

Accredited testing laboratory



DAR-Registrierungsnummer :
DAT-P-176/94-D1

TEST REPORT	
IEC 60950-1 and/or EN 60950-1, First Edition	
Information technology equipment – Safety –	
Part 1: General requirements	
Report reference No	3-4952-1-2/06-D
Tested by (printed name and signature)	Sébastien Scheidler
Approved by (printed name and signature)	Gerhard Rech
Date of issue	17.01.2007
Testing Laboratory Name	CETECOM ICT Services GmbH
Address	Untertürkheimerstr. 6-10 D-66117 Saarbrücken
Testing location	Same as above
Address	
Applicant's Name	Cycle Parts GmbH
Address	Grosse Ahlmühle 33, 76865 Rohrbach, Germany
Test specification	
Standard	IEC 60950-1:2001 and/or EN 60950-1:2001, First Edition + A11:2004
Test procedure	CE, AA WC 34
Non-standard test method	None
Test Item	A8
Test result	The test item passed!

Test Report Form No	IECEN60950_1A
TRF originator	SGS Fimko Ltd
Master TRF	dated 2002-03
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Test item description: Wired bike computer
Trademark: VDO
Manufacturer: Same as applicant
Serial number: --
Rating(s) EUT: 3Vdc (CR2032)

Copy of name plates EUT:



General product information

A8:
Wired bike computer

Summary of testing:

Particulars: test item vs. test requirements	
Class of equipment	Class III
Overvoltage category.....	--
Rated input voltage and current.....	3Vdc (CR2032)
Rated output voltage and current	--
Mains supply tolerance (%)	±10%
Tested for IT power systems	No
IT testing, phase-phase voltage (V) :	--
Rated atmospheric humidity	--
Rated temperature range.....	-15 °C – 60 °C
Equipment mobility	Fixed
Accessibility	Operator access area
Operating condition.....	continuous
Mass of equipment	23.6g (with battery)
Protection against ingress of water	--
Enclosure	No safety relevant function
National deviations assessed for	Austria/Denmark/France/Finland/Germany/Sweden/ Switzerland/Norway/United Kingdom
Operation height over sea:	2000m
Insulation	Functional insulation in secondary SELV circuits
Test case verdicts	
Test case does not apply to the test object	N/A
Test item does meet the requirement	P(ass)
Test item does not meet the requirement	F(ail)
Testing	
Date of receipt of test item	15.01.2007
Date(s) of performance of test	16.01.2007

General remarks

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

The test result presented in this report relate only to the object(s) tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a comma (point) is used as the decimal separator.

The present Test Report is not valid as a Test Report according to a Mutual Recognition Agreement (i.e.IECEE-CB, CCA, ENEC, KEYMARK...) unless appended to a corresponding Certificate issued by a National Certification Body, signatory to the relevant Schema.

The following abbreviations were used in this test report:



AC	:	Alternating Current
DC	:	Direct Current
PE	:	Protective earth
PRI	:	Primary circuit
SEC	:	Secondary circuit
PS	:	Power Supply
GND	:	Ground
PCB	:	Printed circuit board
EUT	:	Equipment under test
BATT	:	Battery


IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:

1	GENERAL		P
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	Components used in accordance with their ratings	P
1.5.3	Thermal controls	No thermal controls	N
1.5.4	Transformers	No transformers	N
1.5.5	Interconnecting cables	No cables	N
1.5.6	Capacitors in primary circuits	Class III equipment	N
1.5.7	Double insulation or reinforced insulation bridged by components	No double or reinforced insulation	N
1.5.7.1	General		N
1.5.7.2	Bridging capacitors		N
1.5.7.3	Bridging resistors		N
1.5.7.4	Accessible parts		N
1.5.8	Components in equipment for IT power systems	Class III equipment	N

1.6	Power interface		P
1.6.1	AC power distribution systems		P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	No hand-held equipment	N
1.6.4	Neutral conductor		N

1.7	Marking and instructions	See "Copy of name plates"	P
1.7.1	Power rating		N
	Rated voltage(s) or voltage range(s)		N
	Symbol for nature of supply, for DC. only		N
	Rated frequency or rated frequency range (Hz) ..		N
	Rated current (mA or A)		N
	Rated power		N
	Manufacturer's name or trademark or identification mark		P
	Type/model or type reference.....		P
	Symbol for Class II equipment only	<input type="checkbox"/>	N

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
	Other symbols		N
	Certification marks	CE	P
1.7.2	Safety instructions	Adequate safety instructions provided	P
1.7.3	Short duty cycles	For continuous operation	N
1.7.4	Supply voltage adjustment	No adjustment	N
1.7.5	Power outlets on the equipment	No power outlets	N
1.7.6	Fuse identification		N
1.7.7	Wiring terminals	No wiring terminals	N
1.7.7.1	Protective earthing and bonding terminals	Class III equipment	N
1.7.7.2	Terminal for AC. mains supply conductors	No terminals	N
1.7.7.3	Terminals for DC. mains supply conductors		N
1.7.8	Controls and indicators	No safety relevant controls and indicators	N
1.7.8.1	Identification, location and marking		N
1.7.8.2	Colours		N
1.7.8.3	Symbols according to IEC 60417		P
	CE sign		P
	for "ON" (60417-1-IEC-5007)	--	N
	○ for "OFF" (60417-1-IEC-5008)	--	N
	⓪ push-push (60417-1-IEC-5010)		N
	Ⓜ stand-by (60417-1-IEC-5009)	--	N
	 (ISO 3864, No. 5036)	--	N
	— (direct current, IEC 60417, 417-IEC-5031-a)		N
	~ (single phase, IEC 60417, 417-IEC-5032-a) (230V~): Power indication		N
	3 ~ (three phase IEC 60417, 417-IEC-5032-a)		N
	3N ~ (three phase with neutral, IEC 60417, 417-IEC-5032-a)		N
	Ⓜ (Class II equipment, IEC 60417, 417-IEC-5172-a): On the bottom	--	N
	Ⓜ (protection, IEC 60417, 417-IEC-5016-a)	--	N
	Ⓜ (connector, holder or core, IEC 60417, 417-IEC-5020-a)	--	N
	Ⓜ (protective earth, IEC 60417, 417-IEC-5019-a)	--	N
	Ⓜ (insulation transformers, IEC 60417, 417-IEC-5221)	--	N

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
	 Short circuit protected transformer IEC 60417, 417-IEC-5220-a	--	N
1.7.8.4	Markings using figures	See above	P
1.7.9	Isolation of multiple power sources	One power source only	N
1.7.10	IT power distribution systems	Class III equipment	N
1.7.11	Thermostats and other regulating devices	No thermostats and regulating devices	N
1.7.12	Language (safety relevant instructions and markings).....	Safety relevant instructions must be translated into the language of destination	P
1.7.13	Durability - <u>Water (Test time: 15 s):</u> - Marking - Housing/enclosure	Name plate	P
	<u>Hexane (CH₃(CH₂)₄CH₃ M = 86.18g/mol, dry point 65-69°C) (Test time:15 s):</u> - Marking - Housing/enclosure	Name plate	P
1.7.14	Removable parts	Marking not on removable parts	P
1.7.15	Replaceable batteries	Replacement by incorrect type not possible	P
	Language.....		—
1.7.16	Operator access with a tool	No operator access with tools	N
1.7.17	Equipment for restricted access locations.....	Not for restricted access locations	N

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	SELV circuits only	P
2.1.1.1	Access to energized parts	Access to SELV circuits only	P
	Test by inspection	SELV circuits only	P
	Test with test finger		N
	Test with test pin		N
	Test with test probe		N
2.1.1.2	Battery compartments	No TNV circuits	N
2.1.1.3	Access to ELV wiring		N
	Working voltage (V); minimum distance (mm) through insulation	(see appended table 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage	N
2.1.1.5	Energy hazards	No energy hazards	N
2.1.1.6	Manual controls	No manual controls	N

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
2.1.1.7	Discharge of capacitors in equipment		N
	Time-constant (s); measured voltage (V).....:		—
2.1.2	Protection in service access areas	SELV circuit	N
2.1.3	Protection in restricted access locations	Not for restricted access location	N

2.2	SELV circuits		P
2.2.1	General requirements		P
2.2.2	Voltages under normal conditions (V)	3Vdc	P
2.2.3	Voltages under fault conditions (V).....:	No voltages exceed SELV limits	P
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)		N
2.2.3.2	Separation by earthed screen (method 2)		N
2.2.3.3	Protection by earthing of the SELV circuit (method 3)		N
2.2.4	Connection of SELV circuits to other circuits	SELV to SELV circuits	P

2.3	TNV circuits	No TNV circuits	N
2.3.1	Limits	No TNV circuits (see appended table 2.3)	N
	Type of TNV circuits		—
2.3.2	Separation from other circuits and from accessible parts		N
	Insulation employed.....:		—
2.3.3	Separation from hazardous voltages		N
	Insulation employed.....:		—
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed.....:		—
2.3.5	Test for operating voltages generated externally		N

2.4	Limited current circuits	No limited current circuits	N
2.4.1	General requirements	No limited current circuits	N
2.4.2	Limit values	(see appended table 2.4)	N
	Frequency (Hz)		—
	Measured current (mA)		—
	Measured voltage (V)		—
	Measured capacitance (µF).....:		—
2.4.3	Connection of limited current circuits to other circuits	No limited current circuits	N

IEC 60 950-1 / EN 60950-1 + A11:2004

Cl.:	Requirement – Test:	Result:	Verdict:
2.5	Limited power sources		N
	Inherently limited output	--	N
	Impedance limited output	--	N
	Overcurrent protective device limited output	--	N
	Regulating network limited output under normal operating and single fault condition	--	N
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition	--	N
	Output voltage (V), output current (A), apparent power (VA)..... :	(see appended table 2.5)	—
	Current rating of overcurrent protective device (A)	--	—

2.6	Provisions for earthing and bonding		N
2.6.1	Protective earthing	No earthing	N
2.6.2	Functional earthing	No earthing; (see appended table 2.5)	N
2.6.3	Protective earthing and protective bonding conductors	No earthing	N
2.6.3.1	General		N
2.6.3.2	Size of protective earthing conductors		N
	Rated current (A), cross-sectional area (mm ²), AWG..... :		—
2.6.3.3	Size of protective bonding conductors		N
	Rated current (A), cross-sectional area (mm ²), AWG..... :		—
2.6.3.4	Resistance (Ω) of earthing conductors and their terminations, test current (A)..... :		N
2.6.3.5	Colour of insulation..... :		N
2.6.4	Terminals	No earthing	N
2.6.4.1	General		N
2.6.4.2	Protective earthing and bonding terminals		N
	Rated current (A), type and nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N
2.6.5	Integrity of protective earthing	No earthing	N
2.6.5.1	Interconnection of equipment		N
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
2.6.5.3	Disconnection of protective earth		N
2.6.5.4	Parts that can be removed by an operator		N
2.6.5.5	Parts removed during servicing		N
2.6.5.6	Corrosion resistance		N
2.6.5.7	Screws for protective bonding		N
2.6.5.8	Reliance on telecommunication network or cable distribution system		N

2.7	Overcurrent and earth fault protection in primary circuits		N
2.7.1	Basic requirements	Class III equipment	N
	Instructions when protection relies on building installation		N
2.7.2	Faults not covered in 5.3		N
2.7.3	Short-circuit backup protection		N
2.7.4	Number and location of protective devices		N
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel.....		N

2.8	Safety interlocks		N
2.8.1	General principles	No safety interlocks	N
2.8.2	Protection requirements	No safety interlocks	N
2.8.3	Inadvertent reactivation	No safety interlocks	N
2.8.4	Fail-safe operation	No safety interlocks	N
2.8.5	Moving parts	No safety interlocks	N
2.8.6	Overriding	No safety interlocks	N
2.8.7	Switches and relays	No safety interlocks	N
2.8.7.1	Contact gaps (mm)		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N
2.8.7.4	Electric strength test	(see appended table 5.2)	N
2.8.8	Mechanical actuators	No safety interlocks	N

2.9	Electrical insulation		P
2.9.1	Properties of insulating materials	Neither natural rubber, materials containing asbestos no hygroscopic material are used as insulation	P
2.9.2	Humidity conditioning	Not required	N
	Humidity (%)		—

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
	Temperature (°C)		—
2.9.3	Grade of insulation	Functional insulation	P

2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General	For functional insulation creepage distances and clearances smaller than those specified in clause 2.10 are permitted subject to the requirements of clause 5.3.4 b) or 5.3.4 c)	P
2.10.2	Determination of working voltage	The requirements are applied for the determination of the working voltage:3Vdc	P
2.10.3	Clearances		P
2.10.3.1	General		P
2.10.3.2	Clearances in primary circuit	(see appended table 2.10.3 and 2.10.4)	N
2.10.3.3	Clearances in secondary circuits	See clause 2.10.1 (see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Measurement of transient voltage levels		N
2.10.4	Creepage distances	See clause 2.10.1 (see appended table 2.10.3 and 2.10.4)	P
	CTI tests	Not required	—
2.10.5	Solid insulation	No requirements for functional insulation	N
2.10.5.1	Minimum distance through insulation	(see appended table 2.10.5)	N
2.10.5.2	Thin sheet material		N
	Number of layers (pcs)		—
	Electric strength test	(see appended table 5.2)	—
2.10.5.3	Printed boards	Function insulation in SELV circuits only	N
	Distance through insulation		N
	Electric strength test for thin sheet insulating material	(see appended table 5.2)	—
	Number of layers (pcs)		N
2.10.5.4	Wound components		N
	Number of layers (pcs)		N
	Two wires in contact inside wound component; angle between 45° and 90°		N

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
2.10.6	Coated printed boards	No special coating in order to reduce distances	N
2.10.6.1	General		N
2.10.6.2	Sample preparation and preliminary inspection		N
2.10.6.3	Thermal cycling		N
2.10.6.4	Thermal ageing (°C) :		N
2.10.6.5	Electric strength test	(see appended table 5.2)	—
2.10.6.6	Abrasion resistance test		N
	Electric strength test	(see appended table 5.2)	—
2.10.7	Enclosed and sealed parts :		N
	Temperature $T_1=T_2 = T_{ma} - T_{amb} + 10K$ (°C) :		N
2.10.8	Spacings filled by insulating compound..... :	No spacings filled by insulating compound	N
	Electric strength test	(see appended table 5.2)	—
2.10.9	Component external terminations		N
2.10.10	Insulation with varying dimensions		N

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on PCB tracks	P
3.1.2	Protection against mechanical damage	Wire ways are smooth and free from edges	P
3.1.3	Securing of internal wiring	No wiring	N
3.1.4	Insulation of conductors	No wiring (see appended table 5.2)	N
3.1.5	Beads and ceramic insulators	Not used	N
3.1.6	Screws for electrical contact pressure	No electrical screw connection	N
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material	N
3.1.8	Self-tapping and spaced thread screws	No electrical screw connection	N
3.1.9	Termination of conductors	No wiring	N
	10 N pull test		N
3.1.10	Sleeving on wiring	No sleeveings	N

3.2	Connection to an AC mains supply or a DC mains supply		N
3.2.1	Means of connection :		N
3.2.1.1	Connection to an AC mains supply	No connection to AC mains	N
3.2.1.2	Connection to a DC mains supply	No connection to DC mains	N

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
3.2.2	Multiple supply connections	One supply connection	N
3.2.3	Permanently connected equipment	Not permanently connected	N
	Number of conductors, diameter (mm) of cable and conduits		—
3.2.4	Appliance inlets	No appliance inlets	N
3.2.5	Power supply cords	No power supply cord	N
3.2.5.1	AC power supply cords		N
	Type.....		—
	Rated current (A), cross-sectional area (mm ²), AWG.....		—
3.2.5.2	DC power supply cords	No power supply cord	N
3.2.6	Cord anchorages and strain relief		N
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage	Supply cord not exposed to sharp points or cutting edges	N
3.2.8	Cord guards		N
	D (mm); test mass (g)		—
	Radius of curvature of cord (mm).....		—
3.2.9	Supply wiring space		N

3.3	Wiring terminals for connection of external conductors		N
3.3.1	Wiring terminals	No wiring terminals	N
3.3.2	Connection of non-detachable power supply cords	No wiring terminals	N
3.3.3	Screw terminals	No wiring terminals	N
3.3.4	Conductor sizes to be connected	No wiring terminals	N
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes	No wiring terminals	N
	Rated current (A), type and nominal thread diameter (mm)		—
3.3.6	Wiring terminals design	No wiring terminals	N
3.3.7	Grouping of wiring terminals	No wiring terminals	N
3.3.8	Stranded wire	No wiring terminals	N

3.4	Disconnection from the mains supply		N
3.4.1	General requirement		N
3.4.2	Disconnect devices		N

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
3.4.3	Permanently connected equipment	Not permanently connected	N
3.4.4	Parts which remain energized	No parts which remain energized	N
3.4.5	Switches in flexible cords	No switches	N
3.4.6	Single-phase equipment and DC. equipment		N
3.4.7	Three-phase equipment	Single phase equipment	N
3.4.8	Switches as disconnect devices	Not used	N
3.4.9	Plugs as disconnect devices	EUT is for direct plug-in	P
3.4.10	Interconnected equipment	No interconnection	N
3.4.11	Multiple power sources	One power source only	P

3.5	Interconnection of equipment		P
3.5.1	General requirements	SELV	P
3.5.2	Types of interconnection circuits	SELV to SELV	P
3.5.3	ELV circuits as interconnection circuits	No ELV circuits	N

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		N
	Angle of 10°	Hand-held equipment	N
	Test: force (N)		N

4.2	Mechanical strength		P
4.2.1	General	See 4.2.2 - 4.2.10	P
4.2.2	Steady force test, 10 N	Applied	P
4.2.3	Steady force test, 30 N	Applied to battery compartment	P
4.2.4	Steady force test, 250 N	Subjected to enclosure	P
4.2.5	Impact test	No hazardous parts	N
	Fall test		N
	Swing test		N
4.2.6	Drop test	No hazardous parts	N
4.2.7	Stress relief test	No hazardous parts	N
4.2.8	Cathode ray tubes	No cathode ray tubes	N
	Picture tube separately certified	(see separate test report or attached certificate)	N
4.2.9	High pressure lamps	No high pressure lamps	N
4.2.10	Wall or ceiling mounted equipment; force (N)	No wall or ceiling mounted equipment	N

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
4.3	Design and construction		P
4.3.1	Edges and corners	Rounded or smoothed	P
4.3.2	Handles and manual controls; force (N)..... :	Handles and manual controls not safety relevant	P
4.3.3	Adjustable controls	No adjustable controls	N
4.3.4	Securing of parts	No loosening of parts which could create any hazard is likely to occur	P
4.3.5	Connection of plugs and sockets	IEC 60083 and IEC 60320 connectors not in SELV, ELV and TNV-Circuits	P
4.3.6	Direct plug-in equipment	No direct plug-in equipment	N
	Dimensions (mm) of mains plug for direct plug-in		N
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N)		N
4.3.7	Heating elements in earthed equipment	No heating elements	N
4.3.8	Batteries	Reverse polarity installation does not cause any hazard (no contact)	P
4.3.9	Oil and grease	No exposure to oil or grease	N
4.3.10	Dust, powders, liquids and gases	Not produced	N
4.3.11	Containers for liquids or gases	No liquids or gases in the EUT	N
4.3.12	Flammable liquids	No flammable liquids	N
	Quantity of liquid (l)..... :		N
	Flash point (°C)..... :		N
4.3.13	Radiation; type of radiation	See 4.3.13.5	P
4.3.13.1	General		N
4.3.13.2	Ionizing radiation	No ionizing radiation	N
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No ultraviolet (UV) radiation	N
	Part, property, retention after test, flammability classification		N
4.3.13.4	Human exposure to ultraviolet (UV) radiation	No ultraviolet (UV) radiation	N
4.3.13.5	Laser (including LEDs)	No laser, LED for function indication, IR interface approved (see appended table 1.5)	P
	Laser class		—

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
4.3.13.6	Other types	No other radiation	N

4.4	Protection against hazardous moving parts		N
4.4.1	General	No moving parts	N
4.4.2	Protection in operator access areas		N
4.4.3	Protection in restricted access locations		N
4.4.4	Protection in service access areas		N

4.5	Thermal requirements		P
4.5.1	Maximum temperatures	(see appended table 4.5)	P
	Normal load condition per Annex L	L.7	P
4.5.2	Resistance to abnormal heat	No such parts	N

4.6	Openings in enclosures		N
4.6.1	Top and side openings	No openings	N
	Dimensions (mm)		—
4.6.2	Bottoms of fire enclosures	No openings in bottom of fire enclosure	N
	Construction of the bottom		—
4.6.3	Doors or covers in fire enclosures	No doors	N
4.6.4	Openings in transportable equipment	No transportable equipment	N
4.6.5	Adhesives for constructional purposes	No adhesives used in construction	N
	Conditioning temperature (°C)/time (weeks)		—

4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	(see appended table 4.7)	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests		N
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure	No fire enclosure required	N

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
4.7.2.2	Parts not requiring a fire enclosure	Parts not requiring a fire enclosure: other components in secondary circuits supplied by limited power sources complying with 2.5 and mounted on materials of flammability class V-1	P
4.7.3	Materials		P
4.7.3.1	General	(see appended table 4.7)	P
4.7.3.2	Materials for fire enclosures	(see appended table 4.7)	N
4.7.3.3	Materials for components and other parts outside fire enclosures		N
4.7.3.4	Materials for components and other parts inside fire enclosures	(see appended table 4.7)	N
4.7.3.5	Materials for air filter assemblies	No air filter	N
4.7.3.6	Materials used in high-voltage components	No high-voltage components	N

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		N
5.1.1	General	(see appended table 5.1)	N
5.1.2	Equipment under test (EUT)		N
5.1.3	Test circuit	Picture 5A	N
5.1.4	Application of measuring instrument	D.1	N
5.1.5	Test procedure	Class III equipment	N
5.1.6	Test measurements	(see appended table 5.1)	N
	Test 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	Class III equipment	N
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks	No connection to telecommunication networks	N
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system	No connection to telecommunication networks	N
	Test voltage (V)		—
	Measured touch current (mA)		—

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks	No connection to telecommunication networks	N

5.2	Electric strength		N
5.2.1	General	(see appended table 5.2)	N
5.2.2	Test procedure	(see appended table 5.2)	N

5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	(see appended Annex B)	N
5.3.3	Transformers	No transformers (see appended Annex C)	N
5.3.4	Functional insulation	Can be short circuit.	P
5.3.5	Electromechanical components	No electromechanical components	N
5.3.6	Simulation of faults	(see appended table 5.3)	P
5.3.7	Unattended equipment	No temperature control devices	N
5.3.8	Compliance criteria for abnormal operating and fault conditions	No fire, the equipment does not emit molten metal, enclosure not deformed	P

6	CONNECTION TO TELECOMMUNICATION NETWORKS		N
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N
6.1.1	Protection from hazardous voltages		N
6.1.2	Separation of the telecommunication network from earth		N
6.1.2.1	Requirements	No connection to telecommunication networks	N
	Test voltage (V)		—
	Current in the test circuit (mA)		—
6.1.2.2	Exclusions		N

6.2	Protection of equipment users from overvoltages on telecommunication networks		N
6.2.1	Separation requirements	No connection to telecommunication networks	N
6.2.2	Electric strength test procedure		N
6.2.2.1	Impulse test	(see appended table 6.1 6.2)	N

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
6.2.2.2	Steady-state test	(see appended table 6.1 6.2)	N
6.2.2.3	Compliance criteria		N

6.3	Protection of the telecommunication wiring system from overheating		N
	Max. output current (A).....:	(see appended table 6.3)	—
	Current limiting method	(see appended table 6.3)	—

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N
7.1	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment	No cable distribution system	N
7.2	Protection of equipment users from overvoltages on the cable distribution system		N
7.3	Insulation between primary circuits and cable distribution systems		N
7.3.1	General		N
7.3.2	Voltage surge test	(see appended table 7.3.2)	N
7.3.3	Impulse test	(see appended table 7.3.3)	N

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N
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.1.1	Samples.....:	Approved material used only	—
	Wall thickness (mm).....:		—
A.1.2	Conditioning of samples; temperature (°C)		N
A.1.3	Mounting of samples		N
A.1.4	Test flame		N
A.1.5	Test procedure		N
A.1.6	Compliance criteria		N
	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.2.1	Samples, material.....:	Approved material used only	—
	Wall thickness (mm).....:		—

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
A.2.2	Conditioning of samples		N
A.2.3	Mounting of samples		N
A.2.4	Test flame		N
A.2.5	Test procedure		N
A.2.6	Compliance criteria		N
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4, 8	Approved material used only	N
	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)	Approved material used only	N
A.3.1	Mounting of samples		N
A.3.2	Test procedure		N
A.3.3	Compliance criterion		N

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N
B.1	General requirements		N
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
B.2	Test conditions		N
B.3	Maximum temperatures	(see appended table 5.3)	N
B.4	Running overload test	(see appended table 5.3)	N
B.5	Locked-rotor overload test		N
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for DC. motors in secondary circuits		N
B.7	Locked-rotor overload test for DC. motors in secondary circuits		N
B.7.1	Test procedure	(see appended table 5.3)	N
B.7.2	Alternative test procedure; test time (h)	(see appended table 5.3)	N
B.7.3	Electric strength test	(see appended table 5.2)	N

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
B.8	Test for motors with capacitors	(see appended table 5.3)	N
B.9	Test for three-phase motors	(see appended table 5.3)	N
B.10	Test for series motors		N
	Operating voltage (V)		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
	Method of protection.....		—
C.1	Overload test	(see appended table 5.3)	N
C.2	Insulation	(see appended table 5.2)	N
	Protection from displacement of windings.....		N

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS		P
D.1	Measuring instrument	Used	P
D.2	Alternative measuring instrument		N

E	ANNEX E, TEMPERATURE RISE OF A WINDING		N
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)		P
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N
G.1	Summary of the procedure for determining minimum clearances	SELV circuits only	N
G.2	Determination of mains transient voltage (V)		N
G.2.1	AC mains supply		N
G.2.2	DC mains supply		N
G.3	Determination of telecommunication network transient voltage (V)		N
G.4	Determination of required withstand voltage (V) .:		N
G.5	Measurement of transient levels (V).....		N
G.6	Determination of minimum clearances.....		N

IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
H	ANNEX H, IONIZING RADIATION (see 4.3.13)	No radiations	N
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N
	Metal used		—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)	No thermal control	N
K.1	Making and breaking capacity		N
K.2	Thermostat reliability; operating voltage (V)		N
K.3	Thermostat endurance test; operating voltage (V)		N
K.4	Temperature limiter endurance; operating voltage (V)		N
K.5	Thermal cut-out reliability		N
K.6	Stability of operation	(see appended table 5.3)	N
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)		P
L.1	Typewriters		N
L.2	Adding machines and cash registers		N
L.3	Erasers		N
L.4	Pencil sharpeners		N
L.5	Duplicators and copy machines		N
L.6	Motor-operated files		N
L.7	Other business equipment		P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N
M.1	Introduction	No TNV signal	N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringing signal		N
M.3.1.1	Frequency (Hz)		N
M.3.1.2	Voltage (V)		N
M.3.1.3	Cadence; time (s), voltage (V)		N
M.3.1.4	Single fault current (mA).....		N
M.3.2	Tripping device and monitoring voltage.....		N
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N



IEC 60 950-1 / EN 60950-1 + A11:2004			
Cl.:	Requirement – Test:	Result:	Verdict:
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V).....:		N

N	ANNEX N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)		N
N.1	ITU-T impulse test generators		N
N.2	IEC 60065 impulse test generator		N

P	ANNEX P, NORMATIVE REFERENCES		N
Q	ANNEX Q, BIBLIOGRAPHY		N
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N
R.2	Reduced clearances (see 2.10.3)		N
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N
S.1	Test equipment		N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N
		See separate test report	—

U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N
		See separate test report	—

CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001 + A11:2004)			Verdict:
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CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001 + A11:2004)			Verdict:																																																												
General	<p>C: Delete all the "country" notes in the reference document according to the following list:</p> <table border="0"> <tr> <td>1.1.5</td><td>Note 2</td><td>1.5.8</td><td>Note 2</td><td>1.6.1</td><td>Note</td> </tr> <tr> <td>1.7.2</td><td>Note 4</td><td>1.7.12</td><td>Note 2</td><td>2.6</td><td>Note</td> </tr> <tr> <td>2.2.3</td><td>Note</td><td>2.2.4</td><td>Note</td><td>2.3.2</td><td>Note 2, 7, 8</td> </tr> <tr> <td>2.3.3</td><td>Note 1, 2</td><td>2.3.4</td><td>Note 2,3</td><td>2.7.1</td><td>Note</td> </tr> <tr> <td>2.10.3.1</td><td>Note 4</td><td>3.2.1.1</td><td>Note</td><td>3.2.3</td><td>Note 1, 2</td> </tr> <tr> <td>3.2.5.1</td><td>Note 2</td><td>4.3.6</td><td>Note 1,2</td><td>4.7.2.2</td><td>Note</td> </tr> <tr> <td>4.7.3.1</td><td>Note 2</td><td>6.1.2.1</td><td>Note</td><td>6.1.2.2</td><td>Note</td> </tr> <tr> <td>6.2.2</td><td>Note</td><td>6.2.2.1</td><td>Note 2</td><td>6.2.2.2</td><td>Note</td> </tr> <tr> <td>7</td><td>Note 4</td><td>7.1</td><td>Note</td><td></td><td></td> </tr> <tr> <td>G2.1</td><td>Note 1, 2</td><td>Annex H</td><td>Note 2</td><td></td><td></td> </tr> </table>	1.1.5	Note 2	1.5.8	Note 2	1.6.1	Note	1.7.2	Note 4	1.7.12	Note 2	2.6	Note	2.2.3	Note	2.2.4	Note	2.3.2	Note 2, 7, 8	2.3.3	Note 1, 2	2.3.4	Note 2,3	2.7.1	Note	2.10.3.1	Note 4	3.2.1.1	Note	3.2.3	Note 1, 2	3.2.5.1	Note 2	4.3.6	Note 1,2	4.7.2.2	Note	4.7.3.1	Note 2	6.1.2.1	Note	6.1.2.2	Note	6.2.2	Note	6.2.2.1	Note 2	6.2.2.2	Note	7	Note 4	7.1	Note			G2.1	Note 1, 2	Annex H	Note 2			Considered	N
1.1.5	Note 2	1.5.8	Note 2	1.6.1	Note																																																										
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7	Note 4	7.1	Note																																																												
G2.1	Note 1, 2	Annex H	Note 2																																																												
1.2.4.1	S (DK): 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.	Class III equipment	N																																																												
1.5.1	A (SE, Ordinance 1990:944) and (CH, Ordinance on environmentally hazardous substances SR 814.013, Annex 3.2, Mercury): Add NOTE – Switches containing mercury such as thermostats, relays and level controllers are not allowed.	No Switches containing mercury such as thermostats, relays and level controllers	N																																																												
1.5.8	S (NO): Due to the IT power system used (see annex V, Fig. V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Class III equipment	N																																																												
1.7.2	S (FI, NO, SE): 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 the applicable countries shall be as follows:	Class III equipment	N																																																												
	FI: "Laite on liitettävä suojamaadoitus-koskettimilla varustettuun pistorasiaan"		N																																																												
	NO: "Apparatet må tilkoples jordet stikkontakt"		N																																																												
	SE: "Apparaten skall anslutas till jordat uttag"		N																																																												
	<p>A (DK, Heavy Current Regulations): Supply cords of class I equipment, which is delivered without a plug, must be provided with a visible tag with the following text:</p> <p>Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket</p> <p> eller </p> <p>If essential for the safety of the equipment, the tag must in addition be provided with a diagram which shows the connection of the other conductors, or be provided with the following text:</p>		N																																																												

GENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001 + A11:2004)			Verdict:
	"For tilslutning af de øvrige ledere, se medfølgende installationsvejledning."		
1.7.5	S (DK): Socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For stationary equipment the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.	No socket-outlets for providing power to other equipment	N
1.7.5	A (DK, Heavy Current Regulations): CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.	No socket-outlets for providing power to other equipment	N
1.7.12	A (DE, Gesetz über technische Arbeitsmittel (Gerätesicherheitsgesetz) [Law on technical labour equipment {Equipment safety law}], of 23 rd October 1992, Article 3, 3 rd paragraph, 2 nd sentence, together with the "Allgemeine Verwaltungsvorschrift zur Durchführung des Zweiten Abschnitts des Gerätesicherheitsgesetzes" [General administrative regulation on the execution of the Second Section of the Equipment safety law], of 10 th January 1996, article 2, 4 th paragraph item 2): Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in the German language. NOTE: Of this requirement, rules for use even only by service personnel are not exempted.		P
1.7.15	A (CH, Ordinance on environmentally hazardous substances SR 814.013): Annex 4.10 of SR 814.013 applies for batteries.	No such substances	N
	A (DE, Regulation on protection against hazards by X-ray, of 8 th January 1987, Article 5 [Operation of X-ray emission source], clauses 1 to 4): a) A license is required by those who operate an X-ray emission source. b) A license in accordance with Cl. 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if 1) the local dose rate at a distance of 0,1 m from the surface does not exceed 1 µSv/h and 2) it is adequately indicated on the X-ray emission source that i. X-rays are generated and ii. the electron acceleration voltage must not exceed the maximum value	No radiation	N

CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001 + A11:2004)			Verdict:
	<p>stipulated by the manufacturer or importer.</p> <p>c) A licence in accordance with Cl. 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if</p> <ol style="list-style-type: none"> 1) the X-ray emission source has been granted a type approval and 2) it is adequately indicated on the X-ray emission source that <ol style="list-style-type: none"> i. X-rays are generated ii. the device stipulated by the manufacturer or importer guarantees that the maximum permissible local dose rate in accordance with the type approval is not exceeded and iii. the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. <p>d) Furthermore, a licence in accordance with Cl. 1 is also not required by persons who operate X-ray emission sources on which the electron acceleration voltage does not exceed 30 kV if</p> <ol style="list-style-type: none"> 1) the X-rays are generated only by intrinsically safe CRTs complying with Enclosure III, No. 6, 2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measures and specified in the device and 3) it is adequately indicated on the X-ray emission source that the X-rays generated are adequately screened by the intrinsically safe CRT. 		
2.2.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	No TNV circuits	N
2.3.2	S (NO): Requirements according to this annex, 6.1.2.1 apply.	No TNV circuits	N
2.3.3 and 2.3.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	No TNV circuits	N
2.6.3.3	S (GB): The current rating of the circuit shall be taken as 13 A, not 16 A.	Class III equipment	N
2.7.1	<p>C: Replace the subclause as follows:</p> <p><i>Basic requirements</i></p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as</p>	Considered	N

CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001 + A11:2004)			Verdict:
	<p>integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>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;</p> <p>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;</p> <p>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.</p> <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>		
	S (GB): To protect against excessive currents and short-circuits in the PRIMARY CIRCUIT OF DIRECT PLUG-IN EQUIPMENT, protective device shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT.	Class III equipment	N
2.7.2	C: Void.	Considered	N
2.10.2	C: Replace in the first line "(see also 1.4.7)" by "(see also 1.4.8)".	Considered	N
2.10.3.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the AC. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage and will remain at 230 V in case of a single earth fault	Considered	N

CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001 + A11:2004)			Verdict:
3.2.1.1	<p>S (CH): 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 SEV 6533-2.1991, Plug type 11, L+N 250 V, 10 A 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 10A. 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 SEV 5933-2.1998, Plug type 21, L+N 250 V, 16 A SEV 5934-2.1998, Plug type 23, L+N+PE 250 V, 16 A</p>	Class III equipment	N
	<p>S (DK): Supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>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.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>		N
	<p>S (ES): 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.</p> <p>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.</p> <p>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.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>	Class III equipment	N
	<p>S (GB): Apparatus which is fitted with a flexible cable or cord and is designed to be connected to</p>	Class III equipment	N

CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001 + A11:2004)			Verdict:						
	<p>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 Socket etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE – 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>								
	<p>S (IE): 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.</p>	Class III equipment	N						
3.2.3	<p>C: Delete Note 1 and in Table 3A, delete the conduit sizes in parentheses.</p>	Considered	N						
3.2.5.1	<p>C: 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".</p> <p>In Table 3B, replace the first four lines by the following:</p> <table style="margin-left: 40px;"> <tr> <td>Up to and including 6</td> <td>0,75¹⁾</td> </tr> <tr> <td>Over 6 up to and including 10</td> <td>(0,75)²⁾ 1,0</td> </tr> <tr> <td>Over 10 up to and including 16</td> <td>(1,0)³⁾ 1,5</td> </tr> </table> <p>In the Conditions applicable to Table 3B delete the words "in some countries" in condition ¹⁾.</p> <p>In Note 1, applicable to Table 3B, delete the second sentence.</p>	Up to and including 6	0,75 ¹⁾	Over 6 up to and including 10	(0,75) ²⁾ 1,0	Over 10 up to and including 16	(1,0) ³⁾ 1,5	Considered	N
Up to and including 6	0,75 ¹⁾								
Over 6 up to and including 10	(0,75) ²⁾ 1,0								
Over 10 up to and including 16	(1,0) ³⁾ 1,5								
3.2.5.1	<p>S (GB): A power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>	Class III equipment	N						
3.3.4	<p>C: In table 3D, delete the fourth line: conductor sizes for 10 to 13A, and replace with the following:</p> <p>"Over 10 up to and including 16 1,5 to 2,5 1,5 to 4</p> <p>Delete the fifth line: conductor sizes for 13 to 16 A.</p>	Considered	N						
3.3.4	<p>S (GB): 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 mm² to 1,5 mm² nominal cross-sectional area.</p>	Class III equipment	N						

CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001 + A11:2004)			Verdict:
4.3.6	S (GB): The torque test is performed using a socket outlet complying with BS 1363 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, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C.	No direct plug-in equipment	N
	S (IE): 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.	No direct pug-in equipment	N
4.3.13.6	C: Add the following note: NOTE 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. Standards taking into account this recommendation are currently under development.	Considered	N
6.1.2.1	S (FI, NO, SE): Add the following text between the first and second paragraph: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement 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 - passes the tests and inspection criteria of 2.10.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.7 shall be performed using 1,5 kV), and - is subject to ROUTING TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation	No TNV circuits	N

CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001 + A11:2004)			Verdict:
	<p>under the following conditions:</p> <ul style="list-style-type: none"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950:2000, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400. 		
6.1.2.2	<p>S (FI, NO, SE): The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and 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>	No TNV circuits	N
7.1	<p>S (FI, NO, SE): Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>	No cable distribution system	N
G.2.1	<p>S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the AC. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.</p>	Considered	N
Annex H	<p>C: 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.</p>	No radiation	N
Annex P	<p>C: Replace the text of this annex by: See annex ZA.</p>	Considered	N

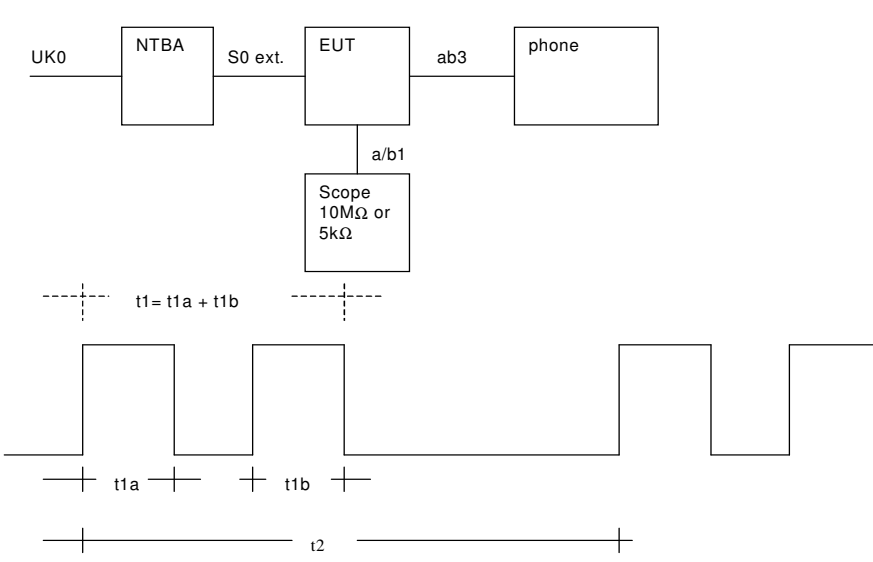
CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001 + A11:2004)		Verdict:																																																						
Annex Q	<p>C: Replace the title of IEC 61032 by "Protection of persons and equipment by enclosures – Probes for verification".</p> <p>Add the following notes for the standards indicated:</p> <p>IEC 60127 NOTE Harmonized as EN 60127 (Series) (not modified) IEC 60269-2-1 NOTE Harmonized as HD 630.2.1 S4:2000 (modified) IEC 60529 NOTE Harmonized as EN 60529:1991 (not modified) IEC 61032 NOTE Harmonized as EN 61032:1998 (not modified) IEC 61140 NOTE Harmonized as EN 61140:2001 (not modified) ITU-T Recommendation K.31 NOTE in Europe, the suggested document is EN 50083-1.</p>	N																																																						
Annex ZA	<p>C: NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR RELEVANT EUROPEAN PUBLICATIONS</p> <p>This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).</p> <p>NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.</p> <table border="0"> <tr> <td>—</td> <td>IEC 60050-151</td> </tr> <tr> <td>—</td> <td>IEC 60050-195</td> </tr> <tr> <td>EN 60065:1998 + corr. June 1999</td> <td>IEC 60065 (mod):1998</td> </tr> <tr> <td>EN 60073:1996</td> <td>IEC 60073:1996</td> </tr> <tr> <td>HD 566 S1:1990</td> <td>IEC 60085:1984</td> </tr> <tr> <td>HD 214 S2:1980</td> <td>IEC 60112:1979</td> </tr> <tr> <td>HD 611.4.1.S1:1992</td> <td>IEC 60216-4-1:1990</td> </tr> <tr> <td>HD 21¹⁾ Series</td> <td>IEC 60227 (mod) Series</td> </tr> <tr> <td>HD 22²⁾ Series</td> <td>IEC 60245 (mod) Series</td> </tr> <tr> <td>EN 60309 Series</td> <td>IEC 60309 Series</td> </tr> <tr> <td>EN 60317-43:1997</td> <td>IEC 60317-43:1997</td> </tr> <tr> <td>EN 60320 Series</td> <td>IEC 60320 (mod) Series</td> </tr> <tr> <td>HD 384.3 S2:1995</td> <td>IEC 60364-3 (mod):1993</td> </tr> <tr> <td>HD 384.4.41 S2:1996</td> <td>IEC 60364-4-41 (mod):1992³⁾</td> </tr> <tr> <td>EN 132400:1994⁴⁾</td> <td>IEC 60384-14:1993</td> </tr> <tr> <td>+ A2:1998 + A3:1998 + A4:2001</td> <td></td> </tr> <tr> <td>EN 60417-1</td> <td>IEC 60417-1</td> </tr> <tr> <td>HD 625.1 S1:1996 + corr. Nov. 1996</td> <td>IEC 60664-1 (mod):1992</td> </tr> <tr> <td>EN 60695-2-2:1994</td> <td>IEC 60695-2-2:1991</td> </tr> <tr> <td>EN 60695-2-11:2001</td> <td>IEC 60695-2-11:2000</td> </tr> <tr> <td>—</td> <td>IEC 60695-2-20:1995</td> </tr> <tr> <td>—</td> <td>IEC 60695-10-2:1995</td> </tr> <tr> <td>—</td> <td>IEC 60695-11-3:2000</td> </tr> <tr> <td>—</td> <td>IEC 60695-11-4:2000</td> </tr> <tr> <td>EN 60695-11-10:1999</td> <td>IEC 60695-11-10:1999</td> </tr> <tr> <td>EN 60695-11-20:1999</td> <td>IEC 60695-11-20:1999</td> </tr> <tr> <td>EN 60730-1:2000</td> <td>IEC 60730-1:1999 (mod)</td> </tr> </table>	—	IEC 60050-151	—	IEC 60050-195	EN 60065:1998 + corr. June 1999	IEC 60065 (mod):1998	EN 60073:1996	IEC 60073:1996	HD 566 S1:1990	IEC 60085:1984	HD 214 S2:1980	IEC 60112:1979	HD 611.4.1.S1:1992	IEC 60216-4-1:1990	HD 21 ¹⁾ Series	IEC 60227 (mod) Series	HD 22 ²⁾ Series	IEC 60245 (mod) Series	EN 60309 Series	IEC 60309 Series	EN 60317-43:1997	IEC 60317-43:1997	EN 60320 Series	IEC 60320 (mod) Series	HD 384.3 S2:1995	IEC 60364-3 (mod):1993	HD 384.4.41 S2:1996	IEC 60364-4-41 (mod):1992 ³⁾	EN 132400:1994 ⁴⁾	IEC 60384-14:1993	+ A2:1998 + A3:1998 + A4:2001		EN 60417-1	IEC 60417-1	HD 625.1 S1:1996 + corr. Nov. 1996	IEC 60664-1 (mod):1992	EN 60695-2-2:1994	IEC 60695-2-2:1991	EN 60695-2-11:2001	IEC 60695-2-11:2000	—	IEC 60695-2-20:1995	—	IEC 60695-10-2:1995	—	IEC 60695-11-3:2000	—	IEC 60695-11-4:2000	EN 60695-11-10:1999	IEC 60695-11-10:1999	EN 60695-11-20:1999	IEC 60695-11-20:1999	EN 60730-1:2000	IEC 60730-1:1999 (mod)	N
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EN 60825-1:1994 + corr. Febr. 1995 + A11:1996 + corr. July 1997	IEC 60825-1:1993
EN 60825-2:2000	IEC 60825-2:2000
—	IEC 60825-9:1999
EN 60851-3:1996	IEC 60851-3:1996
EN 60851-5:1996	IEC 60825-5:1996
EN 60851-6:1996	IEC 60851-6:1996
—	IEC 60885-1:1987
EN 60990:1999	IEC 60990:1999
—	IEC 61058-1:2000
EN 61965:2001	IEC 61965:2000
EN ISO 178:1996	ISO 178:1993
EN ISO 179 Series	ISO 179 Series
EN ISO 180:2000	ISO 180:1993
—	ISO 261:1998
—	ISO 262:1998
EN ISO 527 Series	ISO 527 Series
—	ISO 386:1984
EN ISO 4892 Series	ISO 4892 Series
—	ISO 7000:1989
EN ISO 8256:1996	ISO 8256:1990
—	ISO 9772:1994
EN ISO 9773:1998	ISO 9773:1998
—	ITU-T:1988 Recommendation K.17
—	ITU-T:2000 Recommendation K.21
<p>1) The HD 21 series is related to, but not directly equivalent with the IEC 60227 series 2) The HD 22 series is related to, but not directly equivalent with the IEC 60245 series 3) IEC 60364-4-41:1992 is superseded by IEC 60364-4-41:2001 4) EN 132400, Sectional Specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (Assessment level D), and ist amendments are related to, but not directly equivalent to IEC 60384-14</p>	

1.5.1	TABLE: list of critical components					P
object/part No.	Manufacturer/ trademark	type/model	technical data	standard or cert. No.	Laboratory/ mark(s) of conformity ¹⁾	
BATT	Sony	CR2032	3Vdc	EN60950-1	Tested in application	
supplementary information						
¹⁾ an asterisk indicates a mark which assures the agreed level of surveillance						

1.6.2	TABLE: electrical data (in normal conditions)					P
fuse #	I rated (A)	U (V)	I (mA)	P (W)	I fuse (mA)	condition/status
--	--	2.55Vdc	0.03	--	--	Normal operation
--	--	3.00Vdc	0.04	--	--	
--	--	3.60Vdc	0.05	--	--	
supplementary information						

2.1.1.7	TABLE: discharge of capacitors in the primary circuit			N
condition/status	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Remark
Switch on				
Switch off				
Standby				
supplementary information				
No capacitor in primary circuit				

2.3	TABLE: TNV circuits	N
M.2		
	Operation Voltage	
	Test point	—
Measurement result		limit
tr = ms, fr = Hz		70Hz
t ₁ = ms		--
t ₂ = ms		--
U _{DC} = V		--
I _{DC} = mA		--
Up = V		--
Ip = mA		--
I _{TS1} = mA		mA
I _{TS2} = mA		mA
supplementary information		
<p>Test set up:</p> 		
No TNV signal		

2.4	TABLE: limited current circuit measurement						N
Location	Capacity (μF)	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Command	
normal condition							
single fault condition							
supplementary information							
Output measured with a $2\text{k}\Omega$ resistor load.							

2.5	TABLE: limited power source						N
	Output of: Operation voltage: Limits: Table 2B.						
Under normal conditions:							
Op. Mode:	U[V]	I[A]	S[VA]	Limit			
Open circuit				$\leq 20\text{V}, \leq 8\text{A}, \leq 20.7\text{VA}$			
Load							
supplementary information							

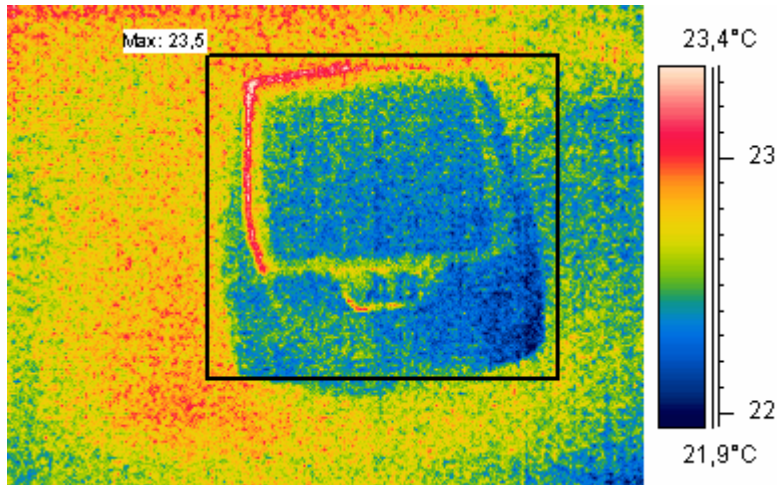
2.6.3.3	TABLE: resistance of earthing conductors and their terminations						N
Protective bonding conductor at	Test current [A]	Voltage drop [V]	Measured resistance [Ω]	Limit [Ω]			
				0.1			
supplementary information							

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements					P
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
supplementary information						
See 5.3.4						

2.10.5	TABLE: distance through insulation measurements				N
distance through insulation di at/of:	Up (V)	test voltage (V)	required di (mm)	di (mm)	
supplementary information					
TA approved. All other SELV circuits.					

4.3.6	TABLE: Direct plug-in equipment		N
test point	measured torque	Limit	
		≤ 0.25 Nm.	
Supplementary information			

4.5	TABLE: maximum temperatures		P
	Object.....	A8	
	test voltage (V)	3Vdc	—
	t _{amb1} (°C)	24.0	—
	t _{amb2} (°C)	24.5	—
	Rated ambient temperature(°C).....	--	—
	Operation mode	Normal operation	—
maximum temperature T of part/at::		T (°C)	allowed T _{max} (°C)
Over whole EUT		23.5	75



supplementary information

temperature T of winding:	R ₁ (Ω)	R ₂ (Ω)	T (°C)	allowed T _{max} (°C)	insulation class

supplementary information

4.5.2	TABLE: ball pressure test of thermoplastic parts			N
	allowed impression diameter (mm)	≤ 2 mm		—
part		test temperature (°C)	impression diameter (mm)	
supplementary information				
TA approved				

4.7	TABLE: resistance to fire					P
object/part No.	Manufacturer/ trademark	type/model	flame class	UL-File No.	Required flame class	result
Enclosure	Chi Mei	CM-211	UL94HB	E56070	HB75	Pass
		PA-757				
PCB	Yee King	YK2	UL94V-0	E142683	V-1	Pass
supplementary information						
All others are already approved						

5.1	TABLE: Touch current and protective conductor current			N
	Adapter..... :			
	Measurement point			
	Limit (µA)..... :	250		
U[V]:	f[Hz]:	L[µA]:	N[mA]:	

5.2	TABLE: electric strength tests, impulse tests and voltage surge tests		N
test voltage applied between:		test voltage (V) DC	breakdown Yes / No
supplementary information			
The insulation was tested with ac voltages			

5.3	TABLE: fault condition tests					P
	ambient temperature (°C)	25.6			—	
	model/type of power supply	BATT			—	
	markings of power supply	See “Copy of name plates”			—	
component No.	fault	test voltage (V)	test time	fuse No.	Fuse current (A)	result
BATT	Reverse polarity	3Vdc	5min	-	-	No hazard
supplementary information						

6.1	TABLE: electric strength tests, impulse tests and voltage surge tests	N	
6.2			
test voltage applied between:		test voltage (VAC)	breakdown Yes / No
		1.5	

Test according to picture 6A	test voltage (VAC)	Measured (mA)	Limit (mA)
Protected Earth and			10
supplementary information			
No TNV circuits			

6.3	TABLE: Protection of the telecommunication wiring system from overheating	N	
Line		Measured (A)	Limit (A)
			1.3

Line	Supply voltage (VAC)	Uoc (V)	Measured (A) after 60s	Limit (A)
				1000/Uoc
supplementary information				
No TNV circuits				

7.3.2	TABLE: Voltage surge test	N		
test voltage applied between:		Number of pulses	Uc (kV)	breakdown Yes / No
		50	10	
supplementary information				
50 pulses with 12 pulses/min repetition time				
No cable distribution systems				

7.3.3	TABLE: Impulse test	N		
test voltage applied between:		Number of pulses ¹⁾	Uc (kV)	breakdown Yes / No
		10	5	
supplementary information				
1) 10 impulses with alternating polarity and 60s pause between the pulses				
No cable distribution systems				

A.2.6	TABLE: flammability test for classifying materials V-0, V-1 or V-2		N
sample No. / ref.	afterflame time (s) t_1 or t_2	afterflame + afterglow (s) after 2nd flame application $t_2 + t_3$	
1/A			
2/A			
3/A			
supplementary information:			
Total afterflame time (s) for any condition set $t_1 + t_2$ for five (5) specimens:			
Conditioning "A" designates 7 days at $70\text{ °C} \pm 1\text{ °C}$			

A.2.7	TABLE: flammability re-test for classifying materials HB			N
sample	Test temperature	Result	Flame	
supplementary information:				

Photo documentation





List of test equipment

Number	Equipment	Manufacturer	Type	Serial number	Calibration	
					[Y/N]	next
SAF-0002	Multimeter	HP	3466A	2905a29537	Y	03.11.07
SAF-0003	Digitizing oscilloscope	Tektronix	THS 720 P	B055751	Y	09.11.07
SAF-0005	Isolation transformer	Ismet	KSTIB	---	N	---
SAF-0006	Bipolar power supply	HP	6827A	2435A-01527	N	---
SAF-0007	Pulse / function generator	HP	8116A	2124G02272	N	---
SAF-0012	Multimeter	HP	3457A	2505A00166	Y	18.10.07
SAF-0019	DC power source	Gossen	Konstanter 34G80R4	207	N	---
SAF-0020	Dual display multimeter	Fluke	45	5150177	Y	17.11.07
SAF-0023	Digitizing oscilloscope	Tektronix	THS 720 P	B052759	Y	20.11.07
SAF-0025	Push & pull dynamometer	PTL	P 10.34	9908313.1	Y	01.12.07
SAF-0029	Electronic load	Uniwatt	EL100 P10/A/F	D010141R	N	---
SAF-0032	Withstand voltage & IR tester	Ass.Research	Hypot II 3570D	A091478	Y	24.10.07
SAF-0033	Line leakage tester	Ass.Research	Linechek 510L	A130567	Y	07.04.07
SAF-0036	Push & pull dynamometer lin.	PTL	P 10.36	9908313.2	Y	01.12.07
SAF-0037	Push & pull dynamometer lin.	PTL	P 10.37	9909324	Y	01.12.07
SAF-0038	Test finger with dyn.met. lin.	PTL	P 10.48	9908304.4	Y	10.08.07
SAF-0046	AC/DC current probe	TEK	A622	NSN1016963	Y	17.11.07
SAF-0050	Steel ball 500 g	PTL	500 g	---	Y	24.01.07
SAF-0062	High voltage probe 100:1	TEK	P5100	---	Y	10.11.07
SAF-0064	High voltage probe 10:1	TEK	P5102	---	Y	03.11.07
SAF-0065	High voltage probe 10:1	TEK	P5102	---	Y	03.11.07
SAF-0066	Multimeter	HP	3457A	2703a03056	Y	24.11.07
SAF-0085	Temp / Humidity meter	Testo	Testo 645	00662582/205	Y	11.04.07
SAF-0089	Dual display multimeter	Fluke	45	5160078	Y	24.11.07
SAF-0100	Multimeter	HP	3478A	2911A61622	Y	15.03.07
SAF-0101	Temperature recorder	HuDe	TC300	5.008/03	Y	25.01.07
SAF-0102	Digital radiocommunication tester	Rohde&Schwarz	CMD55	1050.9008.55	N	---
SAF-0105	Electronic load	Zentro-Elektrik	ELA40/40A	870015	N	---
SAF-0106	Thermo Camera	FLIR Systems	A20	22700276	Y	31.10.07
SAF-0107	Multimeter	Fluke	189	85210242	Y	18.03.07
SAF-0108	Multimeter	Fluke	189	85210240	Y	18.03.07
SAF-0130	Torque test apparatus	PTL	F37.13	---	Y	22.10.09
SAF-0160	Measuring network touch current / protective conductor current	Cetecom	D.1	1	Y	06.04.08
SAF-0170	Microscope lin. Scale	Peak	2009-20	---	Y	03.02.07
SAF-0172	Small Finger Probe Ø8,6	Ridgeway Precision	Probe 18 of IEC61032	---	Y	03.03.07
SAF-0173	Small Finger Probe Ø5,6	Ridgeway Precision	Probe 19 of IEC61032	---	Y	03.03.07
SAF-0175	Temperature sensor	Conatex	TE06280021	551975	Y	11.04.07
SAF-0181	AC-Power-Analyzer	Norma	D5155	R3882009469	Y	06.02.07
SAF-0183	DC Power Supply	Zentro-Elektrik	LD50/10 GB	9010610403	N	---
SAF-0188	Scale	Kern	440-47N	WC0630281	Y	13.11.07
SAF-5123	Scale	Kern	EG300-3M	8127101	Y	08.11.07