



APPLICATION FOR LOW VOLTAGE DIRECTIVE

On Behalf of

XI'AN BEICHENG ELECTRONICS CO., LTD

Digital Multimeter

Model no.: VICTOR 81B, VICTOR 81D

Prepared for : XI'AN BEICHENG ELECTRONICS CO., LTD

Address: JINGYUAN 7 ROAD, JINGHE INDUSTRIAL PARK, NORTH DISTRICT, XI'AN, CHINA

Prepared By : Product Technology Service(Ningbo) Co., Ltd.

Address: 3/F., Building 1, Hengyu Industrial Park, Fengjia, Shiqi Street, Yinzhou District, Ningbo, Zhejiang, China

Date of Test: March 27 – march 30, 2017

Date of Report: April 11, 2017

Report Number: PS2017032403-1-2

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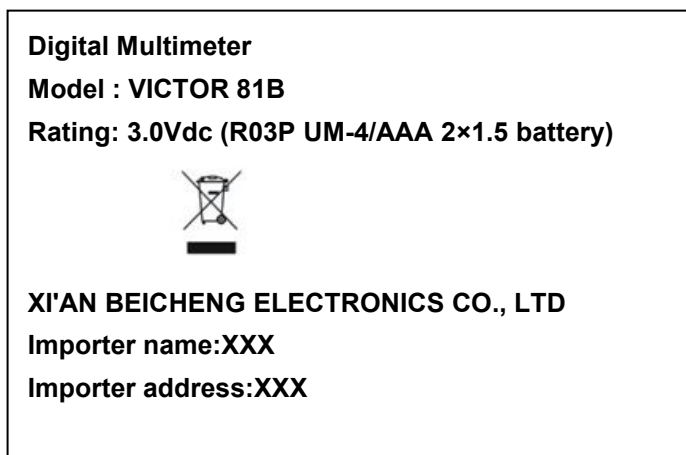
TEST REPORT IEC 61010-1 / EN 61010-1 Safety requirements for electrical equipment for measurement, control, and laboratory use Part 1: General requirements	
Report Reference No	PS2017032403-1-2
Originator (name + signature)	Danyan Wang 
Verifier (name + signature)	Meng Wei 
Authorize (name + signature)	Shizong Nie 
Date of issue	April 11, 2017
Testing Laboratory	Product Technology Service(Ningbo) Co., Ltd.
Address	3/F., Building 1, Hengyu Industrial Park, Fengjia, Shiqi Street, Yinzhou District, Ningbo, Zhejiang, China
Testing location/procedure	TL <input checked="" type="checkbox"/> CBTL [] SMT [] TMP []
Address	Same as above
Applicant's name	XI'AN BEICHENG ELECTRONICS CO., LTD
Address	JINGYUAN 7 ROAD, JINGHE INDUSTRIAL PARK, NORTH DISTRICT, XI'AN, CHINA
Test specification:	
Standard	<input checked="" type="checkbox"/> EN 61010-1:2010
Test procedure	LVD safety report
Non-standard test method	N.A.
Test Report Form No	IEC/EN 61010_1
TRF Originator	PTS
Master TRF	2011-01
Test item description	
Model/Type reference	VICTOR 81B, VICTOR 81D
Manufacturer	XI'AN BEICHENG ELECTRONICS CO., LTD
Address	JINGYUAN 7 ROAD, JINGHE INDUSTRIAL PARK, NORTH DISTRICT, XI'AN, CHINA
Trademark	VICTOR
Rating(s)	3.0Vdc (R03P UM-4/AAA 2×1.5 battery)

Test item particulars :	
Type of item tested..... :	Measuring equipment
Description of equipment function..... :	Measure for the voltage, current, resistance, temperature.
Installation/overvoltage category..... :	CAT III 600V
Pollution degree..... :	Pollution degree 2
Environmental rating..... :	Temperature: 0 ~ +40°C
Equipment mobility..... :	Portable equipment
Connection to mains supply..... :	None
Operating conditions..... :	Continuous
Marked degree of protection to IEC 60529..... :	IP20
Accessories and detachable parts included in the evaluation..... : N/A	
Options..... : N/A	
Test case verdicts :	
Test case does not apply to the test object..... :	N/A(Not applicable)
Test object does meet the requirement..... :	P(Pass)
Test object does not meet the requirement..... :	F(Fail)
Testing :	
Date of receipt of test item..... :	March 27, 2017
Date (s) of performance of tests..... :	March 27 – march 30, 2017
General remarks:	
<p>This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.</p> <p>The test results presented in this report relate only to the item(s) tested.</p> <p>"(see remark #)" refers to a remark appended to the report.</p> <p>"(see Annex #)" refers to an annex appended to the report.</p> <p>"(see Form A.#)" refers to a table appended to the report.</p> <p>Throughout this report a comma (point) is used as the decimal separator.</p>	
Remark:	
<p>Two modles have same electrical parts.</p> <p>All tests were performed on model VICTOR 81B which cover other models.</p>	

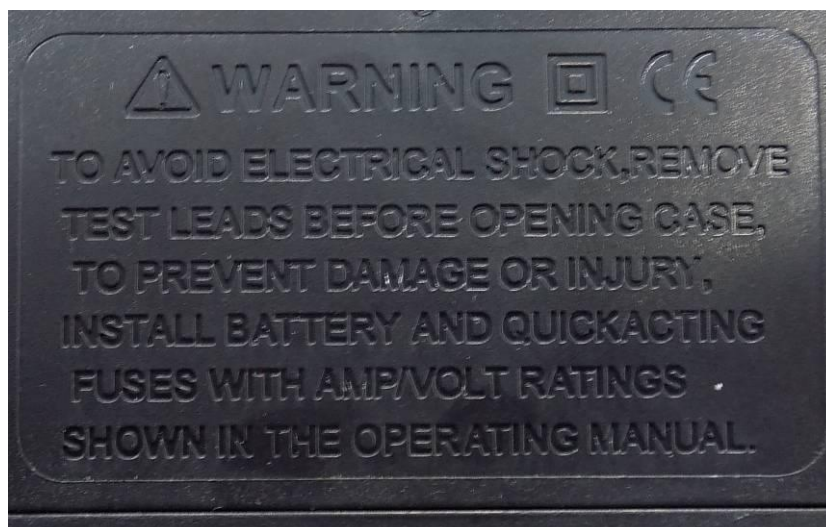
Copy of marking plate:

(for example model: VICTOR 81B)

1) Marking label for model VICTOR 81B.



2) Below warning statement and symbol were marked on appliance



Summary of test results (information/comments):

- This Digital Multimeter is designed for measure the voltage, current, resistance, temperature.
- The max. temperature of the appliance is 40 °C, declared by the manufacturer.
- EUT complies with EN 61010-1: 2010.

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE: 1 - Documents attached to this report			P
Document No.	Document description	Page Numbers	
Appendix 2	Photo documentation	74-77	

TABLE: 2 - Test equipment list					P
Item	Manufacturer	Equipment	Calibration date		Comments
-	-	Model No.	Last ¹	Due	
*Note: Appendix 1 (Page 69-73)					
1) or interval between calibrations.					

TABLE: 3 – List of components and circuits relied on for safety					P
Unique component reference or location (including drawing reference if required)	Manufacturer (NOTE 1)	Part number	RATING (NOTE 2)	Evidence of acceptance (NOTE 3)	
Enclosure	Various	Various	V-0	UL	
PCB	Various	Various	V-0, 130°C	UL	
Internal cord	Various	Various	22AWG,200°C	UL	
-alt.	Various	Various	22AWG,200°C	UL	
Battery	Various	R03P	DC 1.5V	CB	
NTC	Various	Various	---	VDE	
Fuse	Various	Various	10A,250V	VDE	
NOTE 1 - List all manufacturers concerned. NOTE 2 - Electrical, mechanical, flammability, etc. NOTE 3 - Licence number, file number or other documentary evidence of acceptance					

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.4	Testing in SINGLE FAULT CONDITIONS		P
4.4.1	Fault tests	(see Form A.1 and A.2)	P
4.4.2	Application of SINGLE FAULT CONDITIONS		P
4.4.2.1	FAULT CONDITIONS SHALL INCLUDE THOSE SPECIFIED IN 4.4.2.2 TO 4.4.2.14	(see Form A.1 and A.2)	—
4.4.2.2	PROTECTIVE IMPEDANCE		N
4.4.2.3	PROTECTIVE CONDUCTOR		N
4.4.2.4	Equipment or parts for short-term or intermittent operation		N
4.4.2.5	Motors		N
4.4.2.6	Capacitors	No such capacitor	N
4.4.2.7	MAINS transformers		N
4.4.2.7.2	Short circuit		N
4.4.2.7.3	Overload		N
4.4.2.8	Outputs		P
4.4.2.9	Equipment for more than one supply		N
4.4.2.10	Cooling		N
4.4.2.11	Heating devices		N
4.4.2.12	Insulation between circuits and parts		P
4.4.2.13	Interlocks		N
4.4.2.14	Voltage selectors		N
4.4.3	Duration of tests	(see Form A.1 and A.2)	P
4.4.4	Conformity after application of fault conditions	(see Form A.1; A.2; A.8, A.14)	P

5	MARKING AND DOCUMENTATION		P
5.1.1	General		P
	Required equipment markings are:		—
	visible:		P
	From the exterior; or	Marking for double insulation, caution, CE are marked on apparatus surface.	P
	After removing a cover; or	No such parts used	N
	Opening a door	Ditto	N
	After removal from a rack or panel	Ditto	N
	Not put on parts which can be removed by an operator		P

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Letter symbols (IEC 60027) used		P
	Graphic symbols (IEC 61010-1: Table 1) used	Refer to rating label	P
5.1.2	Identification		—
	Equipment is identified by:		P
	a) Manufacturer's or supplier's name or trademark	See page 1	P
	b) Model number, name or other means	See page 1	P
	Manufacturing location identified	Only one factory	N
5.1.3	MAINS supply		P
	Equipment is marked as follows:		P
	a) Nature of supply:	Supplied by battery	P
	1) a.c. RATED MAINS frequency or range of frequencies.....:		N
	2) d.c. with symbol 1		P
	b) RATED supply voltage(s) or range.....:	DC3.0V	P
	c) Max. RATED power (W or VA) or input current....:		N
	The marked value not less than 90 % of the maximum value		N
	If more than one voltage range:		N
	Separate values marked; or		N
	Values differ by less than 20 %	(see Form A.3)	N
	d) OPERATOR-set for different RATED supply voltages:		N
	Indicates the equipment set voltage		N
	Portable equipment indication is visible from the exterior		N
	Changing the setting changes the indication		N
	e) Accessory MAINS socket-outlets accepting standard MAINS plugs are marked:		N
	With the voltage if it is different from the MAINS supply voltage.....:		N
	For use only with specific equipment		N
	If not marked for specific equipment it is marked with:		N
	The maximum rated current or power; or		N
	Symbol 14 with full details in the documentation		N
5.1.4	Fuses		P

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Operator replaceable fuse marking (see also 5.4.5)..... :	See CDF (TABLE: 3 – List of components and circuits relied on for safety)	P
5.1.5	TERMINALS, connections and operating devices		P
5.1.5.1	General		P
	Where necessary for safety, indication of purpose of TERMINALS, connectors, controls and indicators marked		P
	If insufficient space, symbol 14 used		P
	Push-buttons and actuators of emergency stop devices and indicators:		N
	used only to indicate a warning of danger or		N
	the need for urgent action		N
	coloured red		N
	coded as specified in IEC 60073		N
	Supplementary means of coding provided, if meaning of colour relates (see IEC 60073):		N
	to safety of persons; or		N
	safety of the environment		N
5.1.5.2	TERMINALS		P
	MAINS supply TERMINAL identified		N
	Other TERMINAL marking:		P
	a) FUNCTIONAL EARTH TERMINALS (symbol 5 used)		N
	b) PROTECTIVE CONDUCTOR TERMINALS:		N
	Symbol 6 is placed close to or on the TERMINAL; or		N
	Part of appliance inlet		N
	c) TERMINALS of control circuits (symbol 7 used)		N
	d) HAZARDOUS LIVE TERMINALS supplied from the interior		P
	Standard MAINS socket outlet; or		N
	RATINGS marked; or		P
	Symbol 14 used		P
5.1.6	Switches and circuit breakers		N
	If disconnecting device, off position clearly marked		N
	If push-button used as power supply switch:		N
	Symbol 9 and 15 used for on-position		N
	Symbol 10 and 16 used for off-position		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Pair of symbols 9, 15 and 10, 16 close together		N
5.1.7	Equipment protected by DOUBLE INSULATION or REINFORCED INSULATION		P
	Protected throughout (symbol 11 used)		P
	Only partially protected (symbol 11 not used)		N
5.1.8	Field-wiring TERMINAL boxes		N
	If TERMINAL or ENCLOSURE exceeds 60 °C:		N
	Cable temperature RATING marked..... :		N
	Marking visible before and during connection or beside TERMINAL		N
5.2	Warning markings		P
	Visible when ready for NORMAL USE		P
	Are near or on applicable parts		P
	Symbols and text correct dimensions and colour:		—
	a) symbols min 2,75 mm and text 1,5 mm high and contrasting in colour with background		P
	b) symbols and text moulded, stamped or engraved in material min. 2,0 mm high and		N
	0.5 mm depth or raised if not contrasting in colour		N
	If necessary marked with symbol 14		P
	Statement to isolate or disconnect if access by using a tool to HAZARDOUS LIVE parts is permitted		P
5.3	Durability of markings		P
	The required markings remain clear and legible in NORMAL USE	(see Form A.4)	P
5.4	Documentation		P
5.4.1	General		P
	Equipment is accompanied by documentation for safety purposes for OPERATOR or RESPONSIBLE BODY	Provided in user's manual.	P
	Safety documentation for service personnel authorized by the manufacturer		P
	Documentation necessary for safe operation is provided in printed media or		P
	in electronic media if available at any time		N
	Documentation includes:		—
	a) intended use		P
	b) technical specification		P

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) name and address of manufacturer or supplier		P
	d) Information specified in 5.4.2 to 5.4.6	See 5.4.2 to 5.4.5	P
	e) information to mitigate residual RISK (see also subclause 17)		N
	f) accessories for safe operation of the equipment specified		N
	g) guidance provided to check correct function of the equipment, if incorrect reading may cause a HAZARD from harmful or corrosive substances of HAZARDOUS live parts		N
	h) instructions for lifting and carrying		N
	Warning statements and a clear explanation of warning symbols:		—
	Provided in the documentation; or		P
	Information is marked on the equipment		N
5.4.2	Equipment ratings		P
	Documentation includes:		P
	a) Supply voltage or voltage range..... : DC3.0V		P
	Frequency or frequency range..... :		N
	Power or current rating..... :		N
	b) Description of all input and output connections in accordance to 6.6.1 a)		P
	c) RATING of insulation of external circuits in accordance to 6.6.1 b)		N
	d) Statement of the range of environmental conditions (see 1.4)	Environmental indicated	P
	e) Degree of protection (IEC 60529)	IP20	N
	f) if impact rating less than 5 J:		N
	IK code in accordance to IEC 62262 marked or		N
	symbol 14 of table 1 marked, with		N
	RATED energy level and test method stated		N
5.4.3	Equipment installation	Provided in user's manual	P
	Documentation includes instructions for:		P
	a) assembly, location and mounting requirements		P
	b) protective earthing		N
	c) connections to supply		N
	d) permanently connected equipment:		N
	1) Supply wiring requirements		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	2) If external switch or circuit-breaker, requirements and location recommendation		N
	e) ventilation requirements		N
	f) special services (e. g. air, cooling liquid)		N
	g) Instructions relating to sound level		N
5.4.4	Equipment operation	See below.	P
	Instructions for use include:		P
	a) identification and description of operating controls		P
	b) positioning for disconnection		N
	c) instructions for interconnection		N
	d) specification of intermittent operation limits		N
	e) explanation of symbols used	Symbols have explanation in user manual.	P
	f) replacement of consumable materials	Battery	P
	g) cleaning and decontamination	Use soft dry cloth without any solvents or water.	P
	h) Listing of any poisonous or injurious gases and quantities		N
	i) RISK reduction procedures relating to flammable liquids (see 9.5)		N
	j) RISK reduction procedures relating burn from surfaces permitted to exceed limits of 10.1		N
	Additional precautions for IEC 60950 conforming equipment in regard to moistures and liquids		N
	A statement about protection impairment if used in a manner not specified by the manufacturer		P
5.4.5	Equipment maintenance		P
	Instructions for RESPONSIBLE BODY include:		—
	Instructions sufficient in detail permitting safe maintenance and inspection and continued safety:		P
	Instruction against the use of detachable MAINS supply cord with inadequate rating		N
	Specific battery type of user replaceable batteries		P
	Any manufacturer specified parts		N
	Rating and characteristics of fuses		P
	Instructions include following subjects permitting safe servicing and continued safety:		P

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	a) product specific RISKS may affect service personnel		P
	b) protective measures for these RISKS		P
	c) verification of the safe state after repair		P
5.4.6	Integration into systems or effects resulting from special conditions		N
	Aspects described in documentation		N

6	PROTECTION AGAINST ELECTRIC SHOCK		P
6.1	General	(see Form A.5)	P
6.1.1	Requirements		—
	Protection against electric shock maintained in NORMAL CONDITION and SINGLE FAULT CONDITION		P
	ACCESSIBLE parts not HAZARDOUS LIVE	All accessible parts are not hazards live	P
	Voltage, current, charge or energy below the limits in NORMAL CONDITION and in SINGLE FAULT CONDITION between:		—
	ACCESSIBLE parts and earth		N
	two ACCESSIBLE parts on same piece of the equipment within a distance of 1,8 m		N
	Conformity is checked by the determination of 6.2 and 6.3 followed by the tests of 6.4 to 6.11		N
6.1.2	Exceptions		N
	Following HAZARDOUS LIVE parts may be accessible to an OPERATOR:		N
	a) parts of lamps and lamp sockets after lamp removal		N
	b) parts to be replaced by operator only by the use of tool and warning marking		N
	Those parts not HAZARDOUS LIVE 10 s after interruption of supply	(see Forms A.6)	N
	Capacitance test if charge is received from internal capacitor	(see Forms A.6 and A.7)	N
6.2	Determination of accessible parts	(see Form A.6)	P
6.2.1	General		P
	Unless obviously determination of accessible parts as specified in 6.2.2 to 6.2.4		P
6.2.2	Examination		N
	- with jointed test finger (as specified B.2)		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- with rigid test finger (as specified B.1) and a force of 10 N		N
6.2.3	Openings above parts that are HAZARDOUS LIVE		N
	- test pin with length of 100 mm and 4 mm in diameter applied		N
6.2.4	Openings for pre-set controls		N
	- test pin with length of 100 mm and 4 mm in diameter applied		N
6.3	Limit values for ACCESSIBLE parts		P
6.3.1	Levels in NORMAL CONDITION	(see Form A.7)	P
	a) Voltage limits less than 33 V r.m.s. and 46,7 V peak or 70 V d.c.		P
	for wet locations voltage limits less than 16 V r.m.s. and 22,6 V peak or 35 V d.c.		N
	Voltages are not HAZARDOUS LIVE the levels of:		—
	b) Current less than 0,5 mA r.m.s. for sinusoidal, 0,7 mA peak non sinusoidal or mixed frequencies or 2 mA d.c. when measured with measuring circuit A.1 or A.2 if less than 100 Hz		P
	for wet locations measuring circuit A.4 used		N
	or		N
	c) Levels of capacitive charge or energy less:		N
	1) 45 μ C for voltages up to 15 kV peak or d.c. or line A of Figure 3		N
	2) 350 mJ stored energy for voltages above 15 kV peak or d.c.		N
6.3.2	Levels in SINGLE FAULT CONDITION	(see Form A.7)	P
	a) Voltage limits less than 33 V r.m.s. and 46,7 V peak or 70 V d.c.		P
	for wet locations voltage limits less than 16 V r.m.s. and 22,6 V peak or 35 V d.c.		N
	Voltages are not HAZARDOUS LIVE the levels of:		—
	b) Current less than 0,5 mA r.m.s. for sinusoidal, 0,7 mA peak non sinusoidal or mixed frequencies or 2 mA d.c. when measured with measuring circuit A.1 or A.2 if less than 100 Hz		P
	for wet locations measuring circuit A.4 used		N
	or		N
	c) Levels of capacitive charge or energy less:		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	1) 45 μ C for voltages up to 15 kV peak or d.c. or line A of Figure 3		N
	2) 350 mJ stored energy for voltages above 15 kV peak or d.c.		N
6.4	Primary means of protection		P
6.4.1	ACCESSIBLE parts prevented from being HAZARDOUS LIVE by one or more of following means:		P
	a) ENCLOSURES or PROTECTIVE BARRIERS (see 6.4.2)		P
	b) BASIC INSULATION (see 6.4.3)		P
	c) Impedance (see 6.4.4)		N
6.4.2	ENCLOSURES or PROTECTIVE BARRIERS	(see Form A.13)	P
	- meet rigidity requirements of 8.1		P
	- meet requirements for BASIC INSULATION, if protection is provided by insulation		P
	- meet requirements of 6.7 for CREEPAGE and CLEARANCES between ACCESSIBLE parts and HAZARDOUS live parts, if protection is provided by limited access		P
6.4.3	BASIC INSULATION	(see Form A.13)	P
	- meet CLEARANCE, CREEPAGE DISTANCE and solid insulation requirements of 6.7		P
6.4.4	Impedance	(see Form A.12)	N
	Impedance used as primary means of protection meets all of following requirements:		—
	a) limits current or voltage to level of 6.3.2	(see Form A.7)	N
	b) RATED for maximum WORKING VOLTAGE and the amount of power it will dissipate		N
	c) CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of BASIC INSULATION of 6.7	(see Form A.13)	N
6.5	Additional means of protection in case of SINGLE FAULT CONDITION		P
6.5.1	Accessible parts are prevented from becoming hazardous live by the primary means of protection and supplemented by one of:		P
	a) PROTECTIVE BONDING (see 6.5.2)		N
	b) SUPPLEMENTARY INSULATION (see 6.5.3)		P
	c) automatic disconnection of the supply (see 6.5.5)		N
	d) current- or voltage-limiting device (see 6.5.6)		N
	Alternatively one of the single means of protection is used:		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	e) REINFORCED INSULATION (see 6.5.3)		P
	f) PROTECTIVE IMPEDANCE (see 6.5.4)		N
6.5.2	Protective bonding	(see Form A.9, A.10 and A.11)	N
6.5.2.1	Accessible conductive parts, may become hazardous live in single fault condition:		N
	Bonded to the protective conductor terminal; or		N
	Separated by conductive screen or barrier bonded to protective conductor terminal		N
6.5.2.2	Integrity of protective bonding		N
	A) PROTECTIVE BONDING consists of directly connected structural parts or discrete conductors or both; and withstands thermal and dynamic stresses		N
	b) Soldered connections:		N
	Independently secured against loosening		N
	Not used for other purposes		N
	c) Screw connections are secured		N
	D) PROTECTIVE BONDING not interrupted; or		N
	exempted as removable part carries MAINS SUPPLY INPUT connection		N
	e) Any moveable PROTECTIVE BONDING connection specifically designed, and meets 6.5.2.4		N
	f) No external metal braid of cables used (not regarded as PROTECTIVE BONDING)		N
	G) IF MAINS SUPPLY PASSES THROUGH:		N
	Means provided for passing protective conductor;		N
	Impedance meets 6.5.2.4		N
	H) Protective conductors bare or insulated, if insulated, green/yellow		N
	Exceptions:		N
	1) earthing braids;		N
	2) internal protective conductors etc.;		N
	Green/yellow not used for other purposes		N
	TERMINAL suitable for connection of a PROTECTIVE CONDUCTOR, and meets 6.5.2.3		N
6.5.2.3	PROTECTIVE CONDUCTOR TERMINAL		N
	a) Contact surfaces are metal		N
	b) Appliance inlet used		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) For rewirable cords and PERMANENTLY CONNECTED EQUIPMENT, PROTECTIVE CONDUCTOR TERMINAL is close to MAINS supply TERMINALS		N
	d) If no MAINS supply is required, any PROTECTIVE CONDUCTOR TERMINAL:		N
	Is near terminals of circuit for which protective earthing is necessary		N
	External if other terminals external		N
	e) Equivalent current-carrying capacity to MAINS supply TERMINALS	(see Form A.9)	N
	f) If plug-in, makes first and breaks last		N
	g) If also used for other bonding purposes, protective conductor:		N
	Applied first;		N
	Secured independently;		N
	Unlikely to be removed by servicing		N
	h) PROTECTIVE CONDUCTOR of measuring circuit:		N
	1) Current RATING equivalent to measuring circuit TERMINAL;		N
	2) PROTECTIVE BONDING:		N
	Not interrupted; or		N
	i) FUNCTIONAL EARTH TERMINALS allow independent connection		N
	j) If a binding screw used for PROTECTIVE CONDUCTOR TERMINAL:		N
	Suitable size for bond wire		N
	Not smaller than M 4 (No. 6)		N
	At least 3 turns of screw engaged		N
	Passes tightening torque test	(see Form A.9)	N
	k) Contact pressure not capable being reduced by deformation of materials		N
6.5.2.4	Impedance of PROTECTIVE BONDING of plug-connected equipment	(see Form A.10)	N
	Impedance between PROTECTIVE CONDUCTOR TERMINAL and each ACCESSIBLE part where PROTECTIVE BONDING is specified, is:		—
	less than 0,1 Ohm; or		N
	less than 0,2 Ohm if equipment is provided with non detachable cord		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.5.2.5	Bonding impedance of PERMANENTLY CONNECTED EQUIPMENT	(see Form A.10)	N
6.5.2.6	Transformer PROTECTIVE BONDING screen	(see Form A.11)	N
	Transformer provided with screen for protective bonding:		N
	screen bonding consists of directly connected structural parts or discrete conductors or both; and withstands thermal and dynamic stresses (see 6.5.2.2 a)		N
	screen bonding with soldered connection (see 6.5.2.2 b) is:		N
	- Independently secured against loosening		N
	- Not used for other purposes		N
6.5.3	SUPPLEMENTARY and REINFORCED INSULATION		P
	- meet CLEARANCE, CREEPAGE DISTANCE and solid insulation requirements of 6.7		P
6.5.4	PROTECTIVE IMPEDANCE	(see Form A.12)	N
	Limits current or voltage to level of 6.3.1 in NORMAL and to level of 6.3.2 in SINGLE FAULT CONDITION		N
	CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of DOUBLE or REINFORCED INSULATION of 6.7	(see Form A.13)	N
	The protective impedance consists of one or more of the following:	(see Table 3 and Form A.12)	—
	a) appropriate single component suitable for safety and reliability for protection, it is:		N
	1) RATED twice the maximum WORKING VOLTAGE		N
	2) resistor RATED for twice the power dissipation for maximum WORKING VOLTAGE		N
	b) combination of components		N
	Single electronic device not used as PROTECTIVE IMPEDANCE		N
6.5.5	Automatic disconnection of the supply		N
	a) RATED to disconnect the load within time specified in Figure 2		N
	b) RATED for the maximum load conditions of the equipment		N
6.5.6	Current- or voltage limiting devices	(see Form A.12)	P
	Device complies with all of:		P
	a) RATED to limit the current or voltage to the level of 6.3.2	(see Form A.8)	P

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	b) RATED for the maximum working voltage; and		P
	RATED for the maximum operational current if applicable		P
	c) CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of SUPPLEMENTARY INSULATION of 6.7	(see Form A.13)	P
6.6	Connections to external circuits		P
6.6.1	Connections do not cause ACCESSIBLE parts of the following to become HAZARDOUS LIVE in NORMAL CONDITION or SINGLE FAULT CONDITION:		P
	- the external circuits		P
	- the equipment		P
	Protection achieved by separation of circuits; or		N
	short circuit of separation does not cause a HAZARD		P
	Instructions or markings for each terminal include:		P
	A) RATED conditions for TERMINAL		P
	B) Required RATING of external circuit INSULATION		N
6.6.2	TERMINALS for external circuits		N
	TERMINALS which receive a charge from an internal capacitor are not HAZARDOUS LIVE after 10 s of interrupting supply connection	(see Form A.7)	N
6.6.3	Circuits with terminals which are HAZARDOUS LIVE		P
	These circuits are:		P
	Not connected to ACCESSIBLE conductive parts; or		P
	Connected to ACCESSIBLE conductive parts, but are not MAINS circuits and have one TERMINAL contact at earth potential		N
	No ACCESSIBLE conductive parts are HAZARDOUS LIVE		P
6.6.4	ACCESSIBLE terminals for stranded conductors		N
	No RISK of accidental contact because:		N
	Located or shielded		N
	Self-evident or marked whether or not connected to ACCESSIBLE conductive parts		N
	ACCESSIBLE TERMINALS will not work loose		N
6.7	Insulation requirements	(see Form A.5)	P
6.7.1	The nature of insulation		P

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.7.1.1	Insulation between ACCESSIBLE parts or between separate circuits consist of CLEARANCES, CREEPAGE DISTANCES and solid insulation if provided as protection against a HAZARD		P
6.7.1.2	CLEARANCES		P
	Required CLEARANCES reflecting factors of 6.7.1.1	(see Form A.5)	P
	Equipment rated for operating altitude greater than 2000 m correction factor of Table 3 of 61010-1 applied		P
6.7.1.3	CREEPAGE DISTANCES		P
	Required CLEARANCES reflecting factors of 6.7.1.1	(see Form A.5)	P
	CTI material group reflected by requirements		P
	CTI test performed		P
6.7.1.4	Solid insulation		P
	Required CLEARANCES reflecting factors of 6.7.1.1	(see Form A.5)	P
6.7.1.5	Requirements for insulation according to type of circuit	(see Form A.5)	P
	A) 6.7.2 MAINS circuits of OVERVOLTAGE CATEGORY II up to nominal supply voltage of 300 V		P
	B) 6.7.3 Secondary circuits separated from circuits defined in a) by transformer		N
	C) K.1 MAINS circuits of OVERVOLTAGE CATEGORY III and IV or OVERVOLTAGE CATEGORY II over 300 V		N
	D) K.2 Secondary circuits separated from circuits defined in a) by transformer		N
	E) K.3 Circuits having one or more of:		N
	1) maximum TRANSIENT OVERVOLTAGE is limited to known level below the level of MAINS CIRCUIT		N
	2) maximum TRANSIENT OVERVOLTAGE above the level of MAINS CIRCUIT		N
	3) WORKING VOLTAGE is the sum of more than one circuit or a mixed voltage		N
	4) WORKING VOLTAGE includes recurring peak voltage, may include non-sinusoidal or non-periodic waveform		N
	5) WORKING VOLTAGE with a frequency above 30 kHz		N
6.7.2	Insulation for MAINS CIRCUITS of OVERVOLTAGE CATEGORY II with a nominal supply voltage up to 300 V		P
6.7.2.1	CLEARANCES and CREEPAGE DISTANCES	(see Form A.13)	P

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Values for MAINS CIRCUITS of table 4 are met		P
	Coatings to achieve reduction to POLLUTION DEGREE I comply with requirements of Annex H		N
6.7.2.2	Solid insulation		P
6.7.2.2.1	Withstands electrical and mechanical stresses in normal use and all RATED environmental conditions of 1.4		P
	Equipment passed voltage tests of 6.8.3 with values of Table 5	(see Form A.14)	P
	Complies as applicable:		P
	A) ENCLOSURE OR PROTECTIVE BARRIER Clause 8		P
	b) moulded and potted parts requirements of 6.7.2.2.2		N
	c) inner layers of printed wiring boards requirements of 6.7.2.2.3		N
	D) thin-film insulation requirements of 6.7.2.2.4		N
6.7.2.2.2	Moulded and potted parts		N
	Conductors between same two layers are separated by at least 0,4 mm after moulding is completed		N
6.7.2.2.3	Inner insulation layers of printed wiring boards		N
	Separated by at least 0,4 mm between same two layers		N
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		N
	a) thickness at least 0,4 mm		N
	b) insulation is assembled of minimum two separate layers, each RATED for test voltage of Table 5 for BASIC INSULATION		N
	c) insulation is assembled of minimum two separate layers, where the combination is rated for test voltage of Table 5 for REINFORCED INSULATION		N
6.7.2.2.4	Thin-film insulation		N
	Conductors between same two layers are separated by applicable CLEARANCES and CREEPAGE DISTANCES		N
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		N
	a) thickness at least 0,4 mm		N
	b) insulation is assembled of min two separate layers, each RATED for test voltage of Table 5 for BASIC INSULATION		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) insulation is assembled of min three separate layers, where the combination of two layers passed voltage tests of 6.8.3 with values of Table 5 for REINFORCED INSULATION	(see Form A.14)	N
6.7.3	Insulation for secondary circuits derived from MAINS of OVERVOLTAGE CATEGORY II up to 300 V		N
6.7.3.1	Secondary circuits where separation from MAINS CIRCUITS is achieved by a transformer providing:		—
	- REINFORCED INSULATION		N
	- DOUBLE INSULATION		N
	- screen connected to the PROTECTIVE CONDUCTOR TERMINAL		N
6.7.3.2	CLEARANCES		N
	a) meet the values of Table 6 for BASIC INSULATION and SUPPLEMENTARY INSULATION; or		N
	twice the values of Table 6 for REINFORCED INSULATION		N
	or		—
	B) pass the voltage tests of 6.8 with values of Table 6; with following adjustments:	(see Form A.14)	N
	1) values for REINFORCED INSULATION are 1,6 times the values for BASIC INSULATION		N
	2) if operating altitude is greater than 2000 m values of CLEARANCES multiplied with factor of Table 3		N
	3) minimum CLEARANCE is 0,2 mm for POLLUTION DEGREE 2 and 0,8 mm for POLLUTION DEGREE 3		N
6.7.3.3	CREEPAGE DISTANCES		N
	Based on WORKING VOLTAGE meets the values of Table 7 for BASIC and SUPPLEMENTARY INSULATION		N
	Values for REINFORCED INSULATION are twice the values of BASIC INSULATION		N
	Coatings to achieve reduction to POLLUTION DEGREE I comply with requirements of Annex H		N
6.7.3.4	Solid insulation		N
6.7.3.4.1	Withstands electrical and mechanical stresses in normal use and all RATED environmental conditions of 1.4		N
	a) Equipment passed voltage test of 6.8.3.1 for 5 s with VALUES of Table 6 for BASIC and SUPPLEMENTARY INSULATION	(see Form A.14)	N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	values for REINFORCED INSULATION are 1,6 times the values of BASIC INSULATION		N
	b) if WORKING VOLTAGE exceeds 300 V, equipment passed voltage test of 6.8.3.1 for 1 min with a test voltage of 1,5 times working voltage for BASIC or SUPPLEMENTARY INSULATION	(see Form A.14)	N
	value for REINFORCED INSULATION are twice the WORKING VOLTAGE		N
	Complies as applicable:		N
	1) ENCLOSURE or protective barrier Clause 8		N
	2) moulded and potted parts requirements of 6.7.3.4.2		N
	3) inner layers of printed wiring boards requirements of 6.7.3.4.3		N
	4) thin-film insulation requirements of 6.7.3.4.4		N
6.7.3.4.2	Moulded and potted parts		N
	Conductors between same two layers are separated by applicable distances of Table 8		N
6.7.3.4.3	Inner insulation layers of printed wiring boards		N
	Separated by at least by applicable distances of Table 8 between same two layers		N
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		N
	a) thickness at least applicable distance of Table 8		N
	b) insulation is assembled of minimum two separate layers, each RATED for test voltage of Table 6 for BASIC INSULATION		N
	c) insulation is assembled of min two separate layers, where the combination is rated for 1,6 times the test voltage of Table 6		N
6.7.3.4.4	Thin-film insulation		N
	Conductors between same two layers are separated by applicable CLEARANCES and CREEPAGE DISTANCES		N
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		N
	a) thickness at least applicable distance of Table 8		N
	b) insulation is assembled of min two separate layers, each RATED for test voltage of Table 6 for BASIC INSULATION		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) insulation is assembled of min three separate layers, where the combination of two layers passed voltage tests with 1,6 time values of Table 6:	(see Form A.14)	N
	a.c. test of 6.8.3.1; or		N
	d.c. test of 6.8.3.2 for circuits stressed only by d.c. voltages		N
6.8	Procedure for dielectric strength tests	(see Form A.5 and A.14)	P
6.9	Constructional requirements for protection against electric shock		P
6.9.1	If a failure could cause a HAZARD:		P
	a) Security of wiring connections		N
	b) Screws securing removable covers		P
	c) Accidental loosening		P
	d) CREEPAGE and CLEARANCES not reduced below the values of basic insulation by loosening		P
6.9.2	Material not to be used for safety relevant insulation:		P
	Easily damaged materials not used		P
	Non-impregnated hydroscopic materials not used		P
6.9.3	Colour coding		N
	Green-and-yellow insulation shall not be used except:		N
	a) protective earth conductors;		N
	b) protective bonding conductors;		N
	c) potential equilization conductors;		N
	d) functional earth conductors		N
6.10	Connection to MAINS supply source and connections between parts of equipment		N
6.10.1	MAINS supply cords		N
	RATED for maximum equipment current (see 5.1.3c)		N
	Cable complies with IEC 60227 or IEC 60245		N
	Heat-resistant if likely to contact hot parts		N
	Temperature RATING (cord and inlet)..... :		N
	Green/yellow used only for connection to PROTECTIVE CONDUCTOR TERMINALS		N
	Detachable cords with IEC 60320 MAINS connectors:		—
	Conform to IEC 60799; or		N
	Have the current RATING of the MAINS connector		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.10.2	Fitting of non-detachable MAINS supply cords		N
6.10.2.1	Cord entry		N
	Inlet or bushing smoothly rounded; or		N
	Insulated cord guard protruding >5D		N
6.10.2.2	Cord anchorage		N
	Protective earth conductor is the last to take the strain		N
	a) Cord is not clamped by direct pressure from a screw		N
	b) Knots are not used		N
	c) Cannot push the cord into the equipment to cause a HAZARD		N
	d) No failure of cord insulation in anchorage with metal parts		N
	e) Not to be loosened without a tool		N
	f) Cord replacement does not cause a HAZARD and method of strain relief is clear		N
	Push-pull and or torque test	(see Form A.15)	N
6.10.3	Plugs and connectors		N
	MAINS supply plugs, connectors etc., conform with relevant specifications		N
	If equipment supplied at voltages below 6.3.2.a) or from a sole source:		—
	Plugs of supply cords do not fit MAINS sockets above rated SUPPLY voltage		N
	MAINS type plugs used only for connection to MAINS supply		N
	Plug pins which receive a charge from an internal capacitor	(see Form A.7)	N
	Accessory MAINS socket outlets:		—
	a) Marking if accepts a standard MAINS plug (see 5.1.3e)		N
	b) Input has a protective earth conductor if outlet has EARTH TERMINAL CONTACT		N
6.11	Disconnection from supply source		N
6.11.1	Disconnects all current carrying conductors		N
6.11.2	Exceptions	Supplied by a small battery	P
6.11.3	Requirements according to type of equipment		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.11.3.1	PERMANENTLY CONNECTED EQUIPMENT and multi-phase equipment:		N
	Employs switch or circuit-breaker		N
	If switch or circuit-breaker is not part of the equipment, documentation requires:		—
	a) Switch or circuit-breaker to be included in building installation		N
	b) Suitable location easily reached		N
	c) Marking as disconnecting for the equipment		N
6.11.3.2	Single-phase cord-connected equipment		N
	Equipment is provided with one of the following:		N
	a) Switch or circuit-breaker		N
	b) Appliance coupler (disconnectable without tool)		N
	c) Separable plug (without locking device)		N
6.11.4	Disconnecting devices		N
	Electrically close to the SUPPLY		N
6.11.4.1	Switches and circuit-breakers		N
	When used as disconnection device:		—
	Meets IEC 60947-1 and IEC 60947-3		N
	Marked to indicate function..... :		N
	Not incorporated in MAINS cord		N
	Does not interrupt PROTECTIVE EARTH CONDUCTOR		N
6.11.4.2	Appliance couplers and plugs		N
	Where an appliance coupler or separable plug is used as the disconnecting device (see 6.11.3.2):		N
	Readily identifiable and easily reached by the operator		N
	Single-phase portable equipment cord length not more than 3 m		N
	PROTECTIVE EARTH CONDUCTOR connected first and disconnected last		N
7	PROTECTION AGAINST MECHANICAL HAZARDS		P
7.1	Equipment does not cause a mechanical HAZARD in NORMAL nor in SINGLE FAULT CONDITION		P
	Conformity is checked by 7.2 to 7.7		P
7.2	Sharp edges		P
	Easily touched parts are smooth and rounded		P

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Do not cause injury during NORMAL USE and		P
	Do not cause injury during SINGLE FAULT CONDITION		P
7.3	Moving parts		N
7.3.1	HAZARDS from moving parts limited to a tolerable level with the conditions specified in 7.3.2 and 7.3.5		N
	RISK assessment in accordance with 7.3.3 carried out		N
7.3.2	Exceptions		N
	Access to HAZARDOUS moving parts permitted under following circumstances:		N
	a) obviously intended to operate on parts or materials outside of the equipment		N
	inadvertent touching of moving parts minimized by equipment design (e .g. guards or handles)		N
	b) If operator access is unavoidable outside normal use following precautions have been taken:		N
	1) Access requires TOOL		N
	2) Statement about training in the instructions		N
	3) Warning markings on covers prohibiting access by untrained operators		N
	or symbol 14 with full details in documentation		N
7.3.3	RISK assessment for mechanical HAZARDS to body parts		N
	RISK is reduced to a tolerable level by protective measures as specified in Table 12		N
	Minimum protective measures:		N
	A. Low level measures		N
	B. Moderate measures		N
	C. Stringent measures		N
7.3.4	Limitation of force and pressure	(see Form A.16)	P
	Following levels are met in normal and single fault condition:		P
	Continuous contact pressure below 50 N / cm ² with force below 150 N		P
	Temporary force below 250 N for an area at least of 3 cm ² for a maximum duration of 0,75 s		P
7.3.5	Gap limitations between moving parts	(see Form A.16)	N
7.3.5.1	Access normally allowed		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	If levels of 7.3.4 exceeded and body part may be inserted minimum gap as specified in Table 13 assured in NORMAL and in SINGLE FAULT CONDITION		N
7.3.5.2	Access normally prevented		N
	Maximum gap as specified in Table 14 assured in NORMAL and in SINGLE FAULT CONDITION		N
7.4	Stability		N
	Equipment not secured to building structure is physical stable		N
	Stability maintained after opening of drawers etc. by automatic means, or		N
	warning marking requires the application of means		N
	Compliance checked by following tests as applicable:		—
	a) 10° tilt test for other than handheld equipment		N
	b) multi-directional force test for equipment exceeds height of 1 m and mass of 25 kg		N
	c) downward force test for floor-standing equipment		N
	d) overload test with 4 times maximum load for castor or support that supports greatest load		N
	e) castor or support that supports greatest load removed from equipment		N
7.5	Provisions for lifting and carrying		N
7.5.1	Equipment more than 18 kg :		—
	Has means for lifting or carrying; or		N
	Directions in documentation		N
7.5.2	Handles or grips		N
	Handles or grips withstand four times weight		N
7.5.3	Lifting devices and supporting parts		N
	Rated for maximum load; or		N
	tested with four times maximum static load		N
7.6	Wall mounting		N
	Mounting brackets withstand four times weight		N
7.7	Expelled parts		N
	Equipment contains or limits the energy		N
	Protection not removable without the aid of a tool		N
8	RESISTANCE TO MECHANICAL STRESSES		P

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.1	Equipment does not cause a HAZARD when subjected to mechanical stresses in NORMAL USE		P
	Normal protection level is 5 J		P
	Levels below 5 J but not less than 1 J are acceptable if all of following criteria are met:		N
	a) lower level justified by RISK assessment of manufacturer		N
	b) equipment installed in its intended application is not easily touched		N
	c) only occasional access during NORMAL USE		N
	d) IK code in accordance to IEC 62262 marked or symbol 14 used with full information in the documentation		N
	For non-metallic ENCLOSURES rated below 2 °C ambient temperature value chosen for minimum rated temperature		N
	Impact energies between IK values, the IK code marked for nearest lower value		N
	Conformity is checked by performing following tests:		—
	1) static test of 8.2.1		P
	2) impact test of 8.2.2 with 5 J except for HAND-HELD EQUIPMENT		P
	if impact energy not selected to 5 J alternate method of IEC 62262 used		N
	3) drop test of 8.3.1 or 8.3.2 except for FIXED and EQUIPMENT with mass over 100 kg		P
	Equipment rated with an impact rating of IK 08 that obviously meets the criteria		N
	After the tests inspection with following results:		—
	- HAZARDOUS LIVE parts above the limits of 6.3.2 not ACCESSIBLE		P
	- insulation pass the voltage tests of 6.8	(see Form A.24)	P
	i) no leaks of corrosive and harmful substances		P
	ii) ENCLOSURE shows no cracks resulting in a HAZARD		P
	iii) CLEARANCES not less than their permitted values		P
	iv) insulation of internal wiring remains undamaged		P
	v) PROTECTIVE BARRIERS not damaged or loosened		P
	vi) No moving parts exposed, except permitted by 7.3		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	vii) no damage which could cause spread of fire		P
8.2	ENCLOSURE rigidity test		P
8.2.1	Static test		P
	- 30 N with 12 mm rod to each part of ENCLOSURE		P
	- in case of doubt test conducted at maximum RATED ambient temperature		N
8.2.2	Impact test		P
	Impact applied to any part of ENCLOSURE causing a HAZARD if damaged		P
	Impact energy level and corresponding IK code..... :		P
	Non-metallic ENCLOSURES cooled to minimum RATED ambient temperature if below 2 °C		P
8.3	Drop test		P
8.3.1	Other than HAND-HELD and DIRECT-PLUG-IN EQUIPMENT		P
	Tests conducted with a drop height or angle of..... :		P
8.3.2	HAND-HELD and DIRECT-PLUG-IN EQUIPMENT		N
	Non-metallic ENCLOSURES cooled to minimum RATED ambient temperature if below 2 °C		N
	Drop test conducted with an height of 1 m		N

9	PROTECTION AGAINST THE SPREAD OF FIRE		P
9.1	No spread of fire in NORMAL and SINGLE FAULT CONDITION		P
	MAINS supplied equipment meets requirements of 9.6 additionally		P
	Conformity is checked by minimum one or a combination of the following (see Figure 11):	(see Form A.17)	P
	a) Fault test of 4.4; or	(see Form A.1 and Form A.2)	P
	b) Application of 9.2 (eliminating or reducing the sources of ignition); or		N
	c) Application of 9.3 (containment of fire within the equipment)		P
9.2	Eliminating or reducing the sources of ignition within the equipment		N
	a) 1) Limited-energy circuit (see 9.4); or		N
	2) BASIC INSULATION provided for parts of different potential; or	(see Form A.5 and A.14)	N
	Bridging the insulation does not cause ignition	(see Form A.2)	N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	b) Surface temperature of liquids and parts (see 9.5)		N
	c) No ignition in circuits designed to produce heat	(see Form A.2)	N
9.3	Containment of the fire within the equipment, should it occur		P
	a) Energizing of the equipment is controlled by an operator held switch		N
	b) ENCLOSURE is conform with constructional requirements of 9.3.1; and		P
	Requirements of 9.5 are met		N
9.3.1	Constructional requirements		P
	a) Connectors and insulating material have flammability classification V-2 or better	(see Table: 3 or Form A.18)	P
	b) Insulated wires and cables are flame retardant (VW-1 or equivalent)	(see Table: 3 or Form A.18)	P
	c) ENCLOSURE meets following requirements:	(see Form A.17)	P
	1) Bottom and sides in arc of 5 ° (see Figure 13) to non-limited circuits (9.4) meets:		P
	i) no openings; or		P
	ii) perforated as specified in Table 16; or		N
	iii) metal screen with a mesh; or		N
	iv) baffles as specified in Figure 12		N
	2) Material of ENCLOSURE and any baffle or flame barrier is made of:		P
	Metal (except magnesium); or		N
	Non-metallic materials have flammability classification V-1 or better	(see Table: 3 or Form A.18)	P
	3) ENCLOSURE and any baffle or flame barrier have adequate rigidity		P
9.4	Limited-energy circuit	(see Form A.19)	P
	a) Potential not more than 30 r.m.s. and 42.4 V peak, or 60 V dc	3.0VDC	P
	b) Current limited by one of following means:		P
	1) Inherently or by impedance (see Table 17); or	the output of battery is considered inherently limited-energy circuit	P
	2) Over current protective device (see Table 18); or		N
	3) A regulating network limits also in SINGLE FAULT CONDITION (see Table 17)		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) Is separated by at least BASIC INSULATION		N
	Fuse or a nonadjustable electromechanical device is used		N
9.5	Requirements for equipment containing or using flammable liquids		N
	Flammable liquids contained in or specified for use with equipment do not cause spread of fire	(see Form A.20)	N
	RISK is reduced to a tolerable level :		N
	a) The temperature of surface or parts in contact with flammable liquids is 25 °C below fire point		N
	b) The quantity of liquid is limited		N
	c) Flames are contained within the equipment		N
	Detailed instructions for RISK-reduction provided		N
9.6	Overcurrent protection	Appliance not energized by mains.	N
9.6.1	MAINS supplied equipment protected		N
	BASIC INSULATION between MAINS parts of opposite polarity provided	(see Form A.14)	N
	Devices not in the protective conductor		N
	Fuses or single-pole circuit-breakers not fitted in neutral (multi-phase)		N
9.6.2	PERMANENTLY CONNECTED EQUIPMENT		N
	Overcurrent device:		N
	Fitted within the equipment; or		N
	Specified in manufacturer's instructions		N
9.6.3	Other equipment		N
	Protection within the equipment		N
10	EQUIPMENT TEMPERATURE LIMITS AND RESISTANCE TO HEAT		P
10.1	Surface temperature limits for protection against burns		P
	Easily touched surfaces within the limits in NORMAL and in SINGLE FAULT CONDITION:	(see Form A.21A)	P
	- at an specified ambient temperature of 40 °C		P
	- for equipment rated above 40 °C ambient temperature limits not exceeded raised by the difference to 40 °C		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Heated surfaces necessary for functional reasons exceeding specified values:		N
	Are recognizable as such by appearance or function; or		N
	Are marked with symbol 13		N
	Guards are not removable without tool		N
10.2	Temperatures of windings		N
	Limits not exceeded in:	(see Form A.21B)	N
	NORMAL CONDITION		N
	SINGLE FAULT CONDITION		N
10.3	Other temperature measurements		P
	Following measurements conducted if applicable:	(see Form A.21A)	P
	a) Value of 60 °C of field-wiring terminal box not exceeded		N
	b) Surface of flammable liquids and parts in contact with this liquids		N
	c) Surface of non-metallic ENCLOSURES		P
	d) Parts made of insulating material supporting parts connected to MAINS supply		N
	e) Terminals carrying a current more than 0,5 A		N
10.4	Conduct of temperature test		P
10.4.1	Tests conducted under reference test conditions and manufacturer's instructions	(see Form A.21A)	P
10.4.2	Temperature measurement of heating equipment		N
	Tests conducted in test corner	(see Form A.21A)	N
10.4.3	Equipment intended for installation in a cabinet or wall		N
	Equipment built in as specified in installation instructions	(see Form A.21A)	N
10.5	Resistance to heat		P
10.5.1	Integrity of CLEARANCE and CREEPAGE DISTANCES	(see Form A.13)	P
10.5.2	Non-metallic ENCLOSURES	(see Form A.22)	P
	Within 10 min after treatment:		—
	Equipment subjected to suitable stresses of 8.2 and 8.3 complying with criteria of 8.1		P
10.5.3	Insulating material	Plastic for enclosure	P
	a) Parts supporting parts connected to MAINS supply	Battery operated, not connect to the mains	N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	b) TERMINALS carrying a current more than 0.5 A		N
	Examination of material data; or		N
	in case of doubt:		N
	1) Ball pressure test; or		N
	2) Vicat softening test of ISO 306		N
11	PROTECTION AGAINST HAZARDS FROM FLUIDS	No fluids used	N
11.1	Protection to OPERATORS and surrounding area provided by EQUIPMENT		N
	All fluids specified by manufacturer considered		N
11.2	Cleaning	(see Form A.24)	N
11.3	Spillage	(see Form A.24)	N
11.4	Overflow	(see Form A.24)	N
11.5	Battery electrolyte		N
	Battery electrolyte leakage presents no HAZARD		N
11.6	Specially protected equipment	(see Form A.24)	N
11.7	Fluid pressure and leakage		N
11.7.1	Maximum pressure.....:	(see Form A.25)	N
	Maximum pressure of any part does not exceed P _{RATED}		N
11.7.2	Leakage and rupture at high pressure		N
	Fluid containing parts subjected to hydraulic test if:	(see Form A.25)	N
	a) product of pressure and volume > 200 kPa; and		N
	b) pressure > 50 kPa		N
	Parts of refrigerating systems meets pressure-related requirements of IEC 60335-24 or IEC 60335-24		N
11.7.3	Leakage from low-pressure parts	(see Form A.25)	N
11.7.4	Overpressure safety device		N
	Does not operate in NORMAL USE		N
	a) Connected as close as possible to parts intended to be protected		N
	b) Easy access for inspection, maintenance and repair		N
	c) Adjustment only with TOOL		N
	d) No discharge towards person		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	e) No HAZARD from deposit of discharged material		N
	f) Adequate discharge capacity		N
	No shut-off valve between overpressure safety device and protected parts		N
12	PROTECTION AGAINST RADIATION, INCLUDING LASER SOURCES, AND AGAINST SONIC AND ULTRASONIC PRESSURE		N
12.1	Equipment provides protection		N
12.2	Equipment producing ionizing radiation		N
12.2.1	Ionizing radiation	(see Form A.26)	N
12.2.1.1	Equipment meets the following requirements:		N
	a) if intended to emit radiation meets requirements of 12.2.1.2; or		N
	tested, classified and marked in accordance to IEC 60405		N
	b) if only emits stray radiation meets requirements of 12.2.1.3		N
12.2.1.2	Equipment intended to emit radiation		N
	Effective dose rate of radiation measured.....:		N
	If dose rate exceeds 5 µSv/h marked with the following:		N
	a) Symbol 17 (ISO 361)		N
	b) Abbreviations of the radionuclides.....:		N
	c) With maximum dose at 1 m; or.....:		N
	with dose rate value between 1 µSv/h and 5 µSv/h in m.....:		N
12.2.1.3	Equipment not intended to emit radiation		N
	Limit for unintended stray radiation of 1 µSv/h at any easily reached point kept		N
12.2.2	Accelerated electrons		N
	Compartments opened only by the use of a TOOL		N
12.3	Ultraviolet (UV) radiation		N
	No unintentional HAZARDOUS escape of UV radiation:		—
	- checked by inspection; and		N
	- evaluation of RISK assessment documentation		N
12.4	Micro-wave radiation		N
	Power density does not exceed 10 W/m ²:		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
12.5	Sonic and ultrasonic pressure		N
12.5.1	Sound level	(see Form A.27)	N
	No HAZARDOUS sound emission		N
	Maximum sound pressure level measured and calculated for maximum sound power level as specified in ISO 3746 or ISO 9614-1		N
	Instruction describes measures for protection		N
12.5.2	Ultrasonic pressure	(see Form A.27)	N
	Equipment not intended to emit ultrasound does not exceed limit of 110 dB between 20 kHz and 100 kHz		N
	Equipment intended to emit ultrasound:		N
	Outside useful beam does not exceed limit of 110 dB between 20 kHz and 100 kHz		N
	If inside useful beam above values exceeded:		N
	Marked with Symbol 14 of Table 1		N
	and following information in the documentation:		N
	a) dimensions of useful beam		N
	b) area where ultrasonic pressure exceed 110 dB		N
	c) maximum sound pressure inside beam area		N
12.6	Laser sources		N
	Equipment meets requirements of IEC 60825-1		N

13	PROTECTION AGAINST LIBERATED GASES, EXPLOSION AND IMPLOSION		N
13.1	Poisonous and injurious gases		N
	No poisonous or injurious gases or substances liberated in NORMAL CONDITION		N
	Attached data/test reports demonstrate conformity		N
13.2	Explosion and implosion		N
13.2.1	Components		N
	Components liable to explode:		—
	Pressure release device provided; or		N
	Apparatus incorporates operator protection (see also 7.7)		N
	Pressure release device:		—
	Discharge without danger		N
	Cannot be obstructed		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
13.2.2	Batteries and battery charging	(see Form A.28)	N
	If explosion or fire HAZARD could occur:		—
	Protection incorporated in the equipment; or		N
	Instructions specify batteries with built-in protection		N
	In case of wrong type of battery used:		—
	No HAZARD; or		N
	Warning by marking and within instructions		N
	Equipment with means to charge rechargeable batteries:		—
	Warning against the charging of non-rechargeable batteries; and		N
	Type of rechargeable battery indicated; or		N
	Symbol 14 used		N
	Battery compartment design		N
	Single component failure		N
	Polarity reversal test		N
13.2.3	Implosion of cathode ray tubes		N
	If maximum face dimensions > 160 mm.....:		—
	Intrinsically protected and correctly mounted; or		N
	ENCLOSURE provides protection:		N
	If non-intrinsically protected:		—
	Screen not removable without TOOL		N
	If glass screen, not in contact with surface of tube		N

14	COMPONENTS AND SUBASSEMBLIES		P
14.1	Where safety is involved, components and subassemblies meet relevant requirements	(see Table 3)	P
14.2	Motors		N
14.2.1	Motor temperatures		N
	Does not present a HAZARD when stopped or prevented from starting; or	(see Form A.21)	N
	Protected by over-temperature or thermal protection device conform with 14.3		N
14.2.2	Series excitation motors		N
	Connected direct to device, if over-speeding causes a HAZARD		N
14.3	Overtemperature protection devices		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Devices operating in a SINGLE FAULT CONDITION	(see Form A.29)	N
	a) Reliable function is ensured		N
	B) RATED to interrupt maximum current and voltage		N
	c) Does not operate in NORMAL USE		N
	If self-resetting device used to prevent a HAZARD, protected part requires intervention before restarting		N
14.4	Fuse holders		P
	No access to HAZARDOUS LIVE parts		P
14.5	MAINS voltage selecting devices		N
	Accidental change not possible		N
14.6	MAINS transformers tested outside equipment	(see Forms A.30 and A.31)	N
14.7	Printed circuit boards		P
	Data shows conformity with V-1 of IEC 60695-11-10 or better; or	V-0	P
	Test shows conformity with V-1 of IEC 60695-11-10 or better	(see Form A.18)	N
	Not applicable for printed wiring boards with limited-energy circuits (9.4)		N
14.8	Circuits or components used as transient overvoltage limiting devices		N
	Test conducted between each pair of MAINS SUPPLY TERMINALS	(see Form A.32)	N
	No HAZARD resulting from rupture or overheating of the component:		N
	- no bridging of safety relevant insulation		N
	- no heat to other parts above the self-ignition points		N
15	PROTECTION BY INTERLOCKS		N
15.1	Interlocks are designed to remove a HAZARD before OPERATOR exposed		N
15.2	Prevention of reactivation		N
15.3	Reliability		N
	Single fault unlikely to occur; or		N
	Cannot cause a HAZARD		N
16	HAZARDS RESULTING FROM APPLICATION		N
16.1	REASONABLY FORESEEABLE MISUSE		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict

	No HAZARDS arising from settings not intended and not described in the instructions		N
	Other cases of REASONABLY FORESEEABLE MISUSE addressed by RISK assessment		N
16.2	Ergonomic aspects		N
	Factors giving rise to a HAZARD the RISK assessment is reflecting those aspects:		N
	a) limitation of body dimensions		N
	b) displays and indicators		N
	c) accessibility and conventions of controls		N
	d) arrangement of TERMINALS		N

17	RISK assessment		N
	RISK assessment conducted, if HAZARD might arise and not covered by Clauses 6 to 16		N
	TOLERABLE RISK achieved by iterative documented process covering the following:		N
	a) RISK analysis		N
	Identifies HAZARDS and estimates RISK		N
	b) RISK evaluation		N
	Plan to judge acceptability of resulting RISK level based on the estimated severity and likelihood of a RISK		N
	c) RISK reduction		N
	Initial RISK reduced by counter measures;		N
	Repeated RISK evaluation without new RISKS introduced		N
	RISKS remaining after RISK assessment addressed in instructions to RESPONSIBLE BODY:		N
	Information contained how to mitigate these RISKS		N
	Following principles in methods of RISK reduction applied by manufacturer in given order:		N
	1) RISKS eliminated or reduced as far as possible		N
	2) Protective measures taken for RISKS that cannot be eliminated		N
	3) User information about residual RISK due to any defect of the protective measures		N
	Indication of particular training is required		N

IEC/EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Specification of the need for personal protective equipment		N
	Conformity checked by evaluation of the RISK assessment documentation		N
ANNEX F	ROUTINE TESTS	Carried out by manufacturer.	N
	Manufacturer 's declaration		N

IEC 61010-1				
Clause	Requirement — Test	Result — Remark		Verdict
4.4.2	TABLE: Summary of SINGLE FAULT CONDITIONS			Form A.1
				P
Subclause	Title	Does not apply	Carried out	Comments
4.4.2.1	SINGLE FAULT CONDITIONS not covered by 4.4.2.2 to 4.4.2.14		X	see Form A.2
4.4.2.2	PROTECTIVE IMPEDANCE	X		
4.4.2.3	PROTECTIVE CONDUCTOR	X		see Form A.8
4.4.2.4	Equipment or parts for short-term or intermittent operation	X		
4.4.2.5	Motors	X		
	– stopped while fully energized	X		
	– prevented from starting	X		
	– one phase interrupted (multi-phase)	X		
4.4.2.6	Capacitors	X		
4.4.2.7	MAINS transformers Attach drawing of MAINS transformers showing all protective devices (see Forms A.30 and A.31)	X		
4.4.2.8	Outputs		X	
4.4.2.9	Equipment for more than one supply	X		
4.4.2.10	Cooling – air holes closed – fans stopped – coolant stopped – loss of cooling liquid	X X X X X		
4.4.2.11	Heating devices – timer overridden – temperature controller overridden	X X X		
4.4.2.12	Insulation between circuits and parts	X		
4.4.2.13	Interlocks	X		
4.4.2.14	Voltage selectors	X		
List below all SINGLE FAULT CONDITIONS not covered by 4.4.2.2 to 4.4.2.14:				
-	semi-conductor components short-circuited.		X	
Supplementary information: (see Form A.2 for details of tests)				

IEC 61010-1				
Clause	Requirement — Test	Result — Remark		Verdict
4.4	TABLE: Testing in SINGLE FAULT CONDITION – Results	Form A.2		P
Fault No.	Fault description	Td 4.4.3 (NOTE)	How was test terminated Comments	Meets 4.4.4
1	Q18A	00:10:00	Normal work, no hazards.	Yes
2	R20	00:10:00	Normal work, no hazards.	Yes
3	R37	00:10:00	Normal work, no hazards.	Yes
4	D1	00:10:00	Unit shutdown, no hazards.	Yes
NOTE Td = Test duration in hh:mm:ss Record dielectric strength test on Form A.14 and temperature tests on Form A.21. Record in the comments column for each test whether carried out during or after SINGLE FAULT CONDITION.				
Supplementary information:				

IEC 61010-1						
Clause	Requirement — Test				Result — Remark	Verdict
5.1.3c)	TABLE: MAINS supply				Form A.3	N
	Marked rating..... :		--	V		—
	Phase..... :		--			—
	Frequency :		--	Hz		—
	Current :		--	A		—
	Power :		--	W		—
	Power :		--	VA		—
Test No.	Voltage V	Frequency Hz	Current A	Power in W	Power in VA	Comments
1						
2						
3						
Note – Measurements are only required for marked ratings.						
Supplementary information:						

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict

5.3	TABLE: Durability of markings	Form A.4	P
Marking method (see NOTE)		Agent	
1) Adhesive label		A Water	
2) Ink printed		B Isopropyl alcohol 70%	
3) Laser marked		C (specify agent)	
4) Filmcoated (plastic foil control panel)		D (specify agent)	
5) Imprinted on plastic (moulded in)		E (specify agent)	

NOTE – Where applicable include print method, label material, ink or paint type, fixing method, adhesive and surface to which marking is fixed.

Marking location	Marking method (see above)
Identification (5.1.2)	1
MAINS supply (5.1.3)	--
Fuses (5.1.4)	1
terminals and operating devices (5.1.5.2)	--
Switches and circuit breakers (5.1.6)	--
Double/reinforced equipment (5.1.7)	5
Field wiring Terminal boxes (5.1.8)	--
Warning marking (5.2)	5
Battery charging (13.2.2)	--

Method	Test agent	Remains legible	Label loose	Curled edges	Comments
		Verdict	Verdict	Verdict	
1	A / B	Yes / No	Yes / No	Yes / No	P / F / NA
1	A / B	Yes / No	Yes / No	Yes / No	P / F / NA
5	A / B	Yes / No	Yes / No	Yes / No	P / F / NA
5	A / B	Yes / No	Yes / No	Yes / No	P / F / NA

Supplementary information:

IEC 61010-1										
Clause	Requirement — Test						Result — Remark		Verdict	
6	TABLE: Protection against electric shock - Block diagram of system Form A.5								P	
Pollution degree.....: 2					Overvoltage category.....: II					
Location or description	Insulation type (NOTE 1)	Maximum working voltage (NOTE 2)	CREEPAGE Distance (NOTE 3)				CLEARANCE (NOTE 3) mm	Test voltage (NOTE 2) V	Comments	
			PWB mm	CTI	Other mm	CTI				
Live part and enclosure	RI	600V	-	-	>12.0	--	>6.0	3510V rms	--	
fuse (F1)	BI	600V	>6.0	-	--	--	>3.0	2210V rms		
NOTE 1 – Type of insulation: BI = BASIC INSULATION DI = DOUBLE INSULATION PI = PROTECTIVE IMPEDANCE RI = Reinforced INSULATION SI = Supplementary INSULATION			NOTE 2 - Types of voltage Peak impulse test voltage (pulse) r.m.s. d.c. peak				NOTE 3 - INSTALLATION CATEGORIES (OVERVOLTAGE CATEGORIES) OR POLLUTION DEGREES which differ from these should be shown under "Comments".			
Supplementary Information:										

6.2	TABLE: List of ACCESSIBLE parts			Form A.6	P
6.1.2	Exceptions				—
6.2	Determination of ACCESSIBLE parts				—
Item	Description	Determination method (NOTE 5)		Exception under 6.1.2 (NOTE 4)	
1	Plastic enclosure, reinforced insulation is provided.	Visual, test finger and rigid test finger		--	
NOTE 1 – Test fingers and pins are to be applied without force unless a force is specified (see 6.2.2) NOTE 2 – Special consideration should be given to inadequate insulation and high voltage parts (see 6.2) NOTE 3 – Parts are considered to be ACCESSIBLE if they could be touched in the absence of any covering which is not considered to provide suitable insulation (see 6.4). NOTE 4 – Capacitor test may be required (see Form A.7). NOTE 5 – The determination methods are: V = visual; R = rigid test finger; J = jointed test finger; P3 = pin 3 mm diameter; P4 = pin 4 mm diameter.					
Supplementary information:					

IEC 61010-1

Clause	Requirement — Test	Result — Remark	Verdict
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6	TABLE: Values in NORMAL CONDITION	Form A.7	P
6.1.2	Exceptions		—
6.3.1	Values in NORMAL CONDITION (see NOTE 1)		—
6.6.2	Terminals for external circuit		—
6.10.3	Plugs and connections		—

Item	Voltage			Current			Capacitance		10 s / 5 s test (NOTE)			Comments	
	V r.m.s.	V peak	V d.c.	Test circuit A1/A2/A3	mA r.m.s.	mA peak	mA d.c.	μC	mJ	V	μC		mJ
(see Form A.6)													
Enclosure	-	-	--	A1	0.04mA	-	-	-	-	-	-	-	-

NOTE – A 10 s test is specified in 6.1.2 a) b). A 5 s test is specified in 6.10.3. The capacitance level versus voltage below the limits given from figure 3 of IEC 61010-1.

Supplementary information:

IEC 61010-1

Clause	Requirement — Test	Result — Remark	Verdict
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6.3.2		TABLE: Values in SINGLE FAULT CONDITION										Form A.8	P
Item	Subclause and	Voltage			Transient (see NOTE)		Current			Capacitance			
(see Form A.6)	fault No. (see Form A.2)	V r.m.s.	V peak	V d.c.	V	s	Test circuit A1/A2/A3	mA r.m.s.	mA peak	mA d.c.	µF (see NOTE)	Comments	
Enclosure	s-c R12	--	--	--	--	--	A1	0.03	--	--	--	--	
Enclosure	s-c R39	--	--	--	--	--	A1	0.03	--	--	--	--	

NOTE – Transient voltages must be below the limits given from Figure 2 and the capacitance below the limits from figure 3 of IEC 61010-1.

Supplementary information:

IEC 61010-1				
Clause	Requirement — Test		Result — Remark	Verdict
6.5.2.2	TABLE: Cross-sectional area of bonding conductors		Form A.9	N
	CONDUCTOR LOCATION	CROSS-SECTIONAL AREA mm ²		VERDICT
				Pass
6.5.2.3	TABLE: Tighting torque test			N
	Conductor location	Size of screw	Tighting torque Nm	Verdict
Supplementary information:				

IEC 61010-1				
Clause	Requirement — Test			Result — Remark
6.5.2.4	TABLE: Bonding impedance of plug connected equipment			Form A.10
	ACCESSIBLE part under test	Test current A	Voltage attained after 1 min V (NOTE 2)	Calculated resistance (Maximum 0,1 or 0,2 Ω) Ω (NOTE 1)
				Verdict
NOTE 1 – For none-detachable power cord the impedance between protective conductor plug pin of MAINS cord and each ACCESSIBLE part shall not exceed 0,2 Ohm.				
Supplementary information:				

IEC 61010-1				
Clause	Requirement — Test			Result — Remark
6.5.2.5	TABLE: Bonding impedance of permanently connected equipment			Form A.11
	ACCESSIBLE part under test	Test current A	Voltage attained after 1 min (maximum 10 V) V	Verdict
Supplementary information:				

IEC 61010-1				
Clause	Requirement — Test			Result — Remark
6.5.2.6	TABLE: Transformer PROTECTIVE BONDING screen			Form A.11
	ACCESSIBLE part under test	Test current (see NOTE) A	Voltage attained after 1 min (maximum 10 V) V	Calculated resistance (maximum 0,1 Ω) Ω
				Verdict
NOTE – Test current must be twice the value of the overcurrent protection means of the winding. Test is specified in 6.5.2.6 a) or b).				
Supplementary information:				

IEC 61010-1

Clause	Requirement — Test	Result — Remark	Verdict
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6.5.4	TABLE: protective impedance	Form A.12	N
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A single component								
Component	Location	Measured		Calculated	Rated		Verdict	Comments
		Working voltage V	Current A	Power dissipation W	Working voltage V	Power dissipation W		

A combination of components		
Component	Location	Comments

NOTE – A PROTECTIVE IMPEDANCE shall not be a single electronic device that employs electron conduction in a vacuum, gas or semiconductor.

Supplementary information:

6.5.6	TABLE: Current- or voltage-limiting device	N
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Component	Location	Measured		Rated		Verdict	Comments
		Working voltage V	Current A	Working voltage V	Current A		
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:

IEC 61010-1

Clause	Requirement — Test	Result — Remark		Verdict									
6.7	TABLE: CLEARANCES and CREEPAGE distances			Form A.13									
6.4.2	ENCLOSURES and protective barriers	8	Mechanical resistance to shock and impact	—									
6.4.4	Impedance	9.6.1	Overcurrent protection basic insulation between MAINS parts	—									
6.5.4	Protective impedance	10.5.1	Integrity of CLEARANCES and CREEPAGE distances	—									
6.5.6	Current- or voltage-limiting device			—									
Location (see Form A.5)	Measured (initial – 6.7)		Verdict	Mechanical tests (note)					Test at max. RATED ambient	Measured after test (if required)		Verdict	Comments
	CREEPAGE DISTANCE	CLEARANCE		Applied force	Rigidity (8.2)		Drop (8.3)			CREEPAGE DISTANCE	CLEARANCE		
	mm	mm		N	Static (8.2.1)	Impact (8.2.2)	Normal (8.3.1)	Hand-held/ Plug-in		(10.5.1)	mm		
Enclosure and live parts	>12	>12	P	30N	P	P	P	-	40°C	>12	>12	P	RI

NOTE – Refer to Form A.14 for dielectric strength tests following the above tests.

Supplementary information:

IEC 61010-1						
Clause	Requirement — Test			Result — Remark		Verdict
6.8	TABLE: Dielectric strength tests				Form A.14	P
4.4.4.1 b)	Conformity after application of SINGLE FAULT CONDITIONS ¹					P
6.4	Primary means of protection ²					P
6.6	Connections to external circuits					N
6.7.	Insulation requirements ² (see Annex K)					P
6.10.2	Fitting of non-detachable MAINS supply cords ¹					N
9.2 a) 2)	Eliminating or reducing the sources of ignition within the equipment					N
9.4 c)	Limited-energy circuit					N
9.6.1	Overcurrent protection basic insulation between MAINS - parts					P
¹ Record the fault, test or treatment applied before the dielectric strength test. ² Humidity preconditioning required.						
Test site altitude.....:				Normal		—
Test voltage correction factor (see Table 10).....:				Nil		—
Location or references from Forms A.2 and A.5	Clause or sub-clause	Humidity Yes/No	Working voltage V	Test voltage r.m.s./peak/d.cV	Comments	Verdict
V to COM	4.4.4.1 b), 6.4, 6.7, 9.6.1	Yes	600V rms	2210 V rms	BI	P
Live part and plastic enclosure	4.4.4.1 b), 6.4, 6.7, 9.6.1	Yes	600V rms	3510 V rms	RI	P
Supplementary information:						

6.10.2		TABLE: Cord anchorage				Form A.15	N
Location		Mass kg	Pull N	Verdict	Torque Nm	Verdict	Comment
Dielectric strength test for 1 min. (6.8.3.1).....:					V r.m.s.		
Supplementary information:							

IEC 61010-1															
Clause	Requirement — Test					Result — Remark								Verdict	
7.	TABLE: Protection against mechanical HAZARDS													Form A.16	P
7.3.4	Limitation of force and pressure													—	
7.3.5	Gap limitations between moving parts													—	
	Clause 7.3.4		Clause 7.3.5.1							Clause 7.3.5.2					
	Continuous	Temporary	Minimum gaps (mm)							Maximum gaps (mm)					
Part / Location	Contact préure max. 50 N /cm ² @ max. 150 N	max. 250 N / 3 cm ² @ max. 0,75 s	Torso 500	Head 300	Leg 180	Foot 120	Toes 50	Arm 120	Hand 100	Finger 25	Head 120	Foot 35	Finger 4	Verdict	Comments
Enclosure	max. 50 N /cm ² @ max. 150 N	max. 250 N / 3 cm ² @ max. 0,75 s	--	--	--	--	--	--	--	--	--	--	--	P	
Supplementary information:															

9	TABLE: Protection against the spread of fire			Form A.17	P
Item	Source of HAZARD or area of the equipment considered (circuit, component, liquid etc.)	Protection Method (9a, 9b or 9c)	Protection details		Verdict
1	Testing in single fault condition (see form A.2 and form A.32)	9a	Tested in appliance, no fire, no hazards.		P
2	Plastic enclosure and PCB	9c	Comply with CI 9.3.1		P
Supplementary information:					

IEC 61010-1				
Clause	Requirement — Test	Result — Remark		Verdict
9.3.2	TABLE: Constructional requirements	Form A.18		N
14.7	Printed circuit boards	PCB approved		N
Material tested..... :				
Generic name..... :				
Material manufacturer..... :				
Type..... :				
Colour..... :				
Conditioning details..... :				
		Sample 1	Sample 2	Sample 3
Thickness of specimen	mm			
Duration of flaming after first Application	s			
Duration of flaming plus glowing After second application	s			
Specimen burns to holding clamp	Yes/No			
Cotton ignited	Yes/No			
Sample result	Pass/Fail			
Supplementary information:				

IEC 61010-1

Clause	Requirement — Test	Result — Remark	Verdict
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9.4	TABLE: Limited-energy circuit					Form A.19	P
Item	9.4 a)	9.4 b) Current and power limitation			9.4 c)	Decision	
or Location (see Form A.17)	Maximum potential in circuit voltage r.m.s./d.c. V	Maximum available current A	Maximum available power VA	Overload protection after 120 s A	Circuit separation	Yes/No	Comments
Supplementary information: battery supplied and is considered limited –energy circuit							

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict

9.5	TABLE: Requirements for equipment containing or using flammable liquids		N	
Type of liquid		9.5 Flammable liquids		Verdict
		b) Quantity	c) Containment	

Supplementary information:

IEC 61010-1						
Clause	Requirement — Test			Result — Remark	Verdict	
10.	TABLE : Temperature Measurements				Form A.21A	P
10.1	Surface temperature limits - NORMAL CONDITION and / or SINGLE FAULT CONDITION					P
10.2	Temperature of windings- NORMAL CONDITION and / or SINGLE FAULT CONDITION					N
10.3	Other temperature measurements					N
Operating conditions:		Normal operation.				
Frequency..... :	-- Hz	Test room ambient temperature (ta) :		24.6 °C		
Voltage..... :	-- V	Test duration..... :		2 h 02 min		
Part / Location		t_m °C	t_c °C	t_{max} °C	Verdict	Comments
PCB		26.2	41.2	130	P	
Enclosure of plug		26.9	42.7	85	P	
Ambient		25.0	40.0	Ref.	Ref.	
NOTE 1 - t_m = measured temperature $t_c = t_m$ corrected ($t_m - t_a + 40$ °C or max. RATED ambient) t_{max} = maximum permitted temperature NOTE 2 - see also 14.1 with reference to component operating conditions NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary NOTE 4 - see Form A.21B for details of winding temperature measurements						
Supplementary information:						

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict

10.2	TABLE: Temperature of windings Resistance method Temperature Measurements	Form A.21B	N
4.4.2.7	MAINS transformers		
14.2.1	Motor temperatures		

Operating conditions.....:								
Frequency.....:	Hz	Test room ambient temperature (ta1/ta2)				/ °C (initial / final)		
Voltage.....:	V	Test duration.....:				h min		
Part / Designation	Rcold Ω	Rwarm Ω	Current A	tr K	tc °C	tmax °C	Verdict	Comments
NOTE 1- R_{cold} = initial resistance		R_{warm} = final resistance						
t_r = temperature rise		$t_c = t_r$ corrected ($t_c = t_r - \{t_{a2} - t_{a1}\} + [40 \text{ °C or max RATED ambient}]$)						
t_{max} = maximum permitted temperature								
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)								
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary								
Supplementary information:								

10.5.2	TABLE: Resistance to heat of non-metallic ENCLOSURES	Form A.22	P
	Test method used.....:		—
	Non operative treatment.....:	[]	
	Empty ENCLOSURE.....:	[]	
	Operative treatment.....:	[]	
	Temperature during tests.....:	70.0	—
	ENCLOSURE samples tested were.....:		—
Description	Material	Comments	Verdict
enclosure	ABS	No damage	P
	Dielectric strength test (6.8).....:	3510 V r.m.s./peak/d.c.	P
NOTE – Within 10 minutes of the end of treatment suitable tests in acc. to 8.2 and 8.3 must be conducted and pass criteria of 8.1.			
Supplementary information:			

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
10.5.3	TABLE: Insulating Materials	Form A.23	P
10.5.3 1)	Ballpressure test		P
	Max. allowed impression diameter.....: 2 mm		—
Part	Test temperature °C	Impression Diameter (mm)	Verdict
Enclosure	75	1.2	--
PCB	125	0.9	--
Supplementary information:			
10.5.3 2)	Vicat softening test (ISO 306)		N
Part	Vicat softening temperature °C	Thickness of sample (mm)	Verdict
--	--	--	--
Supplementary information:			

IEC 61010-1

Clause	Requirement — Test	Result — Remark	Verdict
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8	TABLE: Mechanical resistance to shock and impact	Form A.24	P
11	Protection against HAZARDS from fluids		N

Voltage tests can be carried out once after performing the tests of clause 8 and clause 11. However, if voltage tests are carried out separately after each set of tests, two forms can be used.

Location (see form A.5)	Clause 8 tests				Clause 11 tests				Working voltage V	Test voltage V	Verdict	Comments
	Static (8.2.1) 30 N	Impact (8.2.2)	Normal (8.3.1)	Handled Plug-in	Cleaning (11.2)	Spillage (11.3)	Overflow (11.4)	IEC 60529 (11.6)				
Enclosure and live parts	√	√	√	--	--	--	--	--	600V	3510 Vrms	P	RI
fuses	√	√	√	--	--	--	--	--		2210 Vrms	P	BI

NOTE – Use r.m.s., d.c. or peak to indicate the used test voltage.

Supplementary information:

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict

11.7.2	TABLE: Leakage and rupture at high pressure					Form A.25	N
Part	Maximum permissible working pressure Mpa	Test pressure MPa	Leakage Yes / No	Deformation Yes / No	Burst Yes / No	Comments	

NOTE – see also Annex G with requirements for USA and Canada.

Supplementary information:

11.7.3	Leakage from low-pressure parts			N
Part	Test pressure Mpa	Leakage Yes / No	Comments	

Supplementary information:

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict

12.2.1	TABLE: Ionizing radiation	Form A 26	N
12.2.1.2	Equipment intended to emit radiation		

Locations tested	Measured values μSv/h	Verdict	Comments

Supplementary information:

12.2.1.3	Equipment not intended to emit radiation		N
	Max. allowed effective dose rate at 100 mm.....: 1 μSv/h		—

Locations tested	Measured values μSv/h	Verdict	Comments

Supplementary information:

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict

12.5.1	TABLE: Sound level	Form A.27	N
Locations tested	Measured values dBA	Calculated maximum sound pressure level	
At operator's normal position and at bystanders' positions			
a)			
b)			
c)			
d)			
e)			
f)			

Supplementary information:

12.5.2	Ultrasonic pressure			N
Locations tested	Measured values		Comments	
	dB	kHz		
At operator's normal position				
At 1 m from the ENCLOSURE				
a)				
b)				
c)				
d)				
e)				

NOTE – No limit is specified at present, but a limit of 110 dB above the reference pressure value of 20 μ Pa is under consideration for applicable frequencies between 20 kHz and 100 kHz.

Supplementary information:

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
13.2.2	TABLE: Batteries	Form A.28	P
	Battery load and charging circuit diagram:		
	Battery type.....:	6F22 battery	—
	Battery manufacturer/model/catalogue No.....:	--	—
	Battery ratings.....:	1×6.0V	—
	Reverse polarity instalment test	No hazard	
Single component failures		Verdict	
Component		Open circuit	Short circuit
Battery		P	P
Supplementary information:			

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
14.3	TABLE: Overtemperature protection devices		Form A.29
			N
Reliability test			
Component	Type (NOTE)	Verdict	Comments
NOTE: NSR = non-self-resetting (10 times) NR = non-resetting (1 time) SR = self-resetting (200 times)			
Supplementary information:			

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
4.4.2.7	TABLE: MAINS transformer	Form A.30	N
4.4.2.7.2	Short circuit		N
14.6	MAINS transformers tested outside equipment		N
Type.....:			—
Manufacturer.....:			—
Test in equipment			
Test on bench			
Test repeated inside equipment (see 14.6)			
Optional – Insulation class (IEC 60085) of the lowest rated winding :			—
Winding identification			
Type of Protector for winding (Note 1)			
Elapsed time			
Current, A	primary		
	secondary		
Winding temperature, °C	primary		
(see Note 2)	secondary		
Tissue paper / cheesecloth OK ? (Pass / Fail)			
Voltage tests (see Note 3)			
Primary to secondary	_____ V _____		
Primary to core	_____ V _____		
Secondary to secondary	_____ V _____		
Secondary to core	_____ V _____		
Verdict			
Note 1:	Primary fuse	- PF / () A	
	Secondary fuse	- SF / () A	
	Overtemperature protection	- OP / () °C	
	Impedance protection	- Z	
Note 2:	Indicate method of measurement	TC = with thermocouple R = resistance method	
	If resistance method is used, record resistance in cold and warm condition in FormA.20B!		
Note 3:	Record the voltage applied and the type of voltage (r.m.s. / d.c. / peak) and for results use NB = no breakdown or B = breakdown		
Supplementary information:			

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
4.4.2.7	TABLE: MAINS transformer	Form A.31	N
4.4.2.7.3	Overload tests (for MAINS transformers)		N
14.6	MAINS transformers tested outside equipment		N
Type.....:			—
Manufacturer.....:			—
Test in equipment			
Test on bench			
Test repeated inside equipment (see 14.6)			
Optional – Insulation class (IEC 60085) of the lowest rated winding :			—
Winding identification			
Type of Protector for winding (Note 1)			
Elapsed time			
Current, A	primary		
	secondary		
Winding temperature, °C	primary		
	(see Note 2) secondary		
Tissue paper / cheesecloth OK ? (Pass / Fail)			
Voltage tests (see Note 3)			
Primary to secondary	_____ V _____		
Primary to core	_____ V _____		
Secondary to secondary	_____ V _____		
Secondary to core	_____ V _____		
Verdict			
Note 1:	Primary fuse Secondary fuse Overtemperature protection Impedance protection	- PF / () A - SF / () A - OP / () °C - Z	
Note 2:	Indicate method of measurement	TC = with thermocouple R = resistance method	
Note 3:	If resistance method is used, record resistance in cold and warm condition in FormA.20B! Record the voltage applied and the type of voltage (r.m.s. / d.c. / peak) and for results use NB = no breakdown or B = breakdown		
Supplementary information:			

IEC 61010-1

Clause	Requirement — Test	Result — Remark	Verdict
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14.8	TABLE: Transient overvoltage limiting devices	Form A.32	N
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Component / Designation	Overvoltage Category	MAINS voltage V rms	Test voltage V	t_m °C	t_c °C	t_{max} °C	Rupture Yes / No	Circuit breaker tripped	Verdict	Comments

Test room ambient temperature	°C
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NOTE - t_m = measured temperature
 $t_c = t_m$ corrected ($t_m - t_a + 40$ °C or
 t_{max} = maximum permitted
 Conformity is checked by applying 5 positive and 5 negative impulses with the applicable impulse withstand voltage, spaced up to 1 min apart,
 Supplementary information:

IEC 61010-1											
Clause		Requirement – Test				Result — Remark				Verdict	
Annex H		TABLE: Qualification of conformal coating for				Addition to Form A.xx				N	
		protection against pollution								N	
Technical properties											
Manufacturer.....										—	
Type.....										—	
Meet requirements of ANSI / UL 746E.....		[yes / no]									
Manufacturer declaration of coating material.....		[yes / no]									
Operating temperature of coating.....		[] °C									
Comparative tracking index (CTI).....		[]									
Insulation resistance.....		[] Ω									
Dielectric strength.....		[] V									
UV resistance (if required).....		[yes / no]									
Flammability rating.....											
Preparation of the test specimens		[yes / no]									
Item	Test conditioning	Parameter	Td	Samples						Verdict	Comments
				1	2	3	4	5	6		
1	Scratch resistance										
	Visual inspection										
2	Cold										
3	Dry heat										
4	Rapid temp. change										
5	Damp heat										
6	Adhesion of coating										
	Visual inspection										
7	Humidity										
8	Insulation resistance										
	Visual inspection										
NOTE Td = Test duration time											
Supplementary information:											

IEC 61010-1						
Clause	Requirement – Test			Result — Remark		Verdict
6.7.2.2.2	TABLE: Reliability of potted components			Addition to Form A.14		N
Temperature Cycling Test						
Manufacturer.....:						
Type.....:						
Construction.....:						
Potting compound.....:						
CREEPAGE distances measured.....:						
CLEARANCES measured.....:						
Thickness through insulation.....:						
Adhesive test Pass/Fail.....:						
Test temperature T °C.....:						
Cycles at U= AC 500 V				Leakage current (500 V) mA		
Number of cycles	Date			68 h / 125 °C	1 h / 25 °C	2 h / 0 °C
		to				
1. Cycle from		to				
2. Cycle from		to				
3. Cycle from		to				
4. Cycle from		to				
5. Cycle from		to				
6. Cycle from		to				
7. Cycle from		to				
8. Cycle from		to				
9. Cycle from		to				
10. Cycle from		to				
After Cycling Test :						
Humidity conditioning				48 h		
Requirements for dielectric strength (s. insulation diagram)				Test voltage V r.m.s		Verdict
Basic insulation _____ V r.m.s.						
Additional insulation _____ V r.m.s.						
Reinforced insulation _____ V r.m.s.						
Supplementary information:						

IEC 61010-1

Clause	Requirement — Test	Result — Remark	Verdict
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6.	TABLE: Working voltage of Switch Mode Power Supply							Addition to Form A.5		N
	Location / Measuring track	Insulation (Form A.5)	RMS voltage V	Peak voltage V	Required cl mm	Measured cl mm	Required cp mm	Measured cp mm	Verdict	Comments
Input supply voltage.....:		V		Hz						
Supplementary information:										

**Appendix 1
Equipment List**

No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
SE001	Data Acquisition / Switch Unit	Agilent	34970A	MY44011615	2016.9.29	2017.9.28
SE002	Thermocouple wire	OMEGA	TT-K-30-1000	kxff	2016.9.29	2017.9.28
SE003	Temp. & Humid. Chamber	Gongwen	GDS-250	080943	2016.9.29	2017.9.28
SE004	Oven Chamber	Rongfeng	101A-3	31446	2016.9.29	2017.9.28
SE005	DC Electronic Load	Arry	3711A	A06BI03017	2016.9.29	2017.9.28
SE006	DC Electronic Load	Arry	3711A	A06BI02095	2016.9.29	2017.9.28
SE007	DC Electronic Load	Arry	3711A	A06BI03015	2016.9.29	2017.9.28
SE008	DC Electronic Load	Arry	3711A	A06BH02122	2016.9.29	2017.9.28
SE009	Oscilloscope	Tektronix	TDS3012B	YT204842	2016.9.29	2017.9.28
SE010	Digital Power Meter	Qingzhi	8716C	870806042	2016.9.29	2017.9.28
SE011	Digital Power Meter	Qingzhi	8716C	870806037	2016.9.29	2017.9.28
SE012	Ohm Meter	Yang Zi	YD2511	11-2250	2016.9.29	2017.9.28
SE013	Multi Meter	Fluke	115C	96721596	2016.9.29	2017.9.28
SE014	Desktop Multi Meter	Fluke	45	7662018	2016.9.29	2017.9.28
SE015	Desktop Multi Meter	Fluke	45	8095018	2016.9.29	2017.9.28
SE016	Desktop Multi Meter	Fluke	45	6792039	2016.9.29	2017.9.28
SE017	Grounding Bond Meter	Yang Zhi	YD2654B	548-053	2016.9.29	2017.9.28
SE018	Leakage Current Meter	EXTECH	7611	1330848	2016.9.29	2017.9.28
SE019	Insulation Resistance Tester	Yang Zhi	YD9820A	20A-1734	2016.9.29	2017.9.28
SE020	Hi-Pot Tester	Yang Zhi	YD2650A	088	2016.9.29	2017.9.28
SE021	Electronic Scale	Balance	BCSS-F-6	081050	2016.9.29	2017.9.28
SE022	Push-Pull Scale	Algol	NK-300	67420	2016.9.29	2017.9.28
SE023	Digital Caliper	Yitu	YT211	P840156	2016.9.29	2017.9.28
SE024	Electronic Thermo-Hygrometer	S.H.Qixiang	CTH-608	GC-WS608	2016.9.29	2017.9.28
SE025	Goniometer	Wenzhou	JZC-B2	15032	2016.9.29	2017.9.28
SE026	Tumbling Barrel	Zhilitong	GT-1	G010308	2016.9.29	2017.9.28
SE027	Audio Generator	LWDQGS	TAG-101	308909	2016.9.29	2017.9.28
SE028	Noise Generator	DF	DF1681	071001107	2016.9.29	2017.9.28
SE029	Plug Torque Tester	Zhilitong	LJ-1	LJ010908	2016.9.29	2017.9.28
SE030	Test Probe 13	Zhilitong	TP13	D3L15	2016.9.29	2017.9.28
SE031	Test Probe 41	Zhilitong	TP41	D30L80	2016.9.29	2017.9.28
SE032	Finger Nail Probe	Zhilitong	FN-1	D12N30	2016.9.29	2017.9.28
SE033	Test Finger Probe B	Zhilitong	TF-B	D12J3	2016.9.29	2017.9.28
SE034	Rigid Finger Probe	Zhilitong	RFP	D12N50	2016.9.29	2017.9.28
SE035	Test Probe	Zhilitong	D4L100	60065-913	2016.9.29	2017.9.28
SE036	Test Probe C	Zhilitong	TP-C	60065-915	2016.9.29	2017.9.28
SE037	Test Probe D	Zhilitong	TP-D	60065-914	2016.9.29	2017.9.28
SE038	Test Probe	Zhilitong	FG2C	D12L80	2016.9.29	2017.9.28
SE039	Test hook	Zhilitong	TH-1	W8L180T1	2016.9.29	2017.9.28
SE040	Accessibility Probe	Zhilitong	ZA-1	A1310	2016.9.29	2017.9.28
SE041	UL Finger Probe	Zhilitong	ULP-01	D5L97	2016.9.29	2017.9.28
SE042	Steel Ball	Zhilitong	GQ-1	G121008	2016.9.29	2017.9.28
SE043	Ball Pressure Tester	Sinna	SN3407	08051808	2016.9.29	2017.9.28
SE044	Ball Pressure Tester	Sinna	SN3407	08082302	2016.9.29	2017.9.28
SE045	Hammer	Sinna	SN3406	08083102	2016.9.29	2017.9.28
SE046	Torque Driver	kanon	12LTDK	08G338	2016.9.29	2017.9.28
SE047	Glow Wire Test Set	Sinna	ZRS-2	08091118	2016.9.29	2017.9.28
SE048	Needle Flame Test Set	Sinna	ZY-2	08091125	2016.9.29	2017.9.28
SE049	Switching Mode DC Power Supply	Manson	SIM-9106	G360800228	2016.9.29	2017.9.28
SE050	Hardened steel pin	Zhilitong	SC30	R25N30	2016.9.29	2017.9.28
SE051	Platform scale	shanghai	TGT-100	526	2016.9.29	2017.9.28
SE052	Salt spary tester	Jiahui	JH-60	176358	2016.9.29	2017.9.28
SE053	Test rod	Zhilitong	TZ-14	D40N5	2016.9.29	2017.9.28
SE054	Vibration tester	shengshiwei	SW-TF	20100228	2016.9.29	2017.9.28
SE055	Surge tester	Ceprei	1065A	0503Y01	2016.9.29	2017.9.28
SE056	Digital Power Meter	Qingzhi	8713B1	870909080	2016.9.29	2017.9.28
SE057	Dust chamber	Gongwen	SC-500	100311	2016.9.29	2017.9.28

No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
SE058	Draught-proof enclosure	Tengbo	TB180	Q100226	2016.9.29	2017.9.28
SE059	Hammer	Zhilitong	CJ-3	C031026	2016.9.29	2017.9.28
SE060	Hammer	Zhilitong	CJ-3	C031027	2016.9.29	2017.9.28
SE061	Hammer	Zhilitong	CJ-3	C031028	2016.9.29	2017.9.28
SE062	Data Acquisition / Switch Unit	Agilent	34970A	US37013205	2016.9.29	2017.9.28
SE063	Leakage Current Tester	Simpson	228	7173286	2016.9.29	2017.9.28
SE064	Temp. & Humid. Chamber	Weihuang	WHTH-1000-40-880	100631	2016.9.29	2017.9.28
SE065	Salt spary tester	Henqiang	KH-160	/	2016.9.29	2017.9.28
SE066	Oscillating tube	damsion	DMS-E01	2011DNS-E010401	2016.9.29	2017.9.28
SE067	Spray nozzle	Lihui	LH56	63125	2016.9.29	2017.9.28
SE068	Immersion tester	kunshang	IPX7-1	SK2018M5	2016.9.29	2017.9.28
SE069	Test Probe 18	Aodesaichuang	AUTO-18	auto110721-18-01	2016.9.29	2017.9.28
SE070	Test Probe 19	Aodesaichuang	AUTO-19	auto110721-19-02	2016.9.29	2017.9.28
SE071	Data Acquisition / Switch Unit	Agilent	34970A	MY44052414	2016.9.29	2017.9.28
SE072	Data Acquisition / Switch Unit	Agilent	34970A	MY44052411	2016.9.29	2017.9.28
SE073	Digital Power Meter	Yokogawa	WT210	91K223105	2016.9.29	2017.9.28
SE074	Desktop Multi Meter	Agilent	34401A	MY44008459	2016.9.29	2017.9.28
SE075	Desktop Multi Meter	Agilent	34401A	MY44008472	2016.9.29	2017.9.28
SE076	Hi-Pot Tester	ME I RUIKE	RK2672D	RK72D111130-010	2016.9.29	2017.9.28
SE077	Switching Mode Power Supply	ZHAOXIN	KXN-6030D	KXN.PS.JPS	2016.9.29	2017.9.28
SE078	Torque Driver	Aigu	10DPSK	356019	2016.9.29	2017.9.28
SE079	Magnifying glass	German	10x	12234	2016.9.29	2017.9.28
SE080	Regulated Power Supply	APC	AFC-11010G	F310120052	2016.9.29	2017.9.28
SE081	Air Pressure Gauge	Tianya	N509	/	2016.9.29	2017.9.28
SE082	Step Temperature Room	Long An	LA-ORT28	LA-201206001	2016.9.29	2017.9.28
SE083	"GO" Gauge for E27 Caps	KINGPO	7006-27B-1	8688	2016.9.29	2017.9.28
SE084	"NOT GO" Gauge for E27 Caps	KINGPO	7006-28A-1	8689	2016.9.29	2017.9.28
SE085	"GO" Gauge for dimension "S1" of E27 Caps	KINGPO	7006-27C-1	8691	2016.9.29	2017.9.28
SE086	Gauge for E27 Caps for testing contact making	KINGPO	7006-50-1	8693	2016.9.29	2017.9.28
SE087	Gauge for E27 Caps for testing protection against accidental contact during insertion	KINGPO	7006-51A-2	8690	2016.9.29	2017.9.28
SE088	Oscilloscope	Tektronix	TDS3012B	C010353	2016.9.29	2017.9.28
SE089	Single wing drop tester	FEILING	FL8618	/	2016.9.29	2017.9.28
SE090	Data Acquisition / Switch Unit	Agilent	34970A	MY44006829	2016.9.29	2017.9.28
SE091	Thermocouple wire	OMEGA	TT-J-30-1000	/	2016.9.29	2017.9.28
SE092	Touch current tester	Ceprei	410B	1207AG10	2016.9.29	2017.9.28
SE093	Cord oscillating tester	Dongguan lixiong	LX-1211	/	2016.9.29	2017.9.28
SE094	Lampholder digital torsion meter	Inventfine Instrument Co., Ltd.	CH338	1301004	2016.9.29	2017.9.28
SE095	Straight steel pin	KINGPO	SE095	/	2016.9.29	2017.9.28
SE096	Digital Caliper	Guanglu	SF2000	C1211225254	2016.9.29	2017.9.28
SE097	Digital Caliper	Guanglu	SF2000	C1211225024	2016.9.29	2017.9.28
SE098	Timer	PURSUN	PS-528	/	2016.9.29	2017.9.28
SE099	Timer	PURSUN	PS-528	/	2016.9.29	2017.9.28
SE100	Switching Mode DC Power Supply	GW INSTEK	GPS-1850D	EN820728	2016.9.29	2017.9.28
SE101	Digital Power Meter	EVERFINE	PF9901	1005046	2016.9.29	2017.9.28
SE102	Digital Power Meter	EVERFINE	PF9901	G100731CJ6331237	2016.9.29	2017.9.28
SE103	Tape line	YANGGUANG	YG-206	/	2016.9.29	2017.9.28
SE104	Electronic Thermo-Hygrometer	UYIGAO	CTH-608	UA13706944	2016.9.29	2017.9.28
SE105	Pressure Gauge	ZHHY	SE105	/	2016.9.29	2017.9.28

No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
SE106	"GO" Gauge for E14 Caps	GRT/china	7006-27F-1	2013053131	2016.9.29	2017.9.28
SE107	"NOT GO" Gauge for E14 Caps	GRT/china	7006-28B-1	2013053126	2016.9.29	2017.9.28
SE108	"GO" Gauge for dimension "S1" of E14 Caps	GRT/china	7006-27G-1	2013053132	2016.9.29	2017.9.28
SE109	Gauge for E14 Caps for testing contact making	GRT/china	7006-54-2	2013053128	2016.9.29	2017.9.28
SE110	Gauge for E14 Caps for testing protection against accidental contact during insertion	GRT/china	7006-55-2	2013053129	2016.9.29	2017.9.28
SE111	"GO" and "NOT GO" Gauge for base GU10	KINGPO	7006-121-1	KingPo12485237	2016.9.29	2017.9.28
SE112	"GO" plug gauge for E12 lampholder	GRT/china	7006-25C-1	20130512135005	2016.9.29	2017.9.28
SE113	"NOT GO" plug gauge for E12 lampholder	GRT/china	7006-26B-1	20130512135006	2016.9.29	2017.9.28
SE114	"GO" Gauge for E26 Caps	GRT/china	7006-27D-3	2013053135	2016.9.29	2017.9.28
SE115	"NOT GO" Gauge for E26 Caps	GRT/china	7006-29L-4	2013053125	2016.9.29	2017.9.28
SE116	"GO" Gauge for E40 Caps	ANGUI TESTING	7006-27-7	20140405	2016.9.29	2017.9.28
SE117	"NOT GO" Gauge for E40 Caps	ANGUI TESTING	7006-28D-1	20140406	2016.9.29	2017.9.28
SE118	Gauge for E40 Caps for testing contact making	ANGUI TESTING	7006-52-1	20140407	2016.9.29	2017.9.28
SE119	Gauge for E40 Caps for testing protection against accidental contact during insertion	ANGUI TESTING	7006-53-1	20140408	2016.9.29	2017.9.28
SE120	"Go" gauge for bi-pin cap on finished lamps G13	KINGPO	7006-45-4	KingPo12485238	2016.9.29	2017.9.28
SE121	"Go" gauge for bi-pin cap on finished lamps G5	KINGPO	7006-46A-3	KingPo12485230	2016.9.29	2017.9.28
SE122	Gauge for three-pin flat-pin plugs (10A)	KINGPO	AS/NZS 3112 Fig A 10A	KingPo12485231	2016.9.29	2017.9.28
SE123	Gauge for three-pin flat-pin plugs (15A)	KINGPO	AS/NZS 3112 Fig A 15A	KingPo12485232	2016.9.29	2017.9.28
SE124	Gauge for three-pin flat-pin plugs (20A)	KINGPO	AS/NZS 3112 Fig A 20A	KingPo12485233	2016.9.29	2017.9.28
SE125	Gauge for two-pin flat-pin plugs with parallel pins	KINGPO	AS/NZS 3112 Fig B	KingPo12485236	2016.9.29	2017.9.28
SE126	Gauge for flat and round pin plugs (two flat live pins and a round earth pin)	KINGPO	AS/NZS 3112 Fig F-A	KingPo12485234	2016.9.29	2017.9.28
SE127	Gauge for flat and round pin plugs (two round live pins and a flat earth pin)	KINGPO	AS/NZS 3112 Fig F-B	KingPo12485235	2016.9.29	2017.9.28
SE128	Transport type simulation vibration tester	KING DESIGN	KD-9363-550-PC	LT0PCLA13003	2016.9.29	2017.9.28
SE129	Oven Chamber	Rongfeng	101A-3	33897	2016.9.29	2017.9.28
SE130	"Go" gauges for caps on finished lamps B22	ANGUI TESTING	7006-11-8	20140404	2016.9.29	2017.9.28
SE131	"Not Go" gauges for caps on finished lamps B22	ANGUI TESTING	7006-10-8	20140403	2016.9.29	2017.9.28
SE132	Gauges for testing the insertion of caps in lampholders B22d	ANGUI TESTING	7006-4A-2	20140401	2016.9.29	2017.9.28
SE133	Gauges for testing the retention of B22d caps in the holder	ANGUI TESTING	7006-4B-1	20140402	2016.9.29	2017.9.28
SE134	1000:1 Oscillograph Probe	Pintek	HVP-18HF	13010082	2016.9.29	2017.9.28
SE135	100:1 Oscillograph Probe	Pintek	CP-3308R	/	2016.9.29	2017.9.28
SE136	AC power source	All power	APW-150N	930607	2016.9.29	2017.9.28
SE137	Horizontal&vertical tester	AUTOSTRONG	AUTO-SPA	AUTO1033	2016.9.29	2017.9.28
SE138	Tracking index tester	AUTOSTRONG	AUTO-LDA	AUTO1040	2016.9.29	2017.9.28
SE139	Vicat softening tester	AUTOSTRONG	AUTO-WK	/	2016.9.29	2017.9.28
SE140	Electroplated coating thickness tester	Guangzhou Dongru electronic	DR280	9324	2016.9.29	2017.9.28
SE141	Battery Tester	DG	W602	DG2014W6021772	2016.9.29	2017.9.28
SE142	Test plug for antenna coaxial	ANGUI	AG-	/	2016.9.29	2017.9.28

No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
	sockets	TESTING	IEC60065F9			
SE143	SHORE D Durometer	Handpi	LX-D	8134006969	2016.9.29	2017.9.28
SE144	Steel Ball	ANGUI TESTING	GQ-2	/	2016.9.29	2017.9.28
SE145	"Go" gauges for caps on finished lamps B15	ANGUI TESTING	7006-11-8	140728017	2016.9.29	2017.9.28
SE146	"Not Go" gauges for caps on finished lamps B15	ANGUI TESTING	7006-10-8	140728010	2016.9.29	2017.9.28
SE147	Gauges for testing the insertion of caps in lampholders B15d	ANGUI TESTING	7006-4A-2	140728004	2016.9.29	2017.9.28
SE148	Gauges for testing the retention of B15d caps in the holder	ANGUI TESTING	7006-4B-1	140728009	2016.9.29	2017.9.28
SE149	"GO" Gauge for E39 Caps	ANGUI TESTING	7006-24B-1	144509	2016.9.29	2017.9.28
SE150	Gauge for E39 Caps for testing contact making	ANGUI TESTING	7006-24A-1	144511	2016.9.29	2017.9.28
SE151	"NOT GO" Gauge for E39 Caps	ANGUI TESTING	7006-24C-1	144510	2016.9.29	2017.9.28
SE152	Noise Generator/filter	ZCTEK	ZC6221	ZC14020178	2016.9.29	2017.9.28
SE153	Hi-Pot Tester	ME I RUIKE	RK2671C	RK71C-BEA1005	2016.9.29	2017.9.28
SE154	Data Acquisition / Switch Unit	Agilent	34970A	MY44064740	2016.9.29	2017.9.28
SE155	PVC compounds pressure tester at high temperature	ANGUI TESTING	AG8113F1	/	2016.9.29	2017.9.28
SE156	Low Pressure Tester	BELL	BE-ZK-125	201505250002	2016.9.29	2017.9.28
SE157	Thermal abuse chamber	BELL	BE-101-480B	201505250003	2016.9.29	2017.9.28
SE158	Temperature control short-circuit tester	BELL	BE-1000W	201505250004	2016.9.29	2017.9.28
SE159	Projectile Tester	BELL	BE-6046	201505250005	2016.9.29	2017.9.28
SE160	Test machine for forced internal short circuit of cells	BELL	BE-6045W	201505250006	2016.9.29	2017.9.28
SE161	Crush tester	BELL	BE-6045-2T	201505250007	2016.9.29	2017.9.28
SE162	Rapid temperature test chamber	BELL	BTKS-408C-5	201505250008	2016.9.29	2017.9.28
SE163	Mechanical shock(crash hazard)	BELL	BE-5066	201505250009	2016.9.29	2017.9.28
SE164	Battery Testing System	NEWARE	CT-3008-5V10A-204	T1505-080859	2016.9.29	2017.9.28
SE165	Battery Testing System	NEWARE	CT-3008-5V10A-204	T1505-080860	2016.9.29	2017.9.28
SE166	Battery Testing System	NEWARE	CT-3008-20V6A-A	T1505-080861	2016.9.29	2017.9.28
SE167	Shock tester	LABTONE	HSKT10	L150529	2016.9.29	2017.9.28
SE168	Electromagnetic vibration tester	LABTONE	CV-700	L150530	2016.9.29	2017.9.28
SE169	Electronic scales	JM	JM-A	/	2016.9.29	2017.9.28
SE170	Digital Power Meter	EVERFINE	PF9901	G100731CO1351143	2016.9.29	2017.9.28
SE171	"GO" and "NOT GO" Gauge for starters	KINGPO	IEC 60155 Fig 6	/	2016.9.29	2017.9.28
SE172	"NOT GO" Gauge for starters	KINGPO	IEC 60155 Fig 7	/	2016.9.29	2017.9.28
SE173	"GO" Gauge for starters	KINGPO	IEC 60155 Fig 8	/	2016.9.29	2017.9.28
SE174	Internal resistance tester	TestPad	BTS-100	IR09100699	2016.9.29	2017.9.28
SE175	DC Electronic Load	PRODIGIT	3302C	80602C 446	2016.9.29	2017.9.28
SE176	DC Electronic Load	PRODIGIT	3302C	25689721698	2016.9.29	2017.9.28
SE177	Data Acquisition / Switch Unit	Agilent	34970A	MY44041739	2016.9.29	2017.9.28
SE178	Data Acquisition / Switch Unit	Agilent	34970A	US37043094	2016.9.29	2017.9.28
SE179	100:1 Oscillograph Probe	Pintek	CP-3308R	/	2016.9.29	2017.9.28
SE180	Digital Power Meter	EVERFINE	PF9901	G100731CN1351244	2016.9.29	2017.9.28
SE181	Cord oscillating tester	Futexing	FT-CWT03	CWT1604001	2016.9.29	2017.9.28
SE182	Pointer type DC current meter	Shanghai Liangbiao	C31-A	6003	2016.9.29	2017.9.28
SE183	Three phase ammeter	Chengdu Huayi	PMH8161-9K4	20100604801	2016.9.29	2017.9.28
SE184	Shunt	pulianchuang	FL-2/0.5 50A	/	2016.9.29	2017.9.28
SE185	Shunt	pulianchuang	FL-2/0.5 200A	/	2016.9.29	2017.9.28
SE186	Creepage distance testing card-Straight card	ANGUI TESTING	SE-A141	/	2016.9.29	2017.9.28

No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
SE187	Creepage distance testing card-Bending card	ANGUI TESTING	SE-A142	/	2016.9.29	2017.9.28
SE188	Conductivity Meters	leici	DDS-11A	163	2016.9.29	2017.9.28
SE189	Manual Supercharger	Zhejiang Yuhuang	SB-10Mpa	/	2016.9.29	2017.9.28
SE190	Grounding resistance meter	hangzhoudongs hun	ZC29B-2	/	2016.9.29	2017.9.28
SE191	AC power source	All power	AFW-210A	992429	2016.9.29	2017.9.28
SE192	Digital Power Meter	EVERFINE	PF9901	G135716CM5361147	2016.9.29	2017.9.28
SE193	High Accuracy Array Spectrogra	EVERFINE	HAAS-2000-IR1	M112279CM1361113	2016.9.24	2017.9.23
SE194	UV-VIS-NIR Spectroradiometer for Photobiological Safety Analysis	EVERFINE	PMS-700	G107114CJ1341112	2016.9.21	2017.9.20
SE195	Band Radiometer	EVERFINE	RD-2000F	G114280CM1361115	2016.9.22	2017.9.21
SE196	Pupil Imaging Radiance Meter	EVERFINE	CX-2K	G132536CF1361113	2016.9.22	2017.9.21
SE197	Digital Power Meter	EVERFINE	PF9811	G135717CJ7361129	2016.9.20	2017.9.19
SE198	Digital CC&CV DC Power Supply	EVERFINE	WY3010	G111418CM5361135	2016.9.20	2017.9.19
SE199	AC Power Source	EVERFINE	DPS1005	G119890CJ6361133	2016.9.20	2017.9.19
SE200	Spectral irradiance standard lamp	EVERFINE	D204BH	G100284CA1361114	2016.9.24	2017.9.23
SE201	Standard luminance source	EVERFINE	SLS-150	G137329CJ6361112	2016.9.24	2017.9.23
SE202	Standard lamp of ultraviolet radiation	EVERFINE	SIS-631	G110132CA1361120	2016.9.24	2017.9.23
SE203	Falling water drops device	Gongwen	DJ-B	/	2016.9.29	2017.9.28
SE204	Continuous immersion in water device	Gongwen	X8	161130	2016.9.29	2017.9.28
SE205	Torque Driver	kanon	30LTDK	/	2016.9.29	2017.9.28
SE206	Gauge for single-phase two-pole plug	ANGUI TESTING	AGGB02F6	/	2016.9.29	2017.9.28
SE207	"GO" and "Not Go" Gauge for plug pins	ANGUI TESTING	AGENF1GO	/	2016.9.29	2017.9.28
SE208	Gauge for pin diameter	ANGUI TESTING	AGENF2	/	2016.9.29	2017.9.28
SE209	Gauge for checking impossibility of single-pole insertion of into socket-outlets	ANGUI TESTING	AGENF4	/	2016.9.29	2017.9.28
SE210	Gauge for plug pins	ANGUI TESTING	AGBS1363F5	/	2016.9.29	2017.9.28
SE211	12.5mm steel ball	ANGUI TESTING	ST-12.5	/	2016.12.20	2017.12.19
SE212	Electronic Thermo-Hygrometer	Boyang	HTC-1	SE212	2016.12.20	2017.12.19
SE213	Electronic Thermo-Hygrometer	Boyang	HTC-1	SE213	2016.12.20	2017.12.19
SE214	Electronic Thermo-Hygrometer	Boyang	HTC-1	SE214	2016.12.20	2017.12.19
SE215	Electronic Thermo-Hygrometer	Boyang	HTC-1	SE215	2016.12.20	2017.12.19
SE216	Electronic Thermo-Hygrometer	Boyang	HTC-1	SE216	2016.12.20	2017.12.19
SE217	Electronic Thermo-Hygrometer	Boyang	HTC-1	SE217	2016.12.20	2017.12.19
SE218	Visual IR Thermometer	FLUKE	VT04	VT04-14060109	2016.12.20	2017.12.19

Photo 1

View: overview

- front
- rear
- right side
- left side
- top
- bottom
- internal



Photo 2

View:

- front
- rear
- right side
- left side
- top
- bottom
- internal



Photo documentation

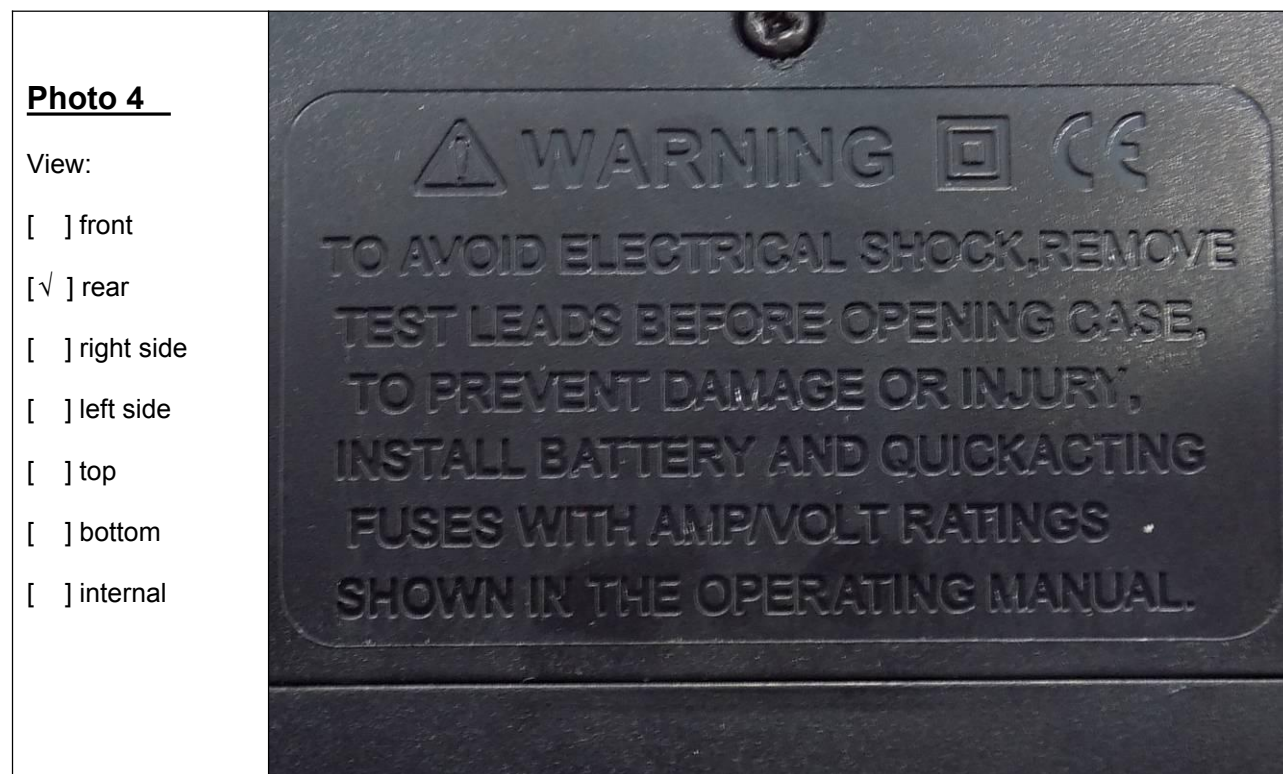


Photo documentation



Photo documentation

Photo 7

View:

- front
- rear
- right side
- left side
- PCB top
- bottom
- internal

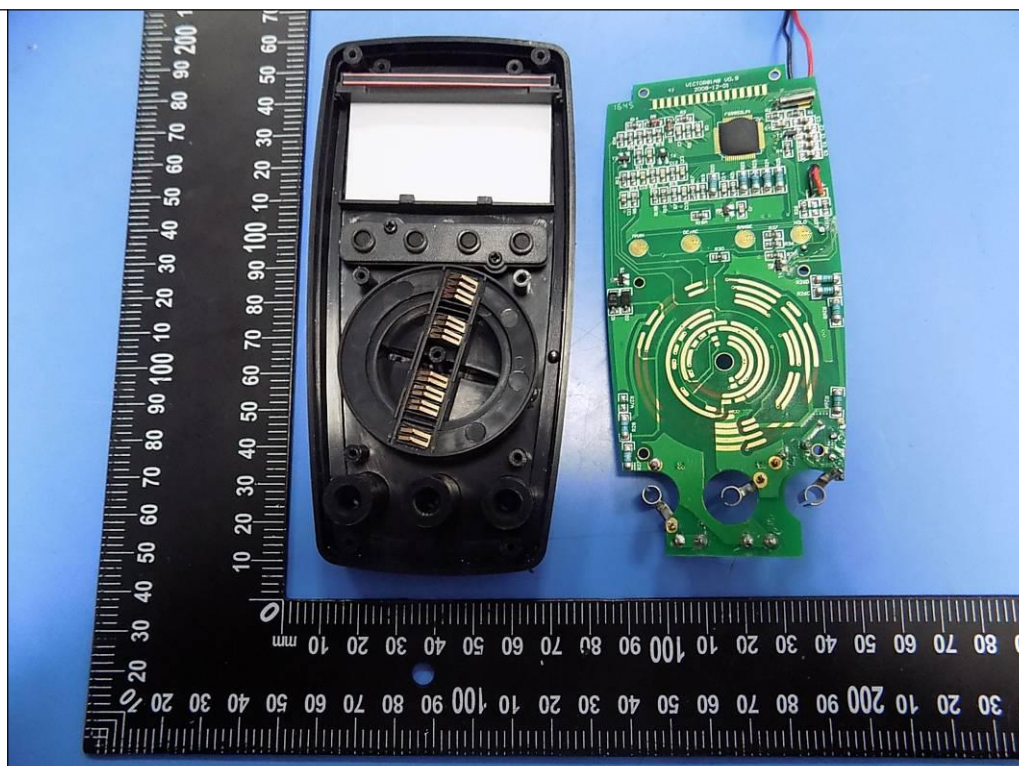
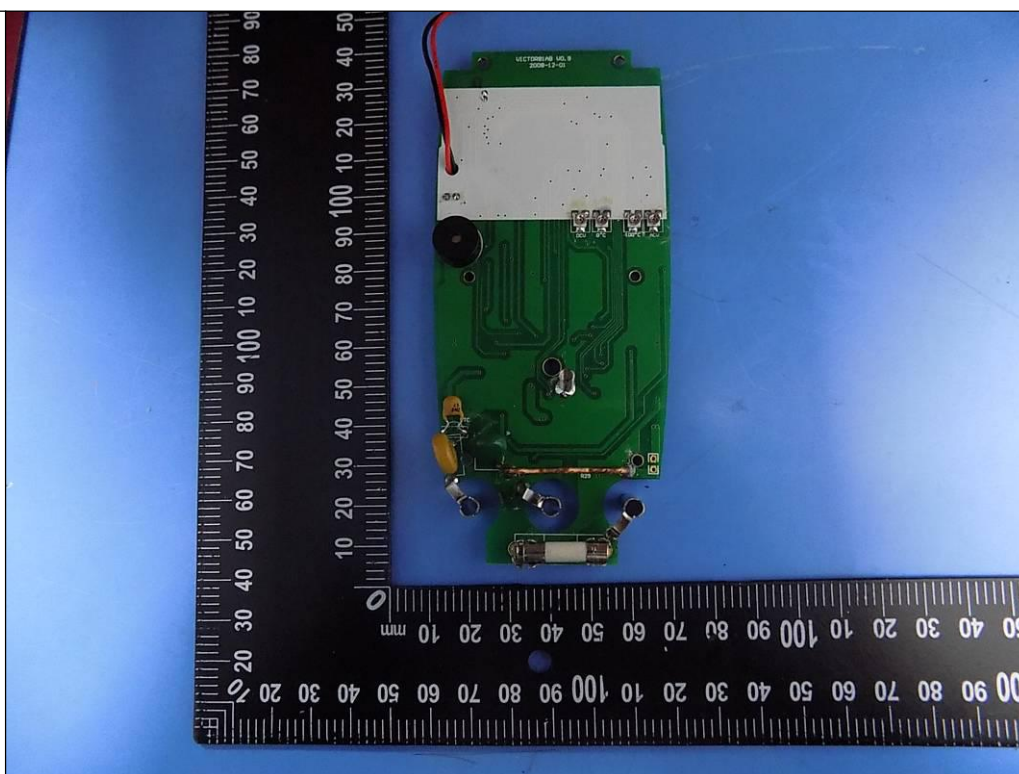


Photo 8

View:

- front
- rear
- right side
- left side
- top
- PCB bottom
- internal



---End of report---