

Temperatures were measured according cl. 1.4.5. Test in condition A and B at continuous normal operation as for power input measurements of table 1.6.2 resulted in highest temperature values.
Temperatures are calculated according cl. 1.4.12.3 with regard to the maximum ambient operation temperature of _____°C(T_{ma}), as specified by the manufacturer.

test voltage(s) (V):	A: V, Hz	B: V, Hz
t_{amb1} (°C): A: B:	t_{amb2} (°C):	A: B:

Temperature of part/at: (measured with thermocouples)	Measured temperature rise at T_{amb}		Calculated temperature at T_{ma}		Allowed T_{max} (°C)
	A dT (K)	B dT (K)	A T (°C)	B T (°C)	

Supplementary information:

Temperatures measured with winding resistance method: Not used

temperature T of winding: (winding resistance method)	(V)	R_1 (Ω)	R_2 (Ω)	T (°C)	allowed T_{max} (°C)	insulation class

Supplementary information:

4.5.5	TABLE: Ball pressure test of thermoplastic parts		
	Allowed impression diameter (mm) .....:	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)

Supplementary information:

4.6.1, 4.6.2	Table: Enclosure opening measurements	

Location	Size (mm)	Comments

Supplementary information:

4.7	Table: Resistance to fire				

Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence

Supplementary information:

5.1.6	TABLE: Touch current and protective conductor current measurement		
	Test voltage (V) ..... :	AC ……..V, ……Hz	—

Measurement location (Terminal A connected to...)	Polarity (normal) [mA]		Polarity (reverse) [mA]		Limit (mA)	Comments
	Switch: ON	Switch: OFF	Switch: ON	Switch: OFF		
Earth terminal ("e" = open)						
Operating Panel ("e" = close)						

Supplementary information:

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests		

Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Functional:			
Basic / supplementary:			
Reinforced:			
Supplementary information:			

5.3	TABLE: Fault condition tests		
	Ambient temperature (°C) .....:		—
	Power source for EUT: Manufacturer, model/type, output rating .....:		—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Supplementary information:						

C.2	TABLE: Insulation of transformers		
	Transformer part name .....:		—
	Manufacturer .....:		—
	Type .....:		—

Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Primary /input winding and secondary/output winding (internal)						
Primary/input winding and core (internal)						
Secondary/output winding and core (internal)						
Primary/input part and secondary/output part (external)						
Primary/input part and core (external)						
Primary/input part and secondary/output winding (external)						
Secondary/output part and core (external)						
Secondary/output part and primary/input winding (external)						
Description of design:						
(a) Bobbin						
Primary/input pins .....:						
Secondary/output pins .....:						
Material (manufacturer, type, ratings) .....:						

Thickness (mm)..... :	
(b) General	
Please insert here a description of the transformer design describing:	
Supplementary information:	