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Test Report
Safety Testing of
Passport lockset
For
Primera Ltd

Author: ....
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Principal Engineer

Checked/Approved:..... .....
Mr P Hesp
Senior Engineer

Project number: B0852

Report number: B1224TR1

Issue Number: 1

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

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Testing

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TEST REPORT IEC 60950-1and EN 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report reference No ……..:	B1224TR1
Tested by (printed name and signature) ……..:	Mr E Warren Principal Engineer
Approved by (printed name and signature) ……..:	Mr P Hesp Senior Engineer
Date of issue ……..:	6 August 2013
Testing laboratory ……..:	York EMC Services Ltd
Address ……..:	46 Waverley Road, Beeches Industrial Estate, Yate, Bristol BS37 5QT, United Kingdom
Applicants name ……..:	Primera Ltd
Address ……..:	Unit 8 Bankfield House, 250 Bristol Avenue, Blackpool, FY2 0JF United Kingdom
Test specification	
Standard ……..:	IEC 60950-1: 2005 + A1: 2009 EN 60950-1: 2006 + A12: 2011
Test procedure ……..:	York EMC Services Ltd
Non-standard test method ……..:	N/A
Test item description	
Trademark ……..:	Primera
Manufacturer ……..:	Primera Ltd
Model and/or type reference ……..:	Passport Lockset
Rating(s) ……..:	3V (alkaline primary AA cells)

Testing location:
York EMC Services Ltd,
46 Waverley Road, Beeches Industrial Estate, Yate, Bristol, BS37 5QT, United Kingdom.

Tests performed (name of test and test clause):

☒	1.5	Components	☐	4.1	Stability
☐	1.6	Power interface	☒	4.2	Mechanical strength
☒	1.7	Markings and instructions	☒	4.3	Design and construction
☐	2.1	Protection from electric shock and energy hazards	☒	4.4	Protection against hazardous moving parts
☒	2.2	SELV circuits	☒	4.5	Thermal requirements
☐	2.3	TNV circuits	☐	4.6	Openings in enclosures
☐	2.4	Limited current circuits	☒	4.7	Resistance to fire
☒	2.5	Limited power sources	☐	5.1	Touch current and protective conductor current
☐	2.6	Provisions for earthing and bonding	☐	5.2	Electric strength
☐	2.7	Overcurrent and earth fault protection in primary circuits	☒	5.3	Abnormal operating and fault conditions
☐	2.8	Safety interlocks	☐	6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment
☐	2.9	Electrical insulation	☐	6.2	Protection of equipment users from overvoltages on telecommunications networks
☐	2.10	Clearances, creepage distances and distances through insulation	☐	6.3	Protection of the telecommunication wiring system from overheating
☒	3.1	General	☐	7.1	General
☐	3.2	Connection to a mains supply	☐	7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment
☐	3.3	Wiring terminals for connection of external conductors	☐	7.3	Protection of equipment users from overvoltages on the cable distribution system
☐	3.4	Disconnection from the mains supply	☐	7.4	Insulation between primary circuits and cable distribution systems
☐	3.5	Interconnection of equipment			

Copy of marking plate: -

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Test item particulars ……:	
Equipment mobility ……:	☐ movable ☐ hand-held ☐ transportable ☐ stationary ☒ for building-in ☐ direct plug-in
Connection to the mains ……:	☐ pluggable equipment ☐ type A ☐ type B ☐ permanent connection ☐ detachable power supply cord ☐ non-detachable power supply cord ☒ not directly connected to the mains
Operating condition ……:	☒ continuous ☐ rated operating/resting time
Over voltage category ……:	☐ OVC I ☐ OVC II ☐ OVC III ☐ OVC IV ☒ other
Mains supply tolerance (%) or absolute mains supply values ……..:	N/A
Tested for IT power systems ……:	☐ Yes ☒No
IT testing, phase-phase voltage (V) ……:	N/A
Class of equipment ……:	☐ Class I ☐ Class II ☒ Class III ☐ other
Considered current rating of protective device as part of the building installation (A)……:	N/A
Pollution degree (PD) ……:	☐ PD 1 ☒ PD 2 ☐ PD 3
IP protection class ……..:	IPXO
Altitude during operation (m) ……:	N/A
Altitude of test laboratory (m) ……:	63m
Mass of equipment (kg) ……:	3.5kg

Test case verdicts	
Test case does not apply to the test object …:	N/A
Test item does meet the requirement ……..:	Pass
Test item does not meet the requirement …..:	Fail

Testing	
Date of receipt of test item ……:	19 April 2013
Date(s) of performance of test ……..:	25 April 2013 to 6 August 2013

General remarks:

The test results contained 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 point is used as the decimal separator.

The apparatus was compliant with the relevant requirements of IEC/EN 60950-1.

General product information:

The product is a lock using 125kHz passive transponder keys. It has basic stand-alone programming capability enabled by a master key. It is intended for use in mental healthcare environments dealing with vulnerable persons. It is powered from 3V supplied by dual sets of AA alkaline primary cells, and has no wired interfaces.

Abbreviations used in the report:

- normal conditions	N.C.	- single fault conditions	S.F.C
- functional insulation	OP	- basic insulation	BI
- double insulation	DI	- supplementary insulation	SI
- between parts of opposite polarity	BOP	- reinforced insulation	RI

Indicate used abbreviations (if any)

Remarks:

Remark 1
The lock is powered from consumer grade alkaline batteries that are the only source of power in the equipment. There are therefore no tests applicable under clause 4.3.8.

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Clause	Requirement - Test	Result - Remark	Verdict
1	**GENERAL**		Pass

1.5	**Components**		Pass
1.5.1	Where safety is involved, components shall comply either with the requirements of this standard or with the safety aspects of the relevant IEC component standards	(see appended table 1.5.1)	Pass
1.5.2	Evaluation and testing of components		Pass
1.5.3	Thermal controls		N/A
1.5.4	Transformers		N/A
1.5.5	Interconnecting cables		N/A
1.5.6	Capacitors bridging insulation		N/A
1.5.7	Resistors bridging insulation		N/A
1.5.7.1	Resistors bridging functional insulation, basic insulation or supplementary insulation		N/A
1.5.7.2	Resistors bridging double insulation or reinforced insulation between the a.c. mains supply and other circuits:		N/A
1.5.7.3	Resistors bridging double insulation or reinforced insulation between the a.c. mains supply and circuits connected to an antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems		N/A
1.5.9	Surge suppressors		N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDR's		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A

1.6	**Power interface**		N/A
1.6.1	AC power distribution system		N/A
1.6.2	Input current	(see appended table 1.6)	N/A
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
1.7	**Marking and instructions**		Pass
1.7.1	Power rating and identification markings		Pass
1.7.1.1	Power rating markings		N/A
	Rated voltage(s) or voltage range(s) (V) ……:		N/A
	Symbol for nature of supply, for d.c. only ……..:		N/A
	Rated frequency or rated frequency range (Hz) ..:		N/A
	Rated current (mA or A) ……:		N/A
1.7.1.2	Identification markings		Pass
	Manufacturer's name or trademark or identification mark ……:	Primera (including logo)	Pass
	Type/model or type reference ……..:	Passport	Pass
	Symbol for Class II equipment only		N/A
	Other symbols ……..:		N/A
1.7.2	Safety instructions and marking		Pass
1.7.2.1	General		Pass
1.7.2.2	Disconnect devices		N/A
1.7.2.3	Overcurrent protective devices		N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment ……..:		N/A
1.7.5	Power outlets on the equipment ……:		N/A
1.7.6	Fuse identification ……:		N/A
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals		N/A
1.7.7.2	Terminals for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
1.7.8	Controls and indicators		N/A
1.7.8.1	Identification, location and marking……:		N/A
1.7.8.2	Colours :		N/A
1.7.8.3	Symbols according to IEC 60417……:		N/A
1.7.8.4	Markings using figures :		N/A
1.7.9	Isolation of multiple power sources ……:		N/A
1.7.10	Thermostats and other regulating devices…… :		N/A
1.7.11	Durability		Pass
1.7.12	Removable parts		N/A
1.7.13	Replaceable batteries	Consumer grade alkaline batteries only	N/A
	Language ……:		-
1.7.14	Equipment for restricted access locations		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
2	**PROTECTION FROM HAZARDS**		Pass
2.1	Protection from electric shock and energy hazards		N/A
2.1.1	Protection in operator access areas		N/A
2.1.1.1	Access to energised parts		N/A
	Test by inspection ……..:		N/A
	Test with test finger (Figure 2A...……:		N/A
	Test with test pin (Figure 2B)..……..……:		N/A
	Test with test probe (Figure 2C)...……:		N/A
2.1.1.2	Battery compartments ……..:		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (V); minimum distance (mm) through insulation	(see appended tables 2.10.2 and 2.10.5)	-
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards ……..:	(see appended table 2.1.1.5)	N/A
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment		N/A
	Time-constant (s); measured voltage (V)……:		-
2.1.1.8	Energy hazards – d.c. mains supplies		N/A
	a) Capacitor connected to the DC MAINS SUPPLY		N/A
	b) Internal battery connected to the DC MAINS SUPPLY		N/A
2.1.1.9	Audio amplifiers in information technology equipment		N/A
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations		N/A

2.2	**SELV circuits**		Pass
2.2.1	General requirements		Pass
2.2.2	Voltages under normal conditions (V) ……..:	3.12V dc	Pass
2.2.3	Voltages under fault conditions (V) ……..:	3.12V dc	Pass
2.2.4	Connection of SELV circuits to other circuits		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
2.3	**TNV circuits**		N/A
2.3.1	Limits		N/A
	Type of TNV circuits ……..:		-
2.3.2	Separation of TNV circuits from other circuits and from accessible parts		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed ……..:		-
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed ……..:		-
2.3.5	Test for operating voltages generated externally		N/A

2.4	**Limited current circuits**		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz) ……..:		-
	Measured current (mA) ……:		-
	Measured voltage (V) ……:		-
	Measured capacitance (µF) ……..:		-
2.4.3	Connection of limited current circuits to other circuits		N/A

2.5	**Limited power sources**	(see appended table 2.5)	Pass
	a) Inherently limited output		Pass
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		N/A
	d) Overcurrent protective device limited output		Pass
	Max. output voltage (V), max. output current (A), max. apparent power (VA)……:	3.12V, 5.3A per battery, 16.5VA	-
	Current rating of overcurrent protective device (A) ……:	1A	-
	Use of integrated circuit (IC) current limiters	(See Annex CC)	-

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Clause	Requirement - Test	Result - Remark	Verdict
2.6	**Provisions for earthing and bonding**		N/A
2.6.1	Protective earthing		N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG …….:		-
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG …….:		-
2.6.3.4	Resistance (Ω) of earthing conductors and their terminations, test current (A) ……:		-
2.6.3.5	Colour of insulation ……:		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type and nominal thread diameter (mm) ……:		-
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
2.7	**Overcurrent and earth fault protection in primary circuits**		N/A
2.7.1	Basic requirements		N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not covered in 5.3		N/A
2.7.2	This subclause has been declared void (EN 60950-1 only)		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices …….:		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel		N/A

2.8	**Safety interlocks**		N/A
2.8.1	General principles		N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) ..……:		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A

2.9	**Electrical insulation**		N/A
2.9.1	Properties of insulating materials		N/A
2.9.2	Humidity conditioning		N/A
	Relative humidity (%), temperature (°C) ……:		-
2.9.3	Grade of insulation		N/A
2.9.4	Separation from hazardous voltages		N/A
	Method used ……..:		-

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Clause	Requirement - Test	Result - Remark	Verdict
2.10	**Clearances, creepage distances and distances through insulation**		N/A
2.10.1	General		N/A
2.10.1.1	Frequency		N/A
2.10.1.2	Pollution degrees ……:		N/A
2.10.1.3	Reduced values for functional insulation		N/A
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		N/A
2.10.2.1	General		N/A
2.10.2.2	RMS working voltage		N/A
2.10.2.3	Peak working voltage		N/A
2.10.3	Clearances		N/A
2.10.3.1	General		N/A
2.10.3.2	Mains transient voltages		N/A
	a) AC mains supply……:		N/A
	b) Earthed d.c. mains supplies……..……..:		N/A
	c) Unearthed d.c. mains supplies ……..…….:		N/A
	d) Battery operation…….……..:		N/A
2.10.3.3	Clearances in primary circuit	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.4	Clearances in secondary circuits	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.5	Clearances in circuits having starting pulses	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.6	Transients from an a.c. mains supply		N/A
2.10.3.7	Transients from a d.c. mains supply		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems		N/A
2.10.3.9	Measurement of transient voltages		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

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Clause	Requirement - Test	Result - Remark	Verdict
2.10.4	Creepage distances		N/A
2.10.4.1	General		N/A
2.10.4.2	Material group and comparative tracking index		N/A
	CTI tests……..:	Material group IIIb is assumed to be used	-
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.5	Solid insulation		N/A
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	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	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.5.6	Thin sheet material - General		N/A
2.10.5.7	Separable thin sheet material		N/A
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test	(see appended table 2.10.5)	-
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test	(see appended table 2.10.5)	-
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		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	(see appended table 2.10.5)	-
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage……..:		N/A

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	- 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	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.2	Coated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.4	Insulation between conductors on different surfaces of a printed board		N/A
	Distance through insulation	(see appended table 2.10.5)	N/A
	Number of insulation layers (pcs)……:		N/A
2.10.7	Component external terminations	(see appended table 2.10.3 and 2.10.4)	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	(see appended table 5.2)	N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
	Temperature $T_1 = T_2 = T_{ma} - T_{amb}$ +10K (°C) …:		-
2.10.10	Test for Pollution Degree 1 environment and for insulating compound		N/A
2.10.11	Tests for semiconductor devices and for cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
3	**WIRING, CONNECTIONS AND SUPPLY**		Pass
3.1	General		Pass
3.1.1	Current rating and overcurrent protection	By inspection	Pass
3.1.2	Protection against mechanical damage	By inspection	Pass
3.1.3	Securing of internal wiring	By inspection	Pass
3.1.4	Insulation of conductors	(see appended table 5.2)	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
	10N pull test		N/A
3.1.10	Sleeving on wiring		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
3.2	**Connection to an a.c. mains supply or a d.c. mains supply**		N/A
3.2.1	Means of connection		N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter (mm) of cable and conduits ……:		-
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type ……..:		-
	Rated current (A), cross-sectional area (mm^2), AWG ……..:		-
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) ……..:		-
	Longitudinal displacement ……:		-
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	D (mm); test mass (g) ……...:		-
	Radius of curvature of cord (mm) ……..:		-
3.2.9	Supply wiring space		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2) ……:		-
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm) ……:		-
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

3.4	**Disconnection from the mains supply**		N/A
3.4.1	General requirement		N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energised		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A

3.5	**Interconnection of equipment**		N/A
3.5.1	General requirements		N/A
3.5.2	Types of interconnection circuits ……:		N/A
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
4	**PHYSICAL REQUIREMENTS**		Pass
4.1	Stability		N/A
	Angle of 10°		N/A
	Test: force (N) ……..:		N/A

4.2	**Mechanical strength**		Pass
4.2.1	General		Pass
	Rack-mounted equipment		N/A
4.2.2	Steady force test, 10 N		Pass
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		Pass
4.2.5	Impact test	No hazardous voltage or energy	N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm)……...:		N/A
4.2.7	Stress relief test		N/A
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified ……..:		N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N) …:	100N	Pass
4.2.11	Rotating solid media (EN 60950-1 only)		N/A
	Test to cover on the door..……..:		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
4.3	**Design and construction**		Pass
4.3.1	Edges and corners		Pass
4.3.2	Handles and manual controls; force (N) …….:	50N	Pass
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts		Pass
4.3.5	Connection of plugs and sockets		N/A
4.3.6	Direct plug-in equipment		N/A
	Torque ……..:		-
	Compliance with the relevant mains plug standard ……..:		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries		Pass
	Overcharging of a rechargeable battery		N/A
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery		N/A
	Excessive discharging rate for any battery	Consumer grade alkaline batteries – testing not required	N/A
4.3.9	Oil and grease		N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids and gases		N/A
4.3.12	Flammable liquids ……..:		N/A
	Quantity of liquid (l) ……..:		N/A
	Flash point (°C) ……..:		N/A
4.3.13	Radiation; type of radiation ……..:		N/A
4.3.13.1	General		N/A
4.3.13.2	Ionising 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		N/A
4.3.13.5.1	Lasers (including laser diodes)	(see separate test report of IEC/EN 60825-1 / IEC/EN 60825-2)	N/A
	Laser class ……..:		-
4.3.13.5.2	Light emitting diodes (LEDs)		-
4.3.13.6	Other types ……:		N/A

4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas……..:		N/A
	Household and home/office document/media shredders	(see Annex EE)	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

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Clause	Requirement - Test	Result - Remark	Verdict
4.5	Thermal requirements		Pass
4.5.1	General		Pass
4.5.2	Temperature tests		Pass
	Normal load condition per Annex L……..:	No outputs	
4.5.3	Temperature limits for materials	(see appended table 4.5)	Pass
4.5.4	Touch temperature limits	(see appended table 4.5)	Pass
4.5.5	Resistance to abnormal heat	(see appended table 4.5.5)	N/A

4.6	**Openings in enclosures**		Pass
4.6.1	Top and side openings	None	Pass
	Dimensions (mm) ……:		-
4.6.2	Bottoms of fire enclosures		N/A
	Construction of the bottom, dimensions (mm).:		-
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm)……:		-
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallised parts		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C)/time (weeks) …..:		-

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Clause	Requirement - Test	Result - Remark	Verdict
4.7	**Resistance to fire**		Pass
4.7.1	Reducing the risk of ignition and spread of flame		Pass
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	Pass
	Method 2, application of all simulated fault condition tests	(see appended table 5.3)	N/A
4.7.2	Conditions for a fire enclosure		N/A
4.7.2.1	Parts requiring a fire enclosure		N/A
4.7.2.2	Parts not requiring a fire enclosure		Pass
4.7.3	Materials		Pass
4.7.3.1	General		Pass
4.7.3.2	Materials for fire enclosures		N/A
4.7.3.3	Materials for components and other parts outside fire enclosures		Pass
4.7.3.4	Materials for components and other parts inside fire enclosures		N/A
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		Pass
5.1	Touch current and protective conductor current		N/A
5.1.1	General		N/A
5.1.2	Configuration of equipment under test (EUT)		N/A
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		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		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 3.5mA:		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 and from telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		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 ……:		N/A
	a) EUT with earthed telecommunication ports…:		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
5.2	**Electric strength**		N/A
5.2.1	General	(see appended table 5.2)	N/A
5.2.2	Test procedure	(see appended table 5.2)	N/A

5.3	**Abnormal operating and fault conditions**		Pass
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	Pass
5.3.2	Motors	(see appended Annex B)	N/A
5.3.3	Transformers	(see appended Annex C)	N/A
5.3.4	Functional insulation ……..:		N/A
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE……:	See separate test report IEC/EN 60065	N/A
5.3.7	Simulation of faults		Pass
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		Pass
5.3.9.1	During the tests		Pass
5.3.9.2	After the tests		Pass

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Clause	Requirement - Test	Result - Remark	Verdict
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		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		N/A
	Supply voltage (V)……..:		N/A
	Current in the test circuit (mA) ……..:		N/A
6.1.2.2	Exclusions ……:		N/A

6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test	(see appended table 5.2)	N/A
6.2.2.2	Steady-state test	(see appended table 5.2)	N/A
6.2.2.3	Compliance criteria		N/A

6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) ……..:		-
	Current limiting method ……..:		-

7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		N/A
7.1	General		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		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
Zx	PROTECTION AGAINST EXCESSIVE SOUND PRESSURE FROM PERSONAL MUSIC PLAYERS		N/A
Zx.1	General		N/A
Zx.2	Equipment requirements		N/A
Zx.3	Warning		N/A
Zx.4	Requirements for listening devices (headphones and earphones)		N/A
Zx.4.1	Wired listening devices with analogue input		N/A
Zx.4.2	Wired listening devices with digital input		N/A
Zx.4.3	Wireless listening devices		N/A
Zx.5	Measurement methods		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
A	**ANNEX A, TEST FOR RESISTANCE TO HEAT AND FIRE**		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 ……:		-
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…..……:		-
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 60695-2-2, cl 4.8		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

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Clause	Requirement - Test	Result - Remark	Verdict
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		N/A
B.1	General requirements		N/A
	Position ……:		-
	Manufacturer ……..:		-
	Type ……..:		-
	Rated values ……..:		-
B.2	Test conditions		N/A
B.3	Maximum temperatures	(see appended table 5.3)	N/A
B.4	Running overload test	(see appended table 5.3)	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		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V)……..:		N/A
B.8	Test for motors with capacitors	(see appended table 5.3)	N/A
B.9	Test for three-phase motors	(see appended table 5.3)	N/A
B.10	Test for series motors		N/A
	Operating voltage (V) ……:		-

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Clause	Requirement - Test	Result - Remark	Verdict
C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		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 and C.2)	N/A
	Protection from displacement of windings …….:		N/A

D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		N/A
D.1	Measuring instrument		N/A
D.2	Alternative measuring instrument		N/A

E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**	N/A

F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**	N/A

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Clause	Requirement - Test	Result - Remark	Verdict
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM 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
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

H	**ANNEX H, IONISING RADIATION (see 4.3.13)**		N/A

J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		N/A
	Metal used ……..:		-

K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		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

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Clause	Requirement – Test	Result – Remark	Verdict
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		Pass
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		Pass

M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
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

N	**ANNEX N, IMPULSE TEST GENERATOR (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)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A

P	**ANNEX P, NORMATIVE REFERENCES**		-

Q	**ANNEX Q, VOLTAGE DEPENDENT RESISTORS (see 1.5.9.1)**		N/A
	a) Preferred climatic categories……:		N/A
	b) Maximum continuous voltage ……..:		N/A
	c) Pulse current……:		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A

S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF MOISTURE (see 1.1.2)**		N/A
		See separate test report	-

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

V	**ANNEX V, AC POWER DISTRIBUTION SYTEMS (see 1.6.1)**		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A

W	**ANNEX W, SUMMATION OF TOUCH CURRENTS (see 5.1.8.2)**		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

X	**ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		N/A
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

Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**	N/A

AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**	N/A

BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**	-

CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		N/A
CC.1	Integrated circuit (IC) current limiters		N/A
CC.2	Test program 1		N/A
CC.3	Test program 2		N/A

DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**		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

EE	**ANNEX EE, Household and home/office document/media shredders**		N/A
EE.1	General		N/A
EE.2	Marking and instructions		N/A
EE.3	Inadvertent reactivation		N/A
EE.4	Disconnection of power to hazardous moving parts		N/A
EE.5	Protection against hazardous moving parts		N/A

Annex Zx	SIGNIFICANCE OF $L_{aeq,T}$ IN EN 50332-1 AND ADDITIONAL INFORMATION	-

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Clause	Requirement – Test	Result - Remark	Verdict
1.5.1	**TABLE: List of critical components**		Pass

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Fuse	Littelfuse	Pico 491 series	1A 125V fast acting	UL248-1	UL E10489
Terminals	CamdenBoss	CTB0308/2	10A 130V	UL 60947-7-1	UL E167251

Supplementary information:
[1)] Provided evidence ensures the agreed level of compliance.

1.5.1	**TABLE: Opto Electronic Devices**	N/A

Manufacturer……:

Type……..:

Separately tested……:
Bridging insulation……..:
External creepage distance……..:

Internal creepage distance…..:

Distance through insulation…..:

Tested under the following conditions……:

Input:
Output:

Supplementary information:

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Clause	Requirement – Test	Result - Remark	Verdict
1.6.2	**TABLE: Electrical data (in normal conditions)**		N/A

U (V)	I (A)	I Rated	P (W)	Fuse #	I fuse (A)	Condition/status

Supplementary information:

2.1.1.5 c) 1)	**TABLE: Max. V, A, VA test**			N/A

Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)

Supplementary information:

2.1.1.5 c) 2)	**TABLE: Stored energy**	N/A

Capacitance C (µF)	Voltage U (V)	Energy E (J)

Supplementary information:

2.2	**TABLE: Evaluation of voltage limiting components in SELV circuits**	N/A

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)

Supplementary information:

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Clause	Requirement – Test	Result - Remark	Verdict
2.5	**TABLE: Limited power sources**		Pass
Circuit output tested: Battery connection point			
Measured Uoc (V) with all load circuits disconnected:	3.12		

	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
Normal condition	< 1A	320.5A	< 3VA	250VA
Single fault: ……:	1A	320.5A	3VA	250VA
Single fault: ……①	10.6A	320.5A	33.1VA	250VA

Supplementary information:

① Fault consisting of short circuit of batteries with 2 sets of new batteries fitted

SC = Short circuit, OC = Open circuit

2.10.2	**Table: Working voltage measurement**		N/A
Location	RMS voltage (V)	Peak voltage (V)	Comments

Supplementary information:

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Clause	Requirement – Test	Result - Remark	Verdict
2.10.3 and 2.10.4	**TABLE: Clearance and creepage distance measurements**		N/A

Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required dcr (mm)	dcr (mm)
Functional:						
Basic/supplementary						
Reinforced:						
Supplementary information:						

2.10.5	**TABLE: Distance through insulation measurements**	N/A

Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Supplementary information:					

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Clause	Requirement – Test	Result - Remark	Verdict
4.3.8	**TABLE: Batteries**		N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available		Consumer grade alkaline batteries – testing not required	N/A
Is it possible to install the battery in a reverse polarity position?			

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

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

4.3.8	**TABLE: Batteries**	N/A
Battery category .....:	(Lithium, NiMh, NiCad, Lithium Ion …)	
Manufacturer.....:		
Type / model.....:		
Voltage.....:		
Capacity.....:	mAh	
Tested and Certified by (incl. Ref. No.) .....:		
Circuit protection diagram:		

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Clause	Requirement – Test	Result - Remark			Verdict
4.5	**TABLE: Thermal requirements**				Pass
	Supply voltage (V) ……..:	3.12	-	-	
	Ambient T_{min} (°C) ……..:	24.4	-	-	
	Ambient T_{max} (°C) ……..:	24.6	-	-	

Maximum measured temperature T of part/at::	T (°C)		Allowed T_{max} (°C)	
PCB	26.2	-	99.4	-
RF sensor (external surface)	26.6	-	59.4	-
Lock face plate	24.8	-	69.4	-
Top of moulding above sensor	25.7	-	94.4	-

Supplementary information

temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class

Supplementary information:

4.5.5	**TABLE: Ball pressure test of thermoplastic parts**		N/A
	allowed impression diameter (mm)	≤ 2 mm	-

part	test temperature	impression diameter (mm)

Supplementary information:

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Clause	Requirement – Test	Result - Remark	Verdict
4.7	**TABLE: Resistance to fire**		Pass

Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Moulded case	Quadrant Engineering Plastic Products	Ertalon 66-GF30	> 3 mm	UL94HB	Maufacturer information
Battery holder	RS components	Polyethylene	1.41 mm	UL94HB ①	E216959
PCB connector	Camden Boss	Polyamide	N/A	UL94V-0	E167251
PCB material	Cleveland Circuits Ltd	1/1S or 3/3S	1.6 mm	UL94V-0	E207295
Supplementary information:					

5.1	**TABLE: touch current measurement**		N/A
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions
Supplementary information:			

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Clause	Requirement – Test	Result - Remark	Verdict
5.2	**TABLE: electric strength tests, impulse tests and voltage surge tests**		N/A

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

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Clause	Requirement – Test					Result - Remark	Verdict
5.3	**TABLE: fault condition tests**						Pass
	Ambient temperature (°C) …… ……..:					24.3	-
	Power source for EUT: Manufacturer, model/type, output rating……:					2 x AA Alkaline Battery RS components	-
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation	
Battery	S/C	3.12	5 min	N/A	N/A	(Battery short circuit before fuse) Current rose to 5.3A. The temperature at the battery compartment rose to 67°C before the current started to decrease. The plastic of the battery compartment softened near one terminal but did not create a hazard	
Supplementary information:							

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Clause	Requirement – Test	Result - Remark	Verdict
C.2	**TABLE: Transformers**		N/A

Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)

Loc.	Tested insulation	Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers

Supplementary information:

C.2	**TABLE: Transformers**	N/A

Transformer

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Clause	Requirement - Test	Result - Remark	Verdict
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN 60950-1) (normative)**		-
1.2.4.1	In **Denmark**, 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	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex		N/A
1.5.7.1	In **Finland**, **Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements of 1.5.7.2		N/A
1.5.8	In **Norway**, 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 (230V)		N/A
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex		N/A
1.7.2.1	In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE TYPE EQUIPMENT 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: - In **Finland**: "Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan" In **Norway**: "Apparatet må tilkoples jordet stikkontakt" In **Sweden**: "Apparaten skall anslutas till jordet uttag"		N/A N/A N/A N/A
1.7.2.1	In **Norway** and **Sweden**, 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 the cable distribution system.		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	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 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: "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)." NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5MHz. The insulation shall withstand a dielectric strength of 1.5kV rms 50Hz or 60Hz, for 1min. Translation to Norwegian (the Swedish text will also be accepted in Norway): "Utstyr som er koplet til beskyttelsesjord via nettplug og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV neetet installers en galvanisk isolator mellom utstyret og kabel-TV nettet" Translation to Swedish: "Utrustning som är kopplad till skyddsjord via jordet 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"		N/A
1.7.5	In **Denmark**, 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		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
2.2.4	In **Norway**, requirements according to this annex, 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex		N/A
2.3.2	In **Finland**, **Norway** and **Sweden**, 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 **Norway**, 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 **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16A		N/A
2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT		N/A
2.10.5.13	In **Finland**, **Norway** and **Sweden**, 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	In **Switzerland**, 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: SEV 6532-2. 1991 Plug Type 15 3P+N+PE 250/400V, 10A SEV 6533-2. 1991 Plug Type 11 L+N 250V, 10A SEV 6534-2. 1991 Plug Type 12 L+N+PE 250V, 10A 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: SEV 5932-2. 1998 Plug Type 25 3P+N+PE 230/400V, 16A SEV 5933-2. 1998 Plug Type 21 L+N 250V, 16A SEV 5934-2. 1998 Plug Type 23 L+N+PE 250V, 16A		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
3.2.1.1	In **Denmark**, 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 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 poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A ids 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		N/A
3.2.1.1	In **Spain,** 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 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 **United Kingdom**, 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 **Ireland**, 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

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Clause	Requirement - Test	Result - Remark	Verdict
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1.25mm^2 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 **United Kingdom**, 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 13 A is: 1.25mm^2 to 1.5mm^2 nominal cross-sectional area		N/A
4.3.6	In the **United Kingdom**, 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, 12.16 and 12.17, except that the test of 12.17 is performed at not less than125°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 **Ireland**, 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 **Finland**, **Norway** and **Sweden**, TOUCH CURRENT measurement results exceeding 3.5 mA r.m.s are permitted only for the following equipment: STATIONARY PLUGGABLE EQUIPMENT TYPE A that o is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and o has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and o is provided with instructions for the installation of that conductor by a SERVICE PERSON; STATIONARY PLUGGABLE EQUIPMENT TYPE B STATIONARY PERMANENTLY CONNECTED EQUIPMENT		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
6.1.2.1	In **Finland**, **Norway** and **Sweden**, 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 0.4mm, 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 2.10.11 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 - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1.5 kV IT is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4b) It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2 A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - 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 - the additional testing shall be performed on all the test specimens as described in EN 60384-14 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		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
6.1.2.2	In **Finland**, **Norway** and **Sweden**, 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		N/A
7.2	In **Finland**, **Norway** and **Sweden**, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM		N/A
7.3	In **Norway** and **Sweden**, there are many buildings where the screen of the coaxial cable is normally not connected to the earth in the building installation		N/A
7.3	In **Norway**, for installation conditions see EN 60728-11:2005		N/A
7.3	In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
ZC	**ANNEX ZC, A-deviations (EN 60950-1) (informative)**		-
1.5.1	**Switzerland** (Ordinance on environmentally hazardous substances SR 814.013, annex 3.2, Mercury) NOTE In Sweden, switches containing mercury such as thermostats, relays and level controllers are not allowed		N/A
1.7.2.1	**Germany** (Gesetz über technische Arbeitsmittel und Verbraucherprodukte (Geräte-und Produktsicherheitsgesetz - GPSG) [Law on technical labour equipment and consumer products], of 6th January 2004, Section 2, Article 4, Clause (4), Item 2) If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or ready made consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market Of this requirement, rules for use even only by SERVICE PERSONS are not exempted		N/A
1.7.13	**Switzerland** (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries) Annex 2.15 of SR 814.41 applies for batteries		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	TABLE: – Test equipment list		-

Item	Type	Equipment No.	Calibration date		Used?	Notes
			Last[1]	Due		
1)	Variable mains supply	B0617	N/A	N/A	-	A
2)	Agilent 34401 DMM	B0851	Annual	10/12/13	Yes	
3)	Fluke 79 DMM	B0486	Annual	22/11/13	Yes	
4)	AMX Series power supply unit	78112	N/A	N/A	-	A
5)	Chroma 61505 PSU	B1360	N/A	N/A	-	A
6)	Hexane	N/A	N/A	N/A	Yes	
7)	Stop watch (0 to 30 seconds)	B0924	Annual	30/1/14	Yes	
8)	One piece cotton cloth	N/A	N/A	N/A	Yes	
9)	Jointed Test Finger	B0810	26/11/12	21/11/17	-	
10)	Unjointed Test Finger	B0811	26/11/12	21/11/17	-	
11)	Test Pin 4mm diameter	B0955	27/10/10	27/10/15	-	
12)	Test Pin 3mm diameter	B0954	27/10/10	27/10/15	-	
13)	Programmable DC power supply HP6634A	B0168	2/1/13	2/1/14	-	
14)	Touch current measuring instrument A1 (Std)	B0876	Annual	30/1/14	-	
15)	Touch current measuring instrument A1 (Wet)	B0965	Annual	30/1/14	-	
16)	Touch current measuring instrument A1 (Burns)	B0966	Annual	30/1/14	-	
17)	Vernier gauge	B0819	Annual	21/11/13	-	
18)	Screw gauge micrometer	B0624	Annual	21/11/13	-	
19)	Feeler gauge set	B0818	23/11/10	23/11/13	-	
20)	Associated research HiPot III high voltage tester	B0614	Annual	27/12/13	-	
21)	Insulated mat or tiles	------	N/A	N/A	-	
22)	Equibonded BT 6-way telephone socket	EQ 001	N/A	N/A	-	A
23)	Equibonded RJ45 Connector	EQ 002	N/A	N/A	-	A
24)	Equibonded USB type A plug	EQ 004	N/A	N/A	-	A
25)	Equibonded 9-way D-type female connector	EQ 005	N/A	N/A	-	A
26)	Aluminium foil (conductive)	-----	N/A	N/A	-	A

[1)] or interval between calibrations

Clause	Requirement - Test	Result - Remark	Verdict
	TABLE: – Test equipment list continued		-

Item	Type	Equip. No.	Calibration date		Used?	Notes
			Last[1]	Due		
27)	Smooth steel ball, 50mm diameter, mass 500g + 25g	B0906	11/8/08	11/8/13	-	
28)	Force gauge – Imada DS2 – 500N	B0852	24/3/11	27/3/14	Yes	
29)	Rigid 12mm hemispherical rod (blunt test probe)	B0814	26/11/12	21/11/17	-	
30)	Force gauge – Imada DS2 – 50N	B0945	Annual	22/11/13	-	
31)	Digital thermometer Fluke 50S	B0618	Annual	24/12/13	Yes	
32)	Pico TC-08 thermocouple data logger (serial)	B0619	Annual	22/11/13	-	
33)	Pico TC-08 thermocouple data logger (USB)	B1349	Annual	22/11/13	Yes	
34)	8 x Thermocouple Type K (designated A to F), fitted in TC-08 positions 1 to 8	B0859 to B0866	Annual	22/11/13	-	
35)	8 x Thermocouple Type K (designated 1 to 8), fitted in TC-08 positions 1 to 8	B1349/ 1 to B1349/ 8	Annual	22/11/13	Yes	
36)	Agilent 34401 DMM	B0735	Annual	10/7/14	-	
37)	Metrix PX120 power meter	B1318	Annual	27/12/13	-	
38)	Metrix HX0012 current transformer	B1319	Annual	27/12/13	-	
39)	Tenma 72-6185 clamp meter	B0948	Annual	23/11/13	-	
40)	Agilent 30A current shunt	B0911	Annual	11/2/14	-	
41)	High Temperature polyimide tape	----	N/A	N/A	-	
42)	Ball pressure test weights / ball	B0853	26/11/12	21/11/17	-	
43)	Genlab oven	B0613	N/A	N/A	-	A
44)	Binocular microscope	B0559	N/A	N/A	-	A
45)	Oscilloscope Tektronix 2232	B0472	13/4/11	13/4/14	-	
46)	Mains connection module	B0894	N/A	N/A	-	A
47)	Kikusui Earth tester TOS6200	B0856	17/11/10	27/12/13	-	
48)	Kikusui Flash tester 5051A	B0944	Annual	27/11/13	-	
49)	Lansbury Impact Hammer 0.5 N	B0325	12/6/13	12/6/15	-	
50)						

Notes

A No reliance is made on the calibration of these instruments or parts. Indications are checked by other means such as with calibrated instruments or verification tests.

Samples submitted for assessment

The following samples were submitted as part of the assessment: -

COP No.	Description of apparatus	Serial No.	Date received
2049B	Lockset complete with keys	None	19 April 2013
2159B	Lock assembly inclusive of PCB	None	30 July 2013

Photographs

Front view

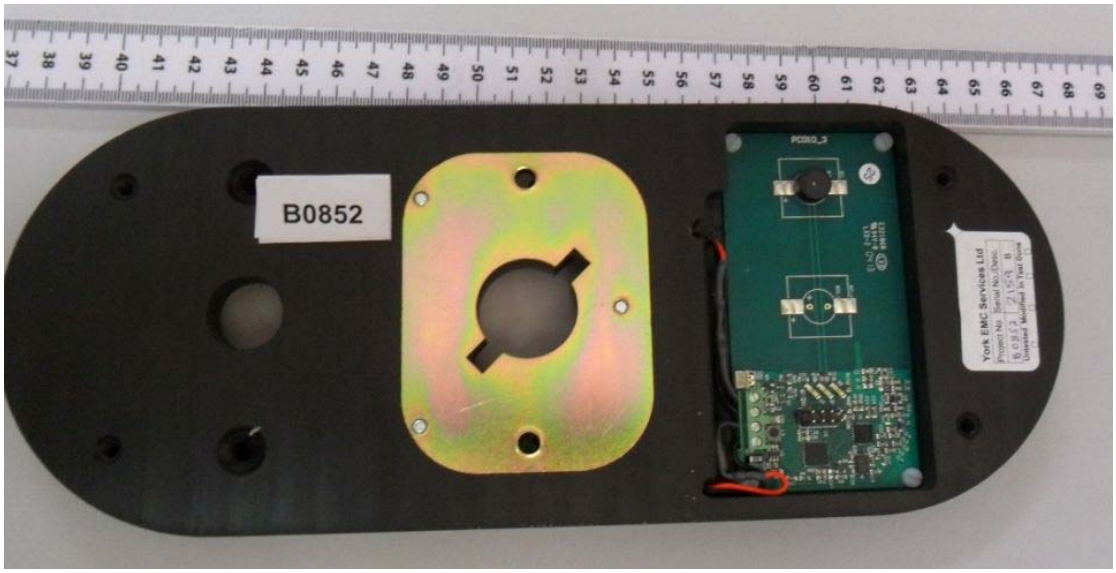
Rear view

Side view

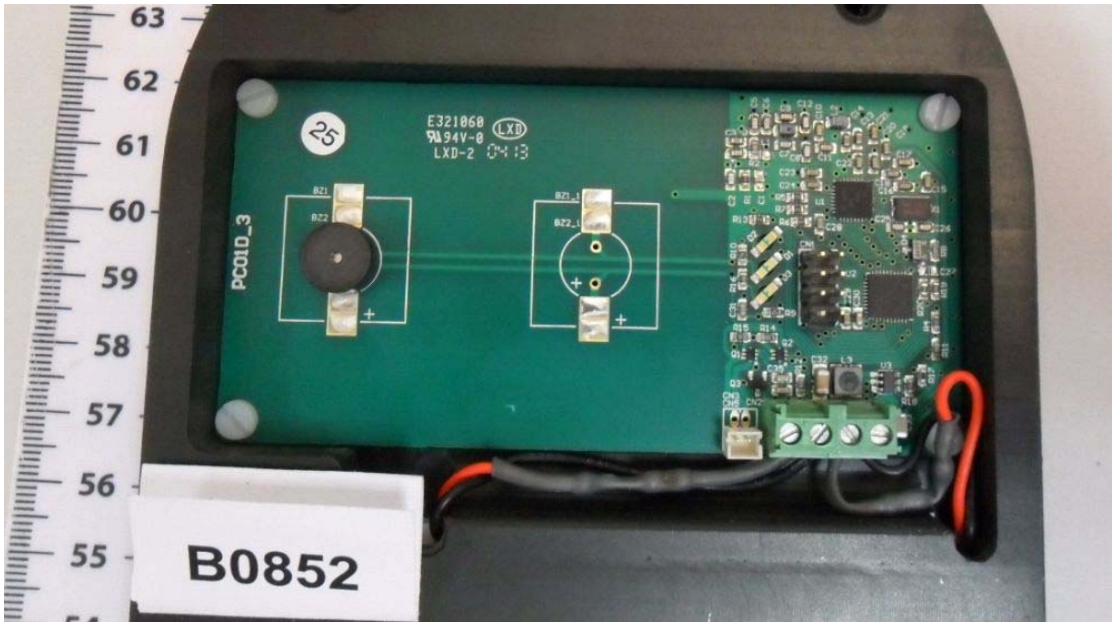
Logo

Battery compartment

Front plate assembly



Front plate rear view



PCB and fuses