

# **SAFETY TEST REPORT**

**for**

**Protractor**

**Model No.: S22AXX**

**M07AXX**

of

**Applicant : 7burg UG (haftungsbeschränkt)**

**Address : Hansastr. 9A, 06118Halle, Germany**

Tested and Prepared  
by



Worldwide Testing Services (Taiwan) Co., Ltd.

**EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013**



**Report No.: W6D21804-18049-L**

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<b>TEST REPORT</b> <b>IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1:2006</b> <b>Information technology equipment – Safety –</b> <b>Part 1: General requirements</b>	
<b>Report Reference No.</b> .....	W6D21804-18049-L
<b>Complied by ( + signature )</b> .....	Aslan Chen <span style="float: right; font-family: cursive; font-size: 1.2em;">Aslan Chen</span>
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<b>Testing Laboratory</b> .....	Worldwide Testing Services(Taiwan) Co., Ltd.
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<b>Testing location</b> .....	As above
<b>Applicant's name</b> .....	7burg UG (haftungsbeschränkt)
<b>Address</b> .....	Hansastr. 9A, 06118Halle, Germany
<b>Manufacturer's name</b> .....	Ardi Technology Corp.
<b>Address</b> .....	7F, No. 786-1, Zhongzhen Road, Zhonghe Dist., New Taipei City, Taiwan, 235
<b>Factory's name</b> .....	Same as manufacturer's name
<b>Address</b> .....	Same as manufacturer's address
<b>Test specification:</b>	
Standard.....	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
Test procedure.....	CE Marking serial in LVD
Non-standard test method.....	N/A
<b>Test item description</b> .....	Protractor
<b>Trade Mark</b> .....	Girafus
<b>Model/Type reference</b> .....	S22AXX M07AXX
<b>Series model</b> .....	22xx, xx7x
<b>Ratings</b> .....	S22AXX : 3.0 Vd.c.(CR2032) M07AXX : 3.0 Vd.c.(AAA*2)
<b>Copy of marking plate:</b>	
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <p><b>Girafus</b> Model:S22AXX</p>  </div>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <p><b>Girafus</b> Model:M07AXX</p>  </div>
<p>Note: Company or brand name will screen on this rating label or one side of enclosure.</p>	



IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
<b>1</b>	<b>GENERAL</b>		P
<b>1.5</b>	<b>Components</b>		P
1.5.1	General	Refer to below	P
	Comply with IEC 60950-1 or IEC 62368-1 or relevant component standard	Components which were found to affect safety aspects comply with the requirement of this standard or within the safety aspects of the relevant IEC. (see appended table 1.5.1).	P
1.5.2	Evaluation and testing of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Component not covered by IEC standards are tested under the conditions present in the equipment.	P
1.5.3	Thermal controls	No such component used.	N/A
1.5.4	Transformers	No such component used.	N/A
1.5.5	Interconnecting cables	No such part used.	N/A
1.5.6	Capacitors bridging insulation	No such component used.	N/A
1.5.7	Resistors bridging insulation	No such component used.	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	No such component used.	N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	Refer to above	N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	Refer to above	N/A
1.5.8	Components in equipment for IT power systems	Class III equipment	N/A
1.5.9	Surge suppressors	No such components used.	N/A
1.5.9.1	General	Refer to above	N/A
1.5.9.2	Protection of VDRs	Refer to above	N/A
1.5.9.3	Bridging of functional insulation by a VDR	Refer to above	N/A
1.5.9.4	Bridging of basic insulation by a VDR	Refer to above	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	Refer to above	N/A
<b>1.6</b>	<b>Power interface</b>		P
1.6.1	AC power distribution systems	No connecting to AC mains.	N/A
1.6.2	Input current	With maximum load, input current was measured.(see appended table 1.6.2)	P

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
1.6.3	Voltage limit of hand-held equipment	This appliance is not designed for the hand-held equipment which voltage doesn't exceed 250V.	N/A
1.6.4	Neutral conductor	The equipment is considered to a Class III equipment without such connection.	N/A
<b>1.7</b>	<b>Marking and instructions</b>		P
1.7.1	Power rating and identification markings	The equipment is not directly intended to AC or DC mains supply. It is not necessary for power rating label.	N/A
1.7.1.1	Power rating marking	Refer to above	N/A
	Rated voltage(s) or voltage range(s) (V) :	S22AXX : 3.0 Vd.c.(CR2032) M07AXX : 3.0 Vd.c.(AAA*2)	P
	Symbol for nature of supply, for d.c. only:	Refer to above	N/A
	Rated frequency or rated frequency range (Hz):	DC equipment	N/A
	Rated current (mA or A):		N/A
	the equipment, or a system, has multiple MAINS SUPPLY connections		N/A
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark :	Girafus	P
	Model identification or type reference :	S22AXX M07AXX	P
	Symbol for Class II equipment only :	Class III equipment.	N/A
	Other markings and symbols :	No other markings and symbols	N/A
1.7.1.3	Use of graphical symbols	No such graphical symbols used.	N/A
	Graphical symbols shall be in accordance with IEC 60417 or ISO 3864-2 or ISO 7000	Refer to above	N/A
1.7.2	Safety instructions and marking	Installation instruction with directions to maintain the requirements of IEC/EN 60950-1, and included the requirements of the IEC/EN 60950 must be observed with the installation.	P
1.7.2.1	General	Refer to above	P
1.7.2.2	Disconnect devices	Class III equipment, No such disconnect device used.	N/A
1.7.2.3	Overcurrent protective device	Class III equipment, No such protective device used.	N/A
1.7.2.4	IT power distribution systems	DC equipment	N/A
1.7.2.5	Operator access with a tool	No access with a tool in normal condition.	N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
1.7.2.6	Ozone	No Ozone produces within this equipment.	N/A
1.7.3	Short duty cycles	The unit is designed for continuous operation condition.	N/A
1.7.4	Supply voltage adjustment	No such device used.	N/A
	Methods and means of adjustment; reference to installation instructions :	Refer to above	N/A
1.7.5	Power outlets on the equipment	No such power outlet used.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) :	Refer to above	N/A
1.7.7	Wiring terminals	No such device used.	N/A
1.7.7.1	Protective earthing and bonding terminals:	No such connection used.	N/A
1.7.7.2	Terminals for a.c. mains supply conductors	The unit is not permanently connected or provided with a non-detachable power cord.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	The unit is not permanently connected or provided with a non-detachable power cord.	N/A
1.7.8	Controls and indicators	Refer to below	N/A
1.7.8.1	Identification, location and marking:	No function of controls are provided. No safety involved indicator.	N/A
1.7.8.2	Colours	No safety relevant controls or indicator.	N/A
1.7.8.3	Symbols according to IEC 60417:	No symbols according to IEC 60417 used.	N/A
1.7.8.4	Markings using figures :	No switch using figures for different position.	N/A
1.7.9	Isolation of multiple power sources:	DC equipment	N/A
1.7.10	Thermostats and other regulating device:	No such parts are applied.	N/A
1.7.11	Durability	The label was subjected to the permanence of marking test. The label was rubbed by cloth soaked with water for 15s and then again for 15s with cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was neither curling nor lifting of the label edge.	P
1.7.12	Removable parts	No removable parts provided.	N/A
1.7.13	Replaceable batteries :	Primary battery is used.No rechargeable battery provided.	N/A
	Language(s) :	In English	—
1.7.14	Equipment for restricted access locations:	Not limited for used in restricted access locations.	N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
<b>2</b>	<b>PROTECTION FROM HAZARDS</b>		P
2.1	Protection from electric shock and energy hazards		N/A
2.1.1	Protection in operator access areas	No energized parts in the equipment.Operator is permitted to access SELV circuit	N/A
2.1.1.1	Access to energized parts	Refer to below	N/A
	Test by inspection :	Only SELV in the equipment.	N/A
	Test with test finger (Figure 2A) :	Refer to above	N/A
	Test with test pin (Figure 2B) :	Refer to above	N/A
	Test with test probe (Figure 2C) :	No TNV circuits	N/A
2.1.1.2	Battery compartments	No battery compartment used	N/A
2.1.1.3	Access to ELV wiring	No ELV circuits	N/A
	Working voltage ( $V_{peak}$ or $V_{rms}$ ); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No access to hazardous voltage circuit wiring	N/A
2.1.1.5	Energy hazards :	There is no energy hazard in operator access area.	N/A
2.1.1.6	Manual controls	No manual controls used.	N/A
2.1.1.7	Discharge of capacitors in equipment	No discharge of capacitors in the equipment.	N/A
	Measured voltage (V); time-constant (s):		—
2.1.1.8	Energy hazards – d.c. mains supply	No connection to the d.c. mains supply.	N/A
	a) Capacitor connected to the d.c. mains supply :	Refer to above	N/A
	b) Internal battery connected to the d.c. mains supply :	No internal battery connected to the d.c. mains supply in the equipment.	N/A
2.1.1.9	Audio amplifiers :	No audio amplifier in the equipment.	N/A
2.1.2	Protection in service access areas	No hazardous voltages in service access areas	N/A
2.1.3	Protection in restricted access locations	Equipment not intended for installation in RAL.	N/A

<b>2.2</b>	<b>SELV circuits</b>		P
2.2.1	General requirements	See below	P
2.2.2	Voltages under normal conditions (V) :	Between any conductors of the SELV circuits 42.4 $V_{peak}$ or 60 $V_{d.c.}$ are not exceeded.	P
2.2.3	Voltages under fault conditions (V) :		N/A
2.2.4	Connection of SELV circuits to other circuits :	SELV circuits was not connected to other circuits.	N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
<b>2.3</b>	<b>TNV circuits</b>		N/A
2.3.1	Limits	No TNV circuits.	N/A
	Type of TNV circuits:	Refer to above	—
2.3.2	Separation from other circuits and from accessible parts	Refer to above	N/A
2.3.2.1	General requirements	Refer to above	N/A
2.3.2.2	Protection by basic insulation	Refer to above	N/A
2.3.2.3	Protection by earthing	Refer to above	N/A
2.3.2.4	Protection by other constructions:	Refer to above	N/A
2.3.3	Separation from hazardous voltages	Refer to above	N/A
	Insulation employed:	Refer to above	—
2.3.4	Connection of TNV circuits to other circuits	Refer to above	N/A
	Insulation employed:	Refer to above	—
2.3.5	Test for operating voltages generated externally	Refer to above	N/A
<b>2.4</b>	<b>Limited current circuits</b>		N/A
2.4.1	General requirements	No limited current circuits.	N/A
2.4.2	Limit values	Refer to above	N/A
	Frequency (Hz):	Refer to above	—
	Measured current (mA):	Refer to above	—
	Measured voltage (V):	Refer to above	—
	Measured circuit capacitance (nF or $\mu$ F):	Refer to above	—
2.4.3	Connection of limited current circuits to other circuits	Refer to above	N/A
<b>2.5</b>	<b>Limited power sources</b>		N/A
	a) Inherently limited output	No limited power sources used.	N/A
	b) Impedance limited output	Refer to above	N/A
	c) Regulating network limited output under normal operating and single fault condition	Refer to above	N/A
	d) Overcurrent protective device limited output	Refer to above	N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA):	Refer to above	—
	Current rating of overcurrent protective device (A) :	Refer to above	—
	Use of integrated circuit (IC) current limiters	Refer to above	N/A
<b>2.6</b>	<b>Provisions for earthing and bonding</b>		N/A



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Clause	Requirement - Test	Result-Remark	Verdict
2.6.1	Protective earthing	No connecting to AC or DC mains supply.Class III equipment	N/A
2.6.2	Functional earthing	No hazardous voltage used.Class III equipment	N/A
2.6.3	Protective earthing and protective bonding conductors	Refer to above	N/A
2.6.3.1	General	Refer to above	N/A
2.6.3.2	Size of protective earthing conductors	Refer to above	N/A
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG:		—
2.6.3.3	Size of protective bonding conductors	No such connection in the equipment	N/A
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG:		—
	Protective current rating (A), cross-sectional area (mm <sup>2</sup> ), AWG:		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance ( $\Omega$ ), voltage drop (V), test current (A), duration (min):		N/A
2.6.3.5	Colour of insulation:	No protective earthing conductor used in the equipment.	N/A
2.6.4	Terminals	No such protective earthing terminals used	N/A
2.6.4.1	General	Refer to above	N/A
2.6.4.2	Protective earthing and bonding terminals	Refer to above	N/A
	Rated current (A), type, nominal thread diameter (mm):		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	No such conductors used	N/A
2.6.5	Integrity of protective earthing	No such protective earthing connection used.	N/A
2.6.5.1	Interconnection of equipment	Not a system of interconnection equipment.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	Refer to above	N/A
2.6.5.3	Disconnection of protective earth	No such connection	N/A
2.6.5.4	Parts that can be removed by an operator	No parts can be removed by operator in normal condition	N/A
2.6.5.5	Parts removed during servicing	No parts need to be removed during servicing.	N/A
2.6.5.6	Corrosion resistance	No protective conductor used	N/A
2.6.5.7	Screws for protective bonding	Refer to above	N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system	No telecommunication network or cable distribution system	N/A

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Clause	Requirement - Test	Result-Remark	Verdict
<b>2.7</b>	<b>Overcurrent and earth fault protection in primary circuits</b>		N/A
2.7.1	Basic requirements	Secondary circuits	N/A
	Instructions when protection relies on building installation	Refer to above	N/A
2.7.2	Faults not simulated in 5.3.7	No hazardous voltage in the equipment. Class III equipment.	N/A
2.7.3	Short-circuit backup protection	No directly connected to AC or DC mains supply.	N/A
2.7.4	Number and location of protective devices :	Class III equipment	N/A
2.7.5	Protection by several devices	Class III equipment	N/A
2.7.6	Warning to service personnel:	Class III equipment	N/A
<b>2.8</b>	<b>Safety interlocks</b>		N/A
2.8.1	General principles	No safety interlock or similar devices used within the EUT	N/A
2.8.2	Protection requirements	Refer to above	N/A
2.8.3	Inadvertent reactivation	Refer to above	N/A
2.8.4	Fail-safe operation	Refer to above	N/A
	Protection against extreme hazard	Refer to above	N/A
2.8.5	Moving parts	Refer to above	N/A
2.8.6	Overriding	Refer to above	N/A
2.8.7	Switches, relays and their related circuits	Refer to above	N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) :	Refer to above	N/A
2.8.7.2	Overload test	Refer to above	N/A
2.8.7.3	Endurance test	Refer to above	N/A
2.8.7.4	Electric strength test	(see appended table 5.2)	N/A
2.8.8	Mechanical actuators		N/A
<b>2.9</b>	<b>Electrical insulation</b>		P
2.9.1	Properties of insulating materials	Natural rubber, hygroscopic materials or asbestos are not used	P
2.9.2	Humidity conditioning	Class III equipment. All SELV circuits is applied in the equipment.	N/A
	Relative humidity (%), temperature (°C):		—
2.9.3	Grade of insulation	Functional insulation	P
2.9.4	Separation from hazardous voltages	No hazardous voltage in the equipment	N/A
	Method(s) used :		—
<b>2.10</b>	<b>Clearances, creepage distances and distances through insulation</b>		P
2.10.1	General	Class III equipment.	N/A
2.10.1.1	Frequency :	Class III equipment.	N/A

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Clause	Requirement - Test	Result-Remark	Verdict
2.10.1.2	Pollution degrees :	Pollution degree 3 applicable.	N/A
2.10.1.3	Reduced values for functional insulation	See subclause 5.3	P
2.10.1.4	Intervening unconnected conductive parts	Class III equipment.	N/A
2.10.1.5	Insulation with varying dimensions	Class III equipment.	N/A
2.10.1.6	Special separation requirements	Class III equipment.	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No such starting pulses produces in the equipment	N/A
2.10.2	Determination of working voltage	Under SELV	N/A
2.10.2.1	General	Refer to above	N/A
2.10.2.2	RMS working voltage	Refer to above	N/A
2.10.2.3	Peak working voltage	Refer to above	N/A
2.10.3	Clearances	Secondary circuit	N/A
2.10.3.1	General	Refer to above	N/A
2.10.3.2	Mains transient voltages	Refer to below	N/A
	a) AC mains supply :	No directly to connected AC mains supply	N/A
	b) Earthed d.c. mains supplies :	No directly to connected d.c. mains supply.	N/A
	c) Unearthed d.c. mains supplies :	Refer to above	N/A
	d) Battery operation :	No charging circuits in the equipment	N/A
2.10.3.3	Clearances in primary circuits	Secondary circuits.	N/A
2.10.3.4	Clearances in secondary circuits	Function insulation	P
2.10.3.5	Clearances in circuits having starting pulses	No such starting pulses produces in the equipment	N/A
2.10.3.6	Transients from a.c. mains supply :	No directly connection to a.c. mains supply.	N/A
2.10.3.7	Transients from d.c. mains supply :	No directly connection to d.c. mains supply	N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems :	No such connections	N/A
2.10.3.9	Measurement of transient voltage levels	Refer to below	N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply :	No directly connection to a.c. mains supply.	N/A
	For a d.c. mains supply :	No directly connection to d.c. mains supply	N/A
	b) Transients from a telecommunication network :	No connected to transients from a telecommunication network :	N/A
2.10.4	Creepage distances	Class III equipment	N/A
2.10.4.1	General	Refer to above	N/A
2.10.4.2	Material group and comparative tracking index	Refer to above	N/A

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Clause	Requirement - Test	Result-Remark	Verdict
	CTI tests:	CIIIa+CIIIb	—
2.10.4.3	Minimum creepage distances	Class III equipment	N/A
2.10.5	Solid insulation	No hazardous voltage in the equipment	N/A
2.10.5.1	General	Refer to above	N/A
2.10.5.2	Distances through insulation		N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5.	Cemented joints		N/A
2.10.5.6	Thin sheet material – General		N/A
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs):		—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure	No such material used.	N/A
	Electric strength test	Class III equipment	N/A
2.10.5.10	Thin sheet material – alternative test procedure	Refer to above	N/A
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components	No such wound components used.	N/A
2.10.5.12	Wire in wound components	Refer to above	N/A
	Working voltage:		N/A
	a) Basic insulation not under stress :		N/A
	b) Basic, supplementary, reinforced insulation:		N/A
	c) Compliance with Annex U :		N/A
	Two wires in contact inside wound component; angle between 45° and 90°:		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage :		N/A
	- Basic insulation not under stress :		N/A
	- Supplementary, reinforced insulation :		N/A
2.10.6	Construction of printed boards		N/A
2.10.6.1	Uncoated printed boards		N/A
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A

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Clause	Requirement - Test	Result-Remark	Verdict
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs):		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

<b>3</b>	<b>WIRING, CONNECTIONS AND SUPPLY</b>		N/A
3.1	General		N/A
3.1.1	Current rating and overcurrent protection	No directly connected to AC or DC mains supply.	N/A
3.1.2	Protection against mechanical damage		N/A
3.1.3	Securing of internal wiring		N/A
3.1.4	Insulation of conductors		N/A
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors		N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring		N/A

<b>3.2</b>	<b>Connection to a mains supply</b>		N/A
3.2.1	Means of connection	Not a permanently equipment	N/A
3.2.1.1	Connection to an a.c. mains supply	No connection to AC or DC mains supply.	N/A
3.2.1.2	Connection to a d.c. mains supply	- Not a permanently equipment - No non-detachable power cord is applied.	N/A
3.2.2	Multiple supply connections	No multiple mains supply are applied for the equipment.	N/A
3.2.3	Permanently connected equipment	Not a permanently equipment	N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
	Number of conductors, diameter of cable and conduits (mm) :		—
3.2.4	Appliance inlets	No such device is applied.	N/A
3.2.5	Power supply cords	No such device is applied.	N/A
3.2.5.1	AC power supply cords	See above	N/A
	Type :		—
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG :		—
3.2.5.2	DC power supply cords	No such used with this apparatus.	N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) :		—
	Longitudinal displacement (mm) :		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g):		—
	Radius of curvature of cord (mm):		—
3.2.9	Supply wiring space		N/A
<b>3.3</b>	<b>Wiring terminals for connection of external conductors</b>		N/A
3.3.1	Wiring terminals	No wiring terminals for connection of external conductors.	N/A
3.3.2	Connection of non-detachable power supply cords	Refer to above	N/A
3.3.3	Screw terminals	Refer to above	N/A
3.3.4	Conductor sizes to be connected	Refer to above	N/A
	Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ):		—
3.3.5	Wiring terminal sizes	No such parts used.	N/A
	Rated current (A), type, nominal thread diameter (mm):		—
3.3.6	Wiring terminal design	No such parts used.	N/A
3.3.7	Grouping of wiring terminals	Refer to above	N/A
3.3.8	Stranded wire	Refer to above	N/A
<b>3.4</b>	<b>Disconnection from the mains supply</b>		N/A
3.4.1	General requirement	No directly connected to AC or DC mains supply.	N/A
3.4.2	Disconnect devices	Refer to above	N/A
3.4.3	Permanently connected equipment	Not a permanently connected equipment	N/A
3.4.4	Parts which remain energized	No parts with energized when removal power	N/A
3.4.5	Switches in flexible cords	No such device used	N/A

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Clause	Requirement - Test	Result-Remark	Verdict
3.4.6	Number of poles - single-phase and d.c. equipment	USB plug provided with arrangement pins so that it was not installation revers polarity.	N/A
3.4.7	Number of poles - three-phase equipment	DC equipment	N/A
3.4.8	Switches as disconnect devices	No such device used.	N/A
3.4.9	Plugs as disconnect devices	No such device used.	N/A
3.4.10	Interconnected equipment	No hazardous voltage in the equipment	N/A
3.4.11	Multiple power sources	Only one power sources.	N/A
<b>3.5</b>	<b>Interconnection of equipment</b>		N/A
3.5.1	General requirements	SELV in the equipment	N/A
3.5.2	Types of interconnection circuits :	No SELV circuits to other circuits	N/A
3.5.3	ELV circuits as interconnection circuits	No ELV circuits used	N/A
3.5.4	Data ports for additional equipment	No addition data ports in the equipment.	N/A
<b>4</b>	<b>PHYSICAL REQUIREMENTS</b>		p
<b>4.1</b>	<b>Stability:</b>		N/A
	Angle of 10°	Class III equipment. No hazardous voltage in the equipment.	N/A
	Test force (N) :	Not a stand-floor standing equipment	N/A
<b>4.2</b>	<b>Mechanical strength</b>		P
4.2.1	General	Class III equipment. No hazardous voltage in the equipment.	N/A
	Rack-mounted equipment.	Refer t oabove	N/A
4.2.2	Steady force test, 10 N	Class III equipment. No hazardous voltage in the equipment.	N/A
4.2.3	Steady force test, 30 N	Class III equipment. No hazardous voltage in the equipment.	N/A
4.2.4	Steady force test, 250 N	Class III equipment. No hazardous voltage in the equipment.	N/A
4.2.5	Impact test	Class III equipment. No hazardous voltage in the equipment.	N/A
	Fall test		—
	Swing test		—
4.2.6	Drop test; height (mm) :	(see appended table)	N/A
4.2.7	Stress relief test	Refer to above	N/A
4.2.8	Cathode ray tubes	No CRTs is provided.	N/A
	Picture tube separately certified :	Refer to above	N/A
4.2.9	High pressure lamps	No such parts	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) :	Nott a wall or ceiling mounted equipment	N/A

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Clause	Requirement - Test	Result-Remark	Verdict
4.2.11	Rotating solid media	No such device used	N/A
	Test to cover on the door:	Refer to above	N/A
<b>4.3</b>	<b>Design and construction</b>		P
4.3.1	Edges and corners	The exterior appearance provided with smooth of edges and corners.	P
4.3.2	Handles and manual controls; force (N):	No handles and manual controls are provided with hazardous live voltage.	N/A
4.3.3	Adjustable controls	No adjustable controls used.	N/A
4.3.4	Securing of parts	No screws provided. Class III equipment	N/A
4.3.5	Connection by plugs and sockets	No mismatch of connectors, plug or sockets possible.	N/A
4.3.6	Direct plug-in equipment	Not a direct plug-in equipment.	N/A
	Torque:		—
	Compliance with the relevant mains plug standard :		N/A
4.3.7	Heating elements in earthed equipment	No such parts are applied.	N/A
4.3.8	Batteries	Refer to below	P
	- Overcharging of a rechargeable battery	No charging circuit is applied.	N/A
	- Unintentional charging of a non-rechargeable battery	See appended table 5.3	P
	- Reverse charging of a rechargeable battery	No charging circuit is applied.	N/A
	- Excessive discharging rate for any battery	No charging circuit is applied.	N/A
4.3.9	Oil and grease	Insulation intended to be used not considered exposing to oil or grease.	N/A
4.3.10	Dust, powders, liquids and gases	The equipment is not intended to be used exposing to dust, powers, liquids and gases.	N/A
4.3.11	Containers for liquids or gases	No container for liquids or gases.	N/A
4.3.12	Flammable liquids :	No flammable liquids provided.	N/A
	Quantity of liquid (l) :	Refer to above	N/A
	Flash point (°C) :	Refer to above	N/A
4.3.13	Radiation	No radiation hazards in the equipment	P
4.3.13.1	General	Refer to above	N/A
4.3.13.2	Ionizing radiation	The equipment doesn't generate ionizing radiation.	N/A
	Measured radiation (pA/kg) :		—
	Measured high-voltage (kV):		—
	Measured focus voltage (kV) :		—
	CRT markings:		—



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Clause	Requirement - Test	Result-Remark	Verdict
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability classification :		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation :		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	No LED used	N/A
4.3.13.5.1	Lasers (including laser laser diodes)		N/A
	Laser class :		—
4.3.13.5.2	Light emitting diodes (LEDs)	No LED used	N/A
4.3.13.6	Other types :		N/A

<b>4.4</b>	<b>Protection against hazardous moving parts</b>		N/A
4.4.1	General	No hazardous moving parts	N/A
4.4.2	Protection in operator access areas :	Refer to above	N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations :		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a):		N/A
	Is considered to cause pain, not injury. b) :		N/A
	Considered to cause injury. c) :		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning:		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning :		N/A

<b>4.5</b>	<b>Thermal requirements</b>		P
4.5.1	General	(see appended table 4.5)	P
4.5.2	Temperature tests	Refer to below	P
	Normal load condition per Annex L	Tested with max normal load	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat :	No direct connected to AC or DC mains supply.	N/A

<b>4.6</b>	<b>Openings in enclosures</b>		N/A
4.6.1	Top and side openings	No openings of constructions used.	N/A
	Dimensions (mm) :		—

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Clause	Requirement - Test	Result-Remark	Verdict
4.6.2	Bottoms of fire enclosures	The equipment is not transportable equipment.	N/A
	Construction of the bottom, dimensions (mm) :		—
4.6.3	Doors or covers in fire enclosures	No fire enclosure used.	N/A
4.6.4	Openings in transportable equipment	Not a transportable equipment used.	N/A
4.6.4.1	Constructional design measures	Refer to above	N/A
	Dimensions (mm) :		—
4.6.4.2	Evaluation measures for larger openings	No opening provided.	N/A
4.6.4.3	Use of metallized parts	Refer to above	N/A
4.6.5	Adhesives for constructional purposes	No such constructions used.	N/A
	Conditioning temperature (°C), time (weeks):		—
<b>4.7</b>	<b>Resistance to fire</b>		<b>P</b>
4.7.1	Reducing the risk of ignition and spread of flame	No potential ignition sources in the equipment.	N/A
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	N/A
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	See below	P
4.7.2.1	Parts requiring a fire enclosure	- components are mounted on the PCB with V-1 flammability category and - power source is under 15 VA Fire enclosure is not requirement.	N/A
4.7.2.2	Parts not requiring a fire enclosure	Refer to above	P
4.7.3	Materials		N/A
4.7.3.1	General	PCB is used with flammability class V-1 min.	P
4.7.3.2	Materials for fire enclosures	HB or better	N/A
4.7.3.3	Materials for components and other parts outside fire enclosures	Class III equipment	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Class III equipment	N/A
4.7.3.5	Materials for air filter assemblies	No air filter provided.	N/A
4.7.3.6	Materials used in high-voltage components	No high voltage components provided.	N/A
<b>5</b>	<b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b>		<b>P</b>
5.1	<b>Touch current and protective conductor current</b>		N/A
5.1.1	General	No hazardous voltage in the equipment. Class III equipment	N/A
5.1.2	Configuration of equipment under test (EUT)	No hazardous voltage in the equipment. Class III equipment	N/A

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Clause	Requirement - Test	Result-Remark	Verdict
5.1.2.1	Single connection to an a.c. mains supply		N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit	No hazardous voltage in the equipment. Class III equipment	N/A
5.1.4	Application of measuring instrument	No hazardous voltage in the equipment. Class III equipment	N/A
5.1.5	Test procedure	No hazardous voltage in the equipment. Class III equipment	N/A
5.1.6	Test measurements	No hazardous voltage in the equipment. Class III equipment	N/A
	Supply voltage (V) :		—
	Measured touch current (mA) :		—
	Max. allowed touch current (mA) :		—
	Measured protective conductor current (mA) :		—
	Max. allowed protective conductor current (mA):		—
5.1.7	Equipment with touch current exceeding 3,5 mA	No hazardous voltage in the equipment. Class III equipment	N/A
5.1.7.1	General :		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	No hazardous voltage in the equipment. Class III equipment	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system	No hazardous voltage in the equipment. Class III equipment	N/A
	Supply voltage (V) :		—
	Measured touch current (mA) :		—
	Max. allowed touch current (mA) :		—
5.1.8.2	Summation of touch currents from telecommunication networks	No hazardous voltage in the equipment. Class III equipment	N/A
	a) EUT with earthed telecommunication ports :		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A
<b>5.2</b>	<b>Electric strength</b>		N/A
5.2.1	General	No hazardous voltage in the equipment. Class III equipment	N/A
5.2.2	Test procedure	No hazardous voltage in the equipment. Class III equipment	N/A

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Clause	Requirement - Test	Result-Remark	Verdict
<b>5.3</b>	<b>Abnormal operating and fault conditions</b>		P
5.3.1	Protection against overload and abnormal operation		N/A
5.3.2	Motors	Motor in the equipment	P
5.3.3	Transformers	No transformer in the equipment	N/A
5.3.4	Functional insulation:	Method c) considered. Due to - all components are mounted on PCB of flammability V-1 - may be of over-heating risk Testing performed. See appended table 5.3	P
5.3.5	Electromechanical components	No such device used.	N/A
5.3.6	Audio amplifiers in ITE:	No audio amplifier used in the equipment	N/A
5.3.7	Simulation of faults	(See appended table 5.3)	P
5.3.8	Unattended equipment	(See appended table 5.3)	P
5.3.9	Compliance criteria for abnormal operating and fault conditions	(See appended table 5.3)	P
5.3.9.1	During the tests	No fire and molten metal and deformed enclosure occur.	P
5.3.9.2	After the tests		N/A
<b>6</b>	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements	No connected to telecommunication networks	N/A
	Supply voltage (V) :		—
	Current in the test circuit (mA) :		—
6.1.2.2	Exclusions :	Refer to above	N/A
<b>6.2</b>	<b>Protection of equipment users from overvoltages on telecommunication networks</b>		N/A
6.2.1	Separation requirements	No connected to telecommunication networks	N/A
6.2.2	Electric strength test procedure	Refer to above	N/A
6.2.2.1	Impulse test	Refer to above	N/A
6.2.2.2	Steady-state test	Refer to above	N/A
6.2.2.3	Compliance criteria	Refer to above	N/A
<b>6.3</b>	<b>Protection of the telecommunication wiring system from overheating</b>		N/A
	Max. output current (A) :		—

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Clause	Requirement - Test	Result-Remark	Verdict
	Current limiting method :		—
<b>7</b>	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		N/A
7.1	General	Not to connection to cable distrubtion system	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment	Refer to above	N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system	Refer to above	N/A
7.4	Insulation between primary circuits and cable distribution systems	Refer to above	N/A
7.4.1	General	Refer to above	N/A
7.4.2	Voltage surge test	Refer to above	N/A
7.4.3	Impulse test	Refer to above	N/A
<b>A</b>	<b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		N/A
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)		N/A
A.1.1	Samples:		—
	Wall thickness (mm):		—
A.1.2	Conditioning of samples; temperature (°C) :		N/A
A.1.3	Mounting of samples:		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D :		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	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)		N/A
A.2.1	Samples, material:		—
	Wall thickness (mm):		—
A.2.2	Conditioning of samples; temperature (°C) .. :		N/A
A.2.3	Mounting of samples :		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C :		—

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Clause	Requirement - Test	Result-Remark	Verdict
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	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		N/A
	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)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

<b>B</b>	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		N/A
B.1	General requirements		N/A
	Position :		—
	Manufacturer:		—
	Type :		—
	Rated values :		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) :		—
	Electric strength test: test voltage (V):		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) :		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits	(see appended table 5.3)	N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure	Tested on the bench table	N/A
B.7.4	Electric strength test; test voltage (V) :	Class III equipment	N/A

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Clause	Requirement - Test	Result-Remark	Verdict
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) :		—
<b>C</b>	<b>ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		N/A
	Position :		—
	Manufacturer :		—
	Type :		—
	Rated values :		—
	Method of protection:		—
C.1	Overload test	(see appended table 5.3)	N/A
C.2	Insulation	(see appended table 5.2)	N/A
	Protection from displacement of windings:		N/A
<b>D</b>	<b>ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)</b>		N/A
D.1	Measuring instrument		N/A
D.2	Alternative measuring instrument		N/A
<b>E</b>	<b>ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)</b>		N/A
<b>F</b>	<b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)</b>		N/A
<b>G</b>	<b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply:		N/A
G.2.2	Earthed d.c. mains supplies :		N/A
G.2.3	Unearthed d.c. mains supplies :		N/A
G.2.4	Battery operation:		N/A
G.3	Determination of telecommunication network transient voltage (V) :		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks :		N/A

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Clause	Requirement - Test	Result-Remark	Verdict
G.4.2	Transients from telecommunication networks :		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances :		N/A
<b>H</b>	<b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b>		N/A
<b>J</b>	<b>ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		N/A
	Metal(s) used:		—
<b>K</b>	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)</b>		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) :		N/A
K.3	Thermostat endurance test; operating voltage (V):		N/A
K.4	Temperature limiter endurance; operating voltage (V) :		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation	(see appended table 5.3)	N/A
<b>L</b>	<b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)</b>		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment	Thermostatic Radiator Valve	P
<b>M</b>	<b>ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)</b>		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringling signal		N/A



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Clause	Requirement - Test	Result-Remark	Verdict
M.3.1.1	Frequency (Hz) :		—
M.3.1.2	Voltage (V) :		—
M.3.1.3	Cadence; time (s), voltage (V) :		—
M.3.1.4	Single fault current (mA) :		—
M.3.2	Tripping device and monitoring voltage :		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) :		N/A
<b>N</b>	<b>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)</b>		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
<b>P</b>	<b>ANNEX P, NORMATIVE REFERENCES</b>		—
<b>Q</b>	<b>ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)</b>		N/A
	a) Preferred climatic categories :		N/A
	b) Maximum continuous voltage :		N/A
	c) Pulse current :		N/A
	d) The body of the VDR		N/A
<b>R</b>	<b>ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
<b>S</b>	<b>ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
<b>T</b>	<b>ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		N/A
			—
<b>U</b>	<b>ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>		N/A
			—

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
U.1	General		N/A
U.2	Type tests		N/A
U.2.1	General		N/A
U.2.2	Electric strength		N/A
U.2.2.1	Solid round winding wires and stranded winding wires		N/A
U.2.2.1.1	Wires with a nominal conductor diameter up to and including 0,100 mm		N/A
U.2.2.1.2	Wires with a nominal conductor diameter over 0,100 mm up to and including 2,500 mm		N/A
U.2.2.1.3	Wires with a nominal conductor diameter over 2,500 mm		N/A
U.2.2.2	Square or rectangular wires		N/A
U.2.3	Flexibility and adherence		N/A
U.2.4	Heat shock		N/A
U.2.5	Retention of electric strength after bending		N/A
U.3	Testing during manufacturing		N/A
U.3.1	General		N/A
U.3.2	Routine test		N/A
U.3.3	Sampling test		N/A
<b>V</b>	<b>ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)</b>		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A
<b>W</b>	<b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
<b>X</b>	<b>ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)</b>		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
<b>Y</b>	<b>ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)</b>		N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
Y.1	Test apparatus :		N/A
Y.2	Mounting of test samples :		N/A
Y.3	Carbon-arc light-exposure apparatus :		N/A
Y.4	Xenon-arc light exposure apparatus :		N/A
<b>Z</b>	<b>ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)</b>		N/A
<b>AA</b>	<b>ANNEX AA, MANDREL TEST (see 2.10.5.8)</b>		N/A
<b>BB</b>	<b>ANNEX BB, CHANGES IN THE SECOND EDITION</b>		—
<b>CC</b>	<b>ANNEX CC, Evaluation of integrated circuit (IC) current limiters</b>		N/A
CC.1	General		N/A
CC.2	Test program 1:		N/A
CC.3	Test program 2.:		N/A
CC.4	Test program 3		N/A
CC.5	Compliance		N/A
<b>DD</b>	<b>ANNEX DD, Requirements for the mounting means of rack-mounted equipment</b>		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N:		N/A
DD.3	Mechanical strength test, 250N, including end stops:		N/A
DD.4	Compliance:		N/A
<b>EE</b>	<b>ANNEX EE, Household and home/office document/media shredders</b>		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols:		N/A
	Information of user instructions, maintenance and/or servicing instructions:		N/A
EE.3	Inadvertent reactivation test:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A) :		N/A
	Test with wedge probe (Figure EE1 and EE2) :		N/A


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Clause	Requirement - Test	Result-Remark	Verdict

**EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS**

Contents (A2:2013)	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
General	Delete all the "country" notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2      1.5.1 Note 2 & 3      1.5.7.1 Note 1.5.8 Note 2      1.5.9.4 Note      1.7.2.1 Note 4, 5 & 6 2.2.3 Note      2.2.4 Note      2.3.2 Note 2.3.2.1 Note 2      2.3.4 Note 2      2.6.3.3 Note 2 & 3 2.7.1 Note      2.10.3.2 Note 2      2.10.5.13 Note 3 3.2.1.1 Note      3.2.4 Note 3.      2.5.1 Note 2 4.3.6 Note 1 & 2      4.7 Note 4      4.7.2.2 Note 4.7.3.1 Note 2      5.1.7.1 Note 3 & 4      5.3.7 Note 1 6 Note 2 & 5      6.1.2.1 Note 2      6.1.2.2 Note 6.2.2 Note      6.2.2.1 Note 2      6.2.2.2 Note 7.1 Note 3      7.2 Note      7.3 Note 1 & 2 G.2.1 Note 2      Annex H Note 2		P
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note      6.1.2.1 Note      2.6.2.2.1 Note 2      EE.3 Note		P
General (A2:2013)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 2.7.1 Note*      6.1.2.1 Note 2 6.2.2 Note 2 * Note of secretary : Text of Common Modification remains unchanged.		P
1.1.1 (A1:2010)	Replace the text of NOTE 3 by the following NOTE3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		N/A
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
(A12:2011 )	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		P
1.5.1	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC		P
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
1.7.2.1 (A12:2011 )	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.		N/A
	<b>Zx Protection against excessive sound pressure from personal music players</b>		N/A
	<b>Zx.1 General</b> This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: is designed to allow the user to listen to recorded or broadcast sound or video; and primarily uses headphones or earphones that can be worn in or on or around the ears; and allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: while the personal music player is connected to an external amplifier; or while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		N/A
	<b>Zx.2 Equipment requirements</b>		N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
	<p>No safety provision is required for equipment that complies with the following:</p> <p>equipment provided as a package (personal music player with its listening device), where the acoustic output LAeq,T is <math>\leq 85</math> dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is <math>\leq 27</math> mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1.</p> <p>NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level LAeq,T is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <p>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</p> <p>b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and</p> <p>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <p>1) equipment provided as a package (player with its listening device), the acoustic output shall be <math>\leq 100</math> dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and</p> <p>2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be <math>\leq 150</math> mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1.</p> <p>For music where the average sound pressure (long term LAeq,T) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term LAeq,T) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA.</p> <p>For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.</p>		
	<b>Zx.3 Warning</b>		N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
	<p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <p style="padding-left: 40px;">the symbol of Figure 1 with a minimum height of 5 mm; and</p> <p style="padding-left: 40px;">the following wording, or similar:</p> <p>“To prevent possible hearing damage, do not listen at high volume levels for long periods.”</p> <div style="text-align: center;">  </div> <p style="text-align: center;"><b>Figure 1 – Warning label (IEC 60417-6044)</b></p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>		
	<b>Zx.4 Requirements for listening devices (headphones and earphones)</b>		N/A
	<p><b>Zx.4.1 Wired listening devices with analogue input</b></p> <p>With 94 dBA sound pressure output LAeq,T, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be <math>\geq 75</math> mV.</p> <p>This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control).</p> <p>NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p>		N/A
	<p><b>Zx.4.2 Wired listening devices with digital input</b></p> <p>With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output LAeq,T of the listening device shall be <math>\leq 100</math> dBA.</p> <p>This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p>		N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
	<p><b>Zx.4.3 Wireless listening devices</b></p> <p>In wireless mode:</p> <ul style="list-style-type: none"> <li>with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and</li> <li>respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and</li> <li>with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA.</li> </ul> <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>		N/A
	<p><b>Zx.5 Measurement methods</b></p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>		N/A
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <ul style="list-style-type: none"> <li>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</li> <li>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</li> <li>c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</li> </ul> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		N/A
2.7.2	This subclause has been declared 'void'.		N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A
3.2.5.1	<p>Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following:</p> <p>Up to and including 6   0,75<sup>a)</sup>   Over 6 up to and including 10   (0,75)<sup>b)</sup> 1,0   Over 10 up to and including 16   (1,0)<sup>c)</sup> 1,5  </p> <p>In the conditions applicable to Table 3B delete the words "in some countries" in condition<sup>a)</sup>.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>		N/A
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		N/A



IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16   1,5 to 2,5   1,5 to 4   Delete the fifth line: conductor sizes for 13 to 16 A		N/A
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).		N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.		N/A
Bibliography	Additional EN standards.		N/A

<b>ZA</b>	<b>NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS</b>	—
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ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)		
Clause	Requirement + Test	Verdict
1.2.4.1	In <b>Denmark</b> , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	N/A
1.2.13.14 (A11:2009)	In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.7.2.1 and 7.3 of this annex.	N/A
1.5.7.1 (A11:2009)	In <b>Finland</b> , <b>Norway</b> and <b>Sweden</b> , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	N/A
1.5.8	In <b>Norway</b> , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	N/A
1.5.9.4	In <b>Finland</b> , <b>Norway</b> and <b>Sweden</b> , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
1.7.2.1 (A11:2009)	<p>In <b>Denmark, Finland, Norway and Sweden</b>, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:            In <b>Denmark</b>: "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord."            In <b>Finland</b>: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"            In <b>Norway</b>: "Apparatet må tilkoples jordet stikkontakt"            In <b>Sweden</b>: "Apparaten skall anslutas till jordat uttag"</p> <p>In <b>Norway and Sweden</b>, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>"Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p> <p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):            "Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkople            utstyr – og er tilkople et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet."            Translation to Swedish:            "Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet."</p>		N/A
1.7.2.1 (A2:2013)	<p>In <b>Denmark</b>, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in <b>Denmark</b> shall be as follows:            In <b>Denmark</b>: "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord."</p>		N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
1.7.5	<p>In <b>Denmark</b>, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011.</p> <p>For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c,DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c,DK 1-1d or DK 1-5a.Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b.</p> <p><i>Justification</i> the Heavy Current Regulations, 6c</p>		N/A
1.7.5 (A2:2013)	<p>In <b>Denmark</b>, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011.For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c,DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b,DK 1-1c, DK 1-1d or DK 1-5a. Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b.</p> <p><i>Justification</i> the Heavy Current Regulations, 6c</p>		N/A
2.2.4	In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.2	In <b>Finland, Norway and Sweden</b> there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.6.3.3	In the <b>United Kingdom</b> , the current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	In the <b>United Kingdom</b> , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		N/A
2.10.5.13	In <b>Finland, Norway and Sweden</b> , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A
3.2.1.1	<p>In <b>Switzerland</b>, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A</p> <p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998:Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A</p>		N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
3.2.1.1	In <b>Denmark</b> , supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a polyphase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. <i>Justification</i> the Heavy Current Regulations, 6c		N/A
3.2.1.1 (A2:2013)	In <b>Denmark</b> , supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. <i>Justification</i> the Heavy Current Regulations, 6c		N/A
3.2.1.1	In <b>Spain</b> , supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.		N/A
3.2.1.1	In the <b>United Kingdom</b> , apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
3.2.1.1	In <b>Ireland</b> , apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		N/A
3.2.4	In <b>Switzerland</b> , for requirements see 3.2.1.1 of this annex.		N/A
3.2.5.1	In the <b>United Kingdom</b> , a power supply cord with conductor of 1,25 mm <sup>2</sup> is allowed for equipment with a rated current over 10 A and up to and including 13 A.		N/A
3.3.4	In the <b>United Kingdom</b> , the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm <sup>2</sup> to 1,5 mm <sup>2</sup> nominal cross-sectional area.		N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
4.3.6	In the <b>United Kingdom</b> , the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
4.3.6	In <b>Ireland</b> , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A
5.1.7.1	In <b>Finland, Norway and Sweden</b> TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: <ul style="list-style-type: none"> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON;</li> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE B;</li> <li>• STATIONARY PERMANENTLY CONNECTED EQUIPMENT.</li> </ul>		N/A

IEC/EN 60950-1			
Clause	Requirement - Test	Result-Remark	Verdict
6.1.2.1 (A1:2010)	<p>In <b>Finland, Norway and Sweden</b>, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> <li>- passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and</li> <li>- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul> <p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>-the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1;</li> <li>-the additional testing shall be performed on all the test specimens as described in EN 60384-14;</li> <li>-the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</li> </ul>		N/A
6.1.2.2	<p>In <b>Finland, Norway and Sweden</b>, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.</p>		N/A
7.2	<p>In <b>Finland, Norway and Sweden</b>, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>		N/A
7.3 (A11:2009)	<p>In <b>Norway and Sweden</b>, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.</p>		N/A
7.3	<p>In <b>Norway</b>, for installation conditions see EN 60728-11:2005.</p>		N/A

1.5.1 TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
PCB	Interchangeable	Interchangeable	V-1 ot better , thickness 1.0mm	UL 796	UL
Plastic enclosure	Interchangeable	Interchangeable	HB or better	UL94	--
Coin battery	Interchangeable	CR2032	3 V	UL 1642	UL
Supplementary information:--					

1.6.2 TABLE: Electrical data (in normal conditions)						P
U (Vdc)	I (mA)	Irated (A)	P (mW)	Fuse #	Ifuse (A)	Condition/status
3.0	—	28.17	84.51	—	—	S22AXX (CR2032)
3.0	—	44.32	132.96	—	—	M07AXX(AAA*2)
Supplementary information: for reference						

4.5 TABLE: Thermal requirements						P
Ambient Tmin (°C) :		See below				—
Ambient Tmax (°C) :		See below				—
Supply voltage (V) :		3.0		--		—
Thermal couple number	Maximum measured temperature T of part/at:	T (°C)		T (°C)		Allowed Tmax (°C)
		tm	tc	tm	tc	
001	U5(S22AXX)	24.0	41.3	--	--	105
002	PCB near U5(S22AXX)	23.7	41.0	--	--	105
003	Enclosure outside near battery(S22AXX)	23.1	40.4	--	--	75
004	U1(M07AXX)	25.4	42.7	--	--	105
005	PCB near U1(M07AXX)	25.2	42.5	--	--	105
007	Enclosure outside near battery(M07AXX)	23.9	41.2	--	--	75
008	button(M07AXX)	24.6	41.9	--	--	75
030	Ambient temperature	22.7	40.0	--	--	--
<p>Comments: The temperatures were measured by thermal couple (type T) method under normal mode defined in 1.4.3 and as described in 1.6.2 at voltage described in 1.4.5. The worse case normal mode is defined with max. Load of the equipment.</p> <p>With max. Ambient temperature specified as 40 °C, therefore, the maximum temperature rise is calculated as follows:</p> <p>Unit:            Allowed T max(° C) &gt; (T max +Tabm-Tma)            Tmax.: The teperature of the given part measured under the prescribed test conditions;            Tamb.: The ambient temperature during test ;            Tma : The maximum ambient temperature permitted by the manufacturer's specification            When no class of flammability is given, min PCB : 105 °C</p>						
Temperature T of winding:		R1 (Ω)	R2 (Ω)	T (° C)	Allowed Tmax (° C)	Insulation class
No used resistance method		--	--	--	--	--

5.3		Fault condition tests				P
Ambient temperature (°C) :					See observation	
Power source for EUT: Manufacturer, model/type, output rating :					See appended table 1.5.1	
Component No.	Fault	Supply voltage (Vd.c.)	Test time (min)	Test current(A)	Observation	
Battery (S22AXX)	Installed- reverse	3.0	10	--	No equipment was damages, no connect two poles, no hazard	
Battery (M07AXX)	Installed- reverse	3.0	10	--	No equipment was damages, no connect two poles, no hazard	

Test equipment list						
Code No.	Test equipment	Mode No.	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
WTS-SF-004	Hybrid Recorder Channel No. 30 CH101~130 20°C 35°C 50°C 125°C 150°C	DR232-02-00-1D (DR 230)	91KC39010	Yokogawa	2018/4/13	2019/4/12
WTS-SF-005	Power Analyzer 600V /50A (ac/dc)/DC ~ 100kHz	CP-600	660480	iDRC	2018/4/13	2019/4/12
WTS-SF-056	Electronic scale 5g~150kg max	SKW-II	2011110275	三和	2017/5/12	2018/5/11
WTS-SF-075	電子秤 Electronic scale 2g~6kg max	AQM-6000	AQM-C-112	UWE	2017/5/12	2018/5/11
WTS-SF-065	捲尺 Measuring Tape/ 8 m max.	8m	04093-1	KING LIFE	2015/5/15	2018/5/14