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TEST REPORT
EN 61010-1
Safety requirements for electrical equipment for measurement, control, and laboratory use
Part 1: General requirements
EN IEC 61010-2-033
Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use – Part 2-033: Particular Requirements for Hand-Held Multimeters for Domestic and Professional Use, Capable of Measuring Mains Voltage

Report Number. .....:	210823062GZU-002
Date of issue .....:	10 Feb 2022, modification 1: 08 Nov 2023
Total number of pages.....:	62
Name of Testing Laboratory preparing the Report.....:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Applicant's name .....:	Uni-Trend Technology(China)Co., Ltd
Address .....:	No. 6, Gong Ye Bei 1st Road, Songshan Lake National High-Tech Industrial Development Zone, DONGGUAN CITY Guangdong Province 523808, China
Test specification:	
Standard .....:	EN 61010-1:2010 +A1:2019, EN IEC 61010-2-033: 2021 +A11:2021 BS EN 61010-1:2010 +A1:2019
Test procedure .....:	LVD, UKCA
Non-standard test method .....:	N/A
Test Report Form No. .....:	TTRF_ENIEC61010_2_033_2021
Test Report Form(s) Originator ....:	Copyright © 2021 Intertek
Master TRF.....:	2021-12

General disclaimer:

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Test item description..... :	Professional Multimeter Solar Pro
Trade Mark..... :	UNI-T
Manufacturer ..... :	Same as applicant
Model/Type reference..... :	UT196
Ratings..... :	Powered: 1 x 9V 6LR61 or 6F22 battery Measurement: CAT IV 600V, CAT III 1000V Rated voltage of measurement terminals: 1700 Vdc, 1500 Vac

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**Testing Laboratory:**	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch	
Testing location/ address ..... :		Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China	
Tested by (name, function, signature)..... :		Bin Zhong/ Engineer	
Approved by (name, function, signature) .. :		Justin He/ Manager	
☐	**Testing procedure: CTF Stage 1:**	N/A	
Testing location/ address ..... :			
Tested by (name, function, signature)..... :			
Approved by (name, function, signature) .. :			
☐	**Testing procedure: CTF Stage 2:**	N/A	
Testing location/ address ..... :			
Tested by (name + signature)..... :			
Witnessed by (name, function, signature) . :			
Approved by (name, function, signature) .. :			

List of Attachments (including a total number of pages in each attachment)

Document No.	Documents included / attached to this report (description)	Page No.
Appendix 1	Product photos	3

Documents referenced by this report (available on request):

Document Name or No.	Documents description	Page No.
None		

Summary of testing:

This product under test complied with EN 61010-1:2010+A1:2019, EN IEC 61010-2-033: 2021 +A11:2021. BS EN 61010-1:2010+A1:2019.

Tests performed (name of test and test clause):	**Testing location:**
Follow clause was performed: Clause 4.4.4 – Fault condition Clause 5.3 – Marking durability test Clause 6.3 – Permissible limits for accessible part Clause 6.7 – Creepage distance and clearance Clause 6.8 – Voltage test and impulse test Clause 8.2.1 – Static test Clause 8.3 – Drop test Clause 10.1 – Temperature limit Clause 10.5.2 – Non-metallic enclosure Clause 11.6 – Equipment RATED with a degree of ingress protection (IP code) Clause 101.3 – Protection against mismatches inputs and ranges Clause 101.4 – Protection against MAINS overvoltages Clause 102.2 – Battery level Clause 102.3 – Over-range Clause 102.4 – Permanent overvoltages	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China

Summary of compliance with National Differences (List of countries addressed):

There are no differences between EN 61010-1:2010+A1:2019 and BS EN 61010-1:2010+A1:2019.

☒ **The product fulfils the requirements of** EN 61010-1:2010+A1:2019, EN IEC 61010-2-033: 2021 +A11:2021, BS EN 61010-1:2010+A1:2019.

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

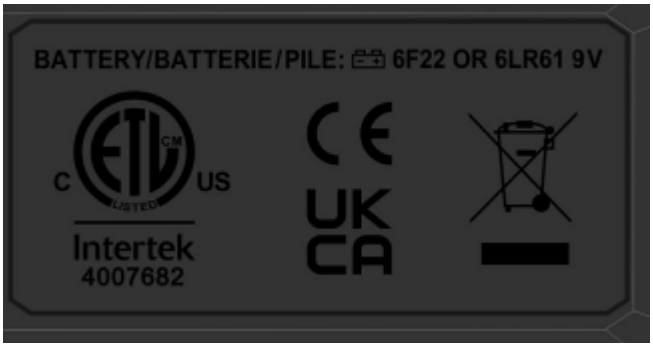
☒ **Statement not required by the standard used for type testing**

Copy of marking plate:

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

Markings on front panel

Marking on rear panel



Test item particulars:	
Type of item ..... :	Measurement
Description of equipment function..... :	See product general information
Connection to MAINS supply ..... :	Battery operated
Overvoltage category ..... :	None
Measurement category……..:	CAT IV 600V, CAT III 1000V
POLLUTION DEGREE..... :	2
Means of protection..... :	Class II
Environmental conditions ..... :	0 - 40℃
For use in wet locations..... :	No
Equipment mobility..... :	Hand-held
Operating conditions..... :	Continuous
Overall size of equipment (W x D x H)..... :	195 x 95 x58 mm
Mass of equipment (kg)..... :	0.485
Marked degree of protection to IEC 60529 ..... :	IP65
Accessories and detachable parts included in the evaluation..... :	No
Options..... :	No
Possible 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.....:	18 Nov 2021 22 Sep 2023
Date (s) of performance of tests .....:	18 Nov 2021 – 14 Jan 2022 22 Sep 2023 – 06 Nov 2023
General remarks:	

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.
"(see ENCLOSURE #)" refers to additional information appended to the report.
"(see Form A.xx)" refers to a Table appended to the report.
Bottom lines for measurement Tables Forms A.xx are optional if used as record.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

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Modification 1(08 Nov 2023):

This report is based on and superseded original test report 210823062GZU-002, dated 10 Feb 2022, with below modified information:

1. Changed ratings from "Powered: 1 x 9V 6LR61 or 6F22 battery, Measurement: CAT IV 600V, CAT III 1000V" to "Powered: 1 x 9V 6LR61 or 6F22 battery, Measurement: CAT IV 600V, CAT III 1000V, Rated voltage of measurement terminals 1700 Vdc, 1500 Vac".
2. Corrected some errors in Form A.15.

Name and address of factory (ies) ..... : Same as applicant

General product information and other remarks:

This product is a 6000-count true-RMS photovoltaic multimeter with high reliability and hight safety, featuring high voltage measurement (1700VDC, 1500Vac for floating voltage in no measurement category circuit), Large LCD display, high-resolution analog pointer display, full-rang electrical measurement meter with practical performances. This product can be used to measure AC/DC voltage, resistance, diode, continuity, capacitance, frequency. Auto AC/DC voltage, flex clamp current sensor, NCV, etc. This photovoltaic multimeter has multiple functions such as data hold, relative measurement., peak measurement, low pass filtering, low voltage indication, backlight, auto power off, and more.

Mainly applied in schools, smelting, communication, manufacturing, petroleum, national defense, electrical fields, photovoltaic station, detection of electrical equipment and dedicated measurement tools, better satisfying the measurement requirements of automation, power distribution, electromechanics and others.

Description of model differences:

None

Description of special features:

None.

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
4	**TESTS**		P
4.4	Testing in SINGLE FAULT CONDITIONS		P
4.4.1	Fault tests		P
4.4.2	Application of SINGLE FAULT CONDITIONS		P
4.4.2.1	SINGLE FAULT CONDITIONS not covered by 4.4.2.2 to 4.4.2.14		P
4.4.2.2	PROTECTIVE IMPEDANCE	No PROTECTIVE IMPEDANCE	N/A
4.4.2.3	PROTECTIVE CONDUCTOR	No PROTECTIVE CONDUCTOR	N/A
4.4.2.4	Equipment or parts for short-term or intermittent operation	Continuous work	P
4.4.2.5	Motors	No motors	—
	– stopped while fully energized		N/A
	– prevented from starting		N/A
	– one phase interrupted (multi-phase)		N/A
4.4.2.6	Capacitors	No such capacitors	N/A
4.4.2.7	MAINS transformers	No MAINS transformers	N/A
4.4.2.7.2	Short circuit		N/A
4.4.2.7.3	Overload		N/A
4.4.2.8	Outputs		N/A
4.4.2.9	Equipment for more than one supply	Only one supply	N/A
4.4.2.10	Cooling	No cooling parts	—
	– air holes closed		N/A
	– fans stopped		N/A
	– coolant stopped		N/A
	– loss of cooling liquid		N/A
4.4.2.11	Heating devices	No heating devices	—
	– timer overridden		N/A
	– temperature controller overridden		N/A
4.4.2.12	Insulation between circuits and parts	No such parts	N/A
4.4.2.13	Interlocks	No interlocks	N/A
4.4.2.14	Voltage selectors	No such devices	N/A
4.4.3	Duration of tests		—
4.4.4	Conformity after application of fault conditions		P
5	**MARKING AND DOCUMENTATION**		P
5.1	**Marking**		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.1	General		P
	Required equipment markings		—
	– Visible from the exterior; or		P
	– Visible after removing cover or opening door	No such markings	N/A
	– Visible after removal from a rack or panel	No such markings	N/A
	Not put on parts which can be removed by an operator		P
	Letter symbols (IEC 60027) used		P
	Graphic symbols of Table 1 used		P
5.1.2	Identification		P
	Equipment is identified by:		—
	a) Manufacturer's or supplier's name or trademark		P
	b) Model number, name or other means		P
	Manufacturing location identified	Only one manufacturing location	N/A
5.1.3	MAINS supply	Battery operated	N/A
	Equipment is marked as follows:		—
	a) Nature of supply:		—
	1) a.c. RATED MAINS frequency or range of frequencies .....:		—
	2) d.c. with symbol 1.....:		—
	b) RATED supply voltage(s) or range .....:		—
	c) Max. RATED power (W or VA) or input current.....:		—
	The marked value not less than 90 % of the maximum value		N/A
	If more than one voltage range:		—
	Separate values marked; or		N/A
	Values differ by less than 20 %		N/A
	d) OPERATOR-set for different RATED supply voltages:		—
	Indicates the equipment set voltage		N/A
	PORTABLE EQUIPMENT indication is visible from the exterior		N/A
	Changing the setting changes the indication		N/A
	e) Accessory MAINS socket-outlets accepting standard MAINS plugs are marked:		—
	With the voltage if it is different from the MAINS sup		—
	For use only with specific equipment		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	If not marked for specific equipment it is marked with:		—
	The maximum RATED current or power; or		N/A
	Symbol 14 with full details in the documentation		N/A
5.1.4	Fuses	No fuses	N/A
	OPERATOR replaceable fuse marking (see also 5.4.5).....:		—
5.1.5	TERMINALS, connections and operating devices		P
5.1.5.1	General		P
	If necessary for safety, indication of the purpose of TERMINALS, connectors, controls, and indicators are marked		P
	Where insufficient space, symbol 14 is used.		P
	Push-buttons and actuators of emergency stop devices and indicators:	No such parts	—
	– used only to indicate a warning of danger; or		N/A
	– the need for urgent action		N/A
	– coloured red		N/A
	– coded as specified in IEC 60073		N/A
	Supplementary means of coding provided, if meaning of colour relates (see IEC 60073):	No such supplementary means	—
	– to safety of persons; or		N/A
	– safety of the environment		N/A
5.1.5.2	TERMINALS		—
	MAINS supply TERMINAL identified	Battery operated	N/A
	Other TERMINAL marking:		—
	a) FUNCTIONAL EARTH TERMINALS marked with symbol 5	No FUNCTIONAL EARTH TERMINALS	N/A
	b) PROTECTIVE CONDUCTOR TERMINALS:	No PROTECTIVE CONDUCTOR TERMINALS	—
	Symbol 6 is placed close to or on the TERMINAL; or		N/A
	Part of appliance inlet		N/A
	c) TERMINALS of circuits (symbol 7 used)	No such terminals	N/A
	d) HAZARDOUS LIVE TERMINALS supplied from the interior of the hand-held multimeter are marked with the voltage, current, charge or energy value or range, or;	No such *HAZARDOUS LIVE TERMINALS*	N/A
	- marked with symbol 12 of Table 1		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	aa) TERMINALS supplied from other TERMINALS which could be HAZARDOUS LIVE, with symbol 12 or 14 of Table 1	No such terminals	N/A
5.1.5.101	*Measuring circuit TERMINALS*		P
	Marked with rated voltage to earth		P
	Each pair or set of measuring circuit TERMINALS are marked with RATED voltage or current or both	*CAT IV 600V, CAT III 1000V*	—
	TERMINALS RATED for MAINS are marked "CAT III and/or "CAT IV"		P
	c) *Alternate markings are used for measuring circuit TERMINALS that do not exceed the levels of 6.3.1*		N/A
	d) *Markings are not used for dedicated measuring circuit TERMINALS, but a means for identification is provided*	*No such measuring circuit TERMINALS*	N/A
	TERMINALS markings are visible with connectors and TERMINALS mated		P
5.1.6	Switches and circuit-breakers	No switches and circuit-breakers	N/A
	If disconnecting device, off position clearly marked		N/A
	If push-button used as power supply switch:		—
	– Symbol 9 and 15 used for on-position		N/A
	– Symbol 10 and 16 used for off-position		N/A
	– Pair of symbols 9, 15 and 10, 16 close together		N/A
5.1.7	Equipment protected by DOUBLE INSULATION or REINFORCED INSULATION		P
	Protected throughout (symbol 11 used)	Symbol 11 marked on rear panel	P
	Only partially protected (symbol 11 not used)		N/A
5.1.8	Field-wiring TERMINAL boxes	No Field-wiring TERMINAL boxes	N/A
	If TERMINAL or ENCLOSURE exceeds 60 °C:		—
	Cable temperature RATING marked .....:		—
	Marking visible before and during connection or beside TERMINAL		N/A
5.2	***Warning markings***		P
	Warning markings are visible in NORMAL USE		P
	Warning marking is placed on or near the particular part		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

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	b) Symbols or text moulded, stamped or engraved in material min. 2,0 mm high		P
	0.5 mm depth or raised if not contrasting in colour		P
	If necessary, marked with symbol 14		P
	Additional symbols such as symbol 12, 13 or 17 used to indicate the nature of HAZARD	No such additional symbols	N/A
	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		P
5.4	**Documentation**		P
5.4.1	General		P
	Hand-held multimeter is accompanied by documentation for safety purposes in an accepted language for OPERATOR or RESPONSIBLE BODY		P
	Safety documentation in a selected language for service personnel authorized by the manufacturer		P
	Documentation includes:		—
	a) Intended use		P
	b) Technical specification		P
	c) Name and address of manufacturer or supplier		P
	d) Information specified in 5.4.2 to 5.4.6		P
	e) Information to mitigate residual RISK (see also subclause 17)		N/A
	f) Accessories for safe operation of the equipment specified	No such accessories	N/A
	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	No such hazardous	N/A
	h) Instructions for lifting and carrying	Hand-held equipment No such required	N/A
	Warning statements and a clear explanation of warning symbols:		—
	– provided in the documentation; or		P
	– information is marked on the equipment		N/A
	aa) indication that probe assemblies are appropriately RATED for MEASUREMENT CATEGORY III or IV and have a suitable voltage RATING for the circuit to be measured		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	bb) information about each relevant MEASUREMENT CATEGORY *(see 5.1.5.101). If the hand-held multimeter has multiple* MEASUREMENT CATEGORY RATINGS, *the documentation clearly identifies* MEASUREMENT CATEGORIES *where the hand-held multimeter may be used or must not be used*		P
	Documentation may be provided on printed or electronic media, however printed information is required for all information necessary for safety that might not be available in electronic form at the time it is needed. The documentation shall be delivered with the equipment. Consideration shall be given to the ability of the RESPONSIBLE BODY to read the media.	Printed media	P
5.4.2	Equipment RATINGS		P
	Documentation includes:		—
	a) Supply voltage or voltage range.....:	1 x 9V 6LR61 6F22 battery	—
	Frequency or frequency range .....:		—
	Power or current rating.....:		—
	b) Description of all input and output connections in accordance to 6.6.1 a)	No other connections except measuring terminal	N/A
	c) RATING of insulation of external circuits in accordance to 6.6.1 b)	No such connections	N/A
	d) Statement of the range of environmental conditions (refer to 1.4):		—
	1) indoor or outdoor use,	Indoor used	P
	2) altitude,	Up to 2000m	P
	3) temperature,	0 – 40℃	P
	4) relative humidity,	≤75%	P
	5) MAINS supply voltage fluctuations,	Battery operated	P
	6) OVERVOLTAGE CATEGORY,	Battery operated	P
	7) WET LOCATION, if applicable,		N/A
	8) POLLUTION DEGREE of the intended environment	2	P
	e) Degree of ingress protection (IEC 60529)		N/A
	f) If impact rating less than 5 J:	Hande-held equipment No impact test required	—
	IK code in accordance to IEC 62262 marked; or		N/A
	symbol 14 of Table 1 marked, with		N/A
	RATED energy level and test method stated		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.3	Equipment installation	Hande-held equipment No installation required	N/A
	Documentation includes instructions for:		—
	a) Assembly, location and mounting requirements		N/A
	b) Instructions for protective earthing		N/A
	c) Connections to supply		N/A
	d) PERMANENTLY CONNECTED EQUIPMENT:		—
	1) Supply wiring requirements		N/A
	2) If external switch or circuit-breaker, requirements and location recommendation		N/A
	e) Ventilation requirements	No such requirements	N/A
	f) Safety characteristics for special external services (e. g. maximum and minimum temperature, pressure, flow of air, cooling liquid)		N/A
	g) Instructions relating to sound level		N/A
5.4.4	Equipment operation		P
	Instructions for use include:		—
	a) Identification and description of operating controls		P
	b) Positioning for disconnection	Battery operated	N/A
	c) Instructions for interconnection to accessories or other equipment		P
	d) Specification of intermittent operation limits	Continuous work	N/A
	e) Explanation of symbols used		P
	f) Replacement of consumable materials	6F22 6LR61 battery	P
	g) Cleaning and decontamination	No such requirements	N/A
	h) Listing of any poisonous or injurious gases and quantities	No poisonous or injurious gases and quantities	N/A
	i) RISK reduction procedures relating to flammable liquids (see 9.5 c)	No flammable liquids	N/A
	j) RISK reduction procedures relating burn from surfaces permitted to exceed limits of 10.1	No parts exceed limits of 10.1	N/A
	Additional precautions for IEC 60950 conforming equipment in regard to moistures and liquids		N/A
	A statement about protection impairment if used in a manner not specified by the manufacturer		P
5.4.5	Equipment maintenance and service		P
	Instructions for RESPONSIBLE BODY include:		—
	Instructions sufficient in detail permitting safe maintenance and inspection and continued safety:		—

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	Instruction against the use of detachable MAINS supply cord with inadequate RATING	Battery operated	P
	Specific battery type of user replaceable batteries	6LR61 6F22 battery	P
	Any manufacturer specified parts	No specified parts	N/A
	RATING and characteristics of fuses	No fuse	N/A
	Instructions include following subjects permitting safe servicing and continued safety:	No such risk	—
	a) Product specific RISKS may affect service personnel		N/A
	b) Protective measures for these RISKS		N/A
	c) Verification of the safe state after repair		N/A
5.4.6	Integration into systems or effects resulting from special conditions	No such risk	N/A
	Aspects described in documentation		N/A
6	**PROTECTION AGAINST ELECTRIC SHOCK**		P
6.1	**General**		P
6.1.1	Requirements		P
	Protection against electric shock maintained in NORMAL CONDITION and SINGLE FAULT CONDITION		P
	ACCESSIBLE parts not HAZARDOUS LIVE		P
	Voltage, current, charge or energy below the limits in NORMAL CONDITION and in SINGLE FAULT CONDITION between:		—
	ACCESSIBLE parts and earth		P
	two ACCESSIBLE parts on same piece of the equipment within a distance of 1,8 m		P
	Conformity is checked by the determination of 6.2 and 6.3 followed by the tests of 6.4 to 6.11		P
6.1.2	Exceptions		N/A
	Following HAZARDOUS LIVE parts may be ACCESSIBLE to an OPERATOR:	No such parts	—
	a) parts of lamps and lamp sockets after lamp removal		N/A
	b) parts to be replaced by OPERATOR only by the use of tool and warning marking		N/A
	Those parts not HAZARDOUS LIVE 10 s after interruption of supply		N/A
	Capacitance test if charge is received from internal capacitor		N/A
6.2	**Determination of ACCESSIBLE parts**		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
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		P
	– with jointed test finger (as specified B.2)		P
	– with rigid test finger (as specified B.1) and a force of 10 N		P
6.2.3	Openings above parts that are HAZARDOUS LIVE	No openings	N/A
	– test pin with length of 100 mm and 4 mm in diameter applied		N/A
6.2.4	Openings for pre-set controls	No such parts	N/A
	– test pin with length of 100 mm and 3 mm in diameter applied		N/A
6.3	**Limit values for ACCESSIBLE parts**		P
6.3.1	Levels in NORMAL CONDITION		P
	a) Voltage limits less than 30 V r.m.s. and 42,4 V peak or 60 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.	Not used in WET LOCATIONS	N/A
	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	A1: 0.036mArms, 0.054mApk	P
	for WET LOCATIONS measuring circuit A.4 used	Not used in WET LOCATIONS	N/A
	70 mA r.m.s. when measured with circuit A.3 for higher frequencies	0.018mArms	P
	c) Levels of capacitive charge or energy less:	No such capacitance	—
	1) 45 µC for voltages up to 15 kV peak or d.c. or line A of Figure 3		N/A
	2) 350 mJ stored energy for voltages above 15 kV peak or d.c.		N/A
6.3.2	Levels in SINGLE FAULT CONDITION		P
	a) Voltage limits less than 50 V r.m.s. and 70 V peak or 120 V d.c.		P
	for WET LOCATIONS voltage limits less than 33 V r.m.s. and 46,7 V peak or 70 V d.c.	Not used in WET LOCATIONS	P
	Voltages are not HAZARDOUS LIVE the levels of:		—

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	b) Current less than 3,5 mA r.m.s. for sinusoidal, 5 mA peak non-sinusoidal or mixed frequencies or 15 mA d.c. when measured with measuring circuit A.1 or A.2 if less than 100 Hz	A1: 0.036mArms, 0.054mApk	P
	for WET LOCATIONS measuring circuit A.4 used	Not used in WET LOCATIONS	N/A
	500 mA r.m.s. when measured with circuit A.3 for higher frequencies	0.018mArms	P
	c) Levels of capacitive charge or energy less line B of Figure 3	No such capacitance	N/A
6.4	**Primary means of protection**		P
6.4.1	General		P
	ACCESSIBLE parts prevented from being HAZARDOUS LIVE by one or more of following means:		—
	a) ENCLOSURES or PROTECTIVE BARRIERS (see 6.4.2)		P
	b) BASIC INSULATION (see 6.4.3)		P
	c) Impedance (see 6.4.4)	No such protection	N/A
6.4.2	ENCLOSURES or PROTECTIVE BARRIERS		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		P
	– meet CLEARANCE, CREEPAGE DISTANCE and solid insulation requirements of 6.7		P
6.4.4	Impedance	No such protection	N/A
	Impedance used as primary means of protection meets all the following requirements:		—
	a) limits current or voltage to level of 6.3.2		N/A
	b) RATED for maximum WORKING VOLTAGE and the amount of power it will dissipate		N/A
	c) CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of BASIC INSULATION of 6.7		N/A
6.5	**Additional means of protection in case of SINGLE FAULT CONDITION**		P
6.5.1	General		P
	ACCESSIBLE parts are prevented from becoming HAZARDOUS LIVE by the primary means of protection and supplemented by one of: ..... :		—

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	a) SUPPLEMENTARY INSULATION (see 6.5.3)		P
	b) Current or voltage limiting device (see 6.5.6)	No such devices	N/A
	c) REINFORCED INSULATION (see 6.5.3)		P
	d) PROTECTIVE IMPEDANCE (see 6.5.4)	No such protection	N/A
6.5.2	NOT USED		—
6.5.3	Voltage limiting devices or voltage-sensitive tripping devices as defined in a) and b), shall have at least the voltage and current RATINGS of the measuring TERMINALS.	No such devices	N/A
	Meet CLEARANCE, CREEPAGE DISTANCE and solid insulation requirements of 6.7		N/A
6.5.4	PROTECTIVE IMPEDANCE	No such protection	N/A
	Limits current or voltage to level of 6.3.1 in NORMAL and to level of 6.3.2 in SINGLE FAULT CONDITION		N/A
	CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of DOUBLE or REINFORCED INSULATION of 6.7		N/A
	The PROTECTIVE IMPEDANCE consists of one or more of the following:		—
	a) appropriate single component suitable for safety and reliability for protection, it is:		—
	1) RATED twice the maximum WORKING VOLTAGE		N/A
	2) resistor RATED for twice the power dissipation for maximum WORKING VOLTAGE		N/A
	b) combination of components		N/A
	Single electronic device not used as PROTECTIVE IMPEDANCE		N/A
6.5.5	Not used		—
6.5.6	Current- or voltage-limiting devices	No such devices	N/A
	Device complies with all of:		—
	a) RATED to limit the current or voltage to the level of 6.3.2		N/A
	b) RATED for the maximum WORKING VOLTAGE; and		N/A
	RATED for the maximum operational current if applicable		N/A
	c) CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of SUPPLEMENTARY INSULATION of 6.7		N/A
6.6	**Connections to external circuits**	No such connections except measuring terminals	N/A
6.6.1	General		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	Connections do not cause ACCESSIBLE parts of the following to become HAZARDOUS LIVE in NORMAL CONDITION or SINGLE FAULT CONDITION:		—
	– the external circuits		N/A
	– the equipment		N/A
	Protection achieved by separation of circuits; or		N/A
	short circuit of separation does not cause a HAZARD		N/A
	Instructions or markings for each terminal include:		—
	a) RATED conditions for TERMINAL		N/A
	b) Required RATING of external circuit insulation		N/A
6.6.2	TERMINALS for external circuits	No such terminals	N/A
	TERMINALS which receive a charge from an internal capacitor are not HAZARDOUS LIVE after 10 s of interrupting supply connection		N/A
6.6.3	Circuits with terminals which are HAZARDOUS LIVE	No HAZARDOUS LIVE terminals	N/A
	These circuits are:		—
	Not connected to ACCESSIBLE conductive parts; or		N/A
	Connected to ACCESSIBLE conductive parts, but are not MAINS CIRCUITS and have one TERMINAL contact at earth potential		N/A
	No ACCESSIBLE conductive parts are HAZARDOUS LIVE		N/A
6.6.4	Terminals for stranded conductors	No such terminals	N/A
	No RISK of accidental contact because:		—
	– Located or shielded		N/A
	– Self-evident or marked whether or not connected to ACCESSIBLE conductive parts		N/A
	Complies as applicable:		—
	a) Manufacturer's specified maximum length of removed insulation, or		N/A
	b) 8 mm length of insulation removed		N/A
6.6.101	*Measuring circuit TERMINALS*		P
	Conductive parts of unmated measuring circuit TERMINAL are separated by at least.....:		—
	a) For TERMINALS with voltage RATING up to 1000Va.c. or 1500Vd.c. the applicable CLEARANCE AND CREEPAGE DISTANCE of Table 101		P
	b) For TERMINALS with voltage RATING exceeding 1000Va.c. or 1500Vd.c., 2.8mm for the CLEARANCE and CREEPAGE DISTANCE.		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	These TERMINALS also withstand the voltage test of 6.8 with voltage equal to the RATED voltage of TERMINAL multiple by 1.25		N/A
6.6.102	*Specialized measuring circuit TERMINALS*	No such *TERMINALS*	N/A
	Components, sensors, and devices for connecting to specialized measuring circuit TERMINALS are not both ACCESSIBLE and HAZARDOUS LIVE, in either NORMAL CONDITION or SINGLE-FAULT CONDITION		N/A
	Accessible parts did not exceed the levels of 6.3.1 and 6.3.2 .....:		N/A
6.7	**Insulation requirements**		P
6.7.1	The nature of insulation		P
6.7.1.1	General		P
	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		P
	Equipment rated for operating altitude greater than 2000 m correction factor of Table 3 of 61010-1 applied	Up to 2000m	N/A
6.7.1.3	CREEPAGE DISTANCES		P
	Required CREEPAGE DISTANCES reflecting factors of 6.7.1.1 a) to d)		P
	CTI material group reflected by requirements		P
	CTI test performed		N/A
	CREEPAGE DISTANCES according to material group I used		P
	CREEPAGE DISTANCES according to material group I used for the insulating materials of the TERMINALS connected only to a hand-held probe assembly complying with Part 031		P
6.7.1.4	Solid insulation		P
	Required solid insulation reflecting factors of 6.7.1.1 a) to d)		P
6.7.1.5	*Requirements for insulation according to type of circuit*	All of internal circuits are considered to be rated for CAT IV 600V, CAT III 1000V	P
	a) .. 6.7.2 MAINS circuits of OVERVOLTAGE CATEGORY II up to nominal supply voltage of 300 V		N/A
	b) .. 6.7.3 SECONDARY CIRCUITS SEPARATED FROM CIRCUITS DEFINED IN A) BY TRANSFORMER		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	c) .. K.1 MAINS CIRCUITS OF OVERVOLTAGE CATEGORY III AND IV OR OVERVOLTAGE CATEGORY II OVER 300 V		N/A
	d) .. K.2 SECONDARY CIRCUITS SEPARATED FROM CIRCUITS DEFINED IN C) BY TRANSFORMER		N/A
	e) .. K.3 CIRCUITS HAVING ONE OR MORE OF:	All of internal circuits are considered to be rated for CAT IV 600V, CAT III 1000V	N/A
	1) .. maximum TRANSIENT OVERVOLTAGE above the level of MAINS CIRCUIT		N/A
	2) .. Working voltage is the sum of more than one circuit or a mixed voltage		N/A
	3) .. Working voltage includes recurring peak voltage, may include non-sinusoidal or non-periodic waveform		N/A
	4) .. Working voltage with a frequency above 30 kHz		N/A
	5) .. Measuring category do not apply to measuring circuit		N/A
	f) ... K.101 FOR MEASURING CIRCUITS MEASUREMENT CATEGORY II AND IV	CAT IV 600V, CAT III 1000V	P
6.7.2	Insulation for MAINS CIRCUITS of OVERVOLTAGE CATEGORY II with a nominal supply voltage up to 300 V	All of internal circuits are considered to be rated for CAT IV 600V, CAT III 1000V	N/A
6.7.2.1	CLEARANCES and CREEPAGE DISTANCES		—
	Values for MAINS CIRCUITS of Table 4 are met		N/A
	Coatings to achieve reduction to POLLUTION DEGREE 1 comply with requirements of Annex H		N/A
6.7.2.2	Solid insulation		N/A
6.7.2.2.1	General		N/A
	Withstands electrical and mechanical stresses in normal use and all RATED environmental conditions of 1.4		N/A
	Equipment passed voltage tests of 6.8.3 with values of Table 5		N/A
	Complies as applicable:		—
	a) ENCLOSURE or PROTECTIVE BARRIER of Clause 8		N/A
	b) moulded and potted parts requirements of 6.7.2.2.2		N/A
	c) inner layers of printed wiring boards requirements of 6.7.2.2.3		N/A
	d) thin-film insulation requirements of 6.7.2.2.4		N/A
6.7.2.2.2	Moulded and potted parts		—

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	Conductors between same two layers are separated by at least 0,4 mm after moulding is completed		N/A
6.7.2.2.3	Inner insulating layers of printed wiring boards		—
	Separated by at least 0,4 mm between same two layers		N/A
	REINFORCED INSULATION has adequate electric strength; one of following methods used:		—
	a) thickness of insulation is at least 0,4 mm		N/A
	b) insulation is assembled of minimum two separate layers, each RATED for test voltage of Table 5 for BASIC INSULATION		N/A
	c) insulation is assembled of minimum two separate layers, where the combination is rated for test voltage of Table 5 for REINFORCED INSULATION		N/A
6.7.2.2.4	Thin-film insulation		—
	Conductors between same two layers are separated by applicable CLEARANCES and CREEPAGE DISTANCE of 6.7.2.1		N/A
	REINFORCED INSULATION have adequate electric strength; one of the following methods used:		—
	a) thickness through the insulation at least 0,4 mm		N/A
	b) insulation is assembled of min. two separate layers, each RATED for test voltage of Table 5 for BASIC INSULATION		N/A
	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		N/A
6.7.3	Insulation for secondary circuits derived from MAINS CIRCUITS of OVERVOLTAGE CATEGORY II up to 300 V	All of internal circuits are considered to be rated for CAT IV 600V, CAT III 1000V	N/A
6.7.3.1	General		N/A
	Secondary circuits where separation from MAINS CIRCUITS is achieved by a transformer providing:		—
	– REINFORCED INSULATION		N/A
	– DOUBLE INSULATION		N/A
	– screen connected to the PROTECTIVE CONDUCTOR TERMINAL		N/A
6.7.3.2	CLEARANCES		N/A
	a) meet the values of Table 6 for BASIC INSULATION and SUPPLEMENTARY INSULATION; or		N/A
	twice the values of Table 6 for REINFORCED INSULATION; or		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	b) pass the voltage tests of 6.8 with values of Table 6;		N/A
	with following adjustments:		—
	1) values for reinforced insulation are 1,6 times the values for basic insulation		N/A
	2) if operating altitude is greater than 2000 m values of CLEARANCES multiplied with factor of Table 3		N/A
	3) minimum CLEARANCE is 0,2 mm for POLLUTION DEGREE 2 and 0,8 mm for POLLUTION DEGREE 3		N/A
6.7.3.3	CREEPAGE DISTANCES		N/A
	Based on WORKING VOLTAGE meets the values of Table 7 for BASIC and SUPPLEMENTARY INSULATION		N/A
	Values for REINFORCED INSULATION are twice the values of BASIC INSULATION		N/A
	Coatings to achieve reduction to POLLUTION DEGREE 1 comply with requirements of Annex H		N/A
6.7.3.4	Solid insulation		N/A
6.7.3.4.1	General		N/A
	Withstands electrical and mechanical stresses in normal use and all RATED environmental conditions of 1.4		—
	a) Equipment passed voltage test of 6.8.3.1 for 5 s with VALUES of Table 6 for BASIC and SUPPLEMENTARY INSULATION		N/A
	values for REINFORCED INSULATION are 1,6 times the values of BASIC INSULATION		N/A
	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		N/A
	value for REINFORCED INSULATION are twice the WORKING VOLTAGE		N/A
	Complies as applicable:		—
	1) ENCLOSURE or PROTECTIVE BARRIER of Clause 8		N/A
	2) moulded and potted parts requirements of 6.7.3.4.2		N/A
	3) inner layers of printed wiring boards requirements of 6.7.3.4.3		N/A
	4) thin-film insulation requirements of 6.7.3.4.4		N/A
6.7.3.4.2	Moulded and potted parts		—
	Conductors between same two layers are separated by applicable distances of Table 8		N/A
6.7.3.4.3	Inner insulation layers of printed wiring boards		—

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	Separated by at least the applicable distances of Table 8 between same two layers		N/A
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		—
	a) thickness at least applicable distance of Table 8		N/A
	b) insulation is assembled of minimum two separate layers, each RATED for test voltage of Table 6 for BASIC INSULATION		N/A
	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/A
6.7.3.4.4	Thin-film insulation		—
	Conductors between same two layers are separated by applicable CLEARANCES and CREEPAGE DISTANCE of 6.7.3.2 and 6.7.3.3		N/A
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		—
	a) thickness at least applicable distance of Table 8		N/A
	b) insulation is assembled of min. two separate layers, each RATED for test voltage of Table 6 for BASIC INSULATION		N/A
	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:		—
	a.c. test of 6.8.3.1; or		N/A
	d.c. test of 6.8.3.2 for circuits stressed only by d.c. voltages		N/A
6.8	**Procedure for voltage tests**		P
6.9	**Constructional requirements for protection against electric shock**		P
6.9.1	General		P
	If a failure could cause a HAZARD:		—
	a) security of wiring connections		P
	b) screws securing removable covers		P
	c) accidental loosening		P
	d) CLEARANCES and CREEPAGE DISTANCES not reduced below the values of basic insulation by loosening of parts or wires		P
6.9.2	Insulating materials		P
	Material not to be used for safety relevant insulation:		—
	a) easily damaged materials not used		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	b) non-impregnated hygroscopic materials not used		P
6.9.3	Colour coding		N/A
	Green-and-yellow insulation shall not be used except:		—
	a) protective earth conductors;	No protective earth conductors	N/A
	b) PROTECTIVE BONDING conductors;	No PROTECTIVE BONDING conductors	N/A
	c) potential equalization conductors;	No potential equalization conductors	N/A
	d) functional earth conductors	No functional earth conductors	N/A
6.9.101	*Hand Held multimeter RATINGS*	CAT IV 600V, CAT III 1000V	P
	Measuring circuit TERMINALS are RATED min. 300 V a.c. r.m.s. to earth, and;		P
	MEASUREMENT CATEGORY III or IV.		P
	The RATED voltage of measuring circuit TERMINALS is equal to or higher than the RATED voltage to earth		P
6.10	Connection to MAINS supply source and connections between parts of equipment	Battery operated	N/A
6.10.1	MAINS supply cords	No MAINS supply cords	N/A
	RATED for maximum equipment current (see 5.1.3 c)		N/A
	Cable complies with IEC 60227 or IEC 60245		N/A
	Heat-resistant if likely to contact hot parts		N/A
	Temperature RATING (cord and inlet) .....:		—
	Green/yellow used only for connection to PROTECTIVE CONDUCTOR TERMINALS		N/A
	Detachable cords with IEC 60320 MAINS connectors:		—
	Conform to IEC 60799; or		N/A
	Have the current RATING of the MAINS connector		N/A
6.10.2	Fitting of non-detachable MAINS supply cords		N/A
6.10.2.1	Cord entry		—
	a) inlet or bushing with a smoothly rounded opening; or		N/A
	b) insulated cord guard protruding >5 D (diameter)		N/A
6.10.2.2	Cord anchorage		—
	Protective earth conductor is the last to take the strain		N/A
	a) cord is not clamped by direct pressure from a screw		N/A
	b) knots are not used		N/A
	c) cannot push the cord into the equipment to cause a HAZARD		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	d) no failure of cord insulation in anchorage with metal parts		N/A
	e) not to be loosened without a tool		N/A
	f) cord replacement does not cause a HAZARD and method of strain relief is clear		N/A
	Push-pull and or torque test		N/A
6.10.3	Plugs and connectors		N/A
	MAINS supply plugs, connectors etc., conform with relevant specifications		N/A
	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/A
	MAINS type plugs used only for connection to MAINS supply		N/A
	Plug pins which receive a charge from an internal capacitor		N/A
	Accessory MAINS socket outlets:		—
	a) marking if accepts a standard MAINS supply plug (see 5.1.3e)		N/A
	b) input has a protective earth conductor if outlet has EARTH TERMINAL CONTACT		N/A
6.11	**Disconnection from supply source**	Battery operated	N/A
6.11.1	Disconnects all current-carrying conductors		N/A
6.11.2	Exceptions		N/A
6.11.3	Requirements according to type of equipment		N/A
6.11.3.1	PERMANENTLY CONNECTED EQUIPMENT and multi-phase equipment		N/A
	Employs switch or circuit-breaker		N/A
	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/A
	b) suitable location easily reached		N/A
	c) marking as disconnecting for the equipment		N/A
6.11.3.2	Single-phase cord-connected equipment		N/A
	Equipment is provided with one of the following:		—
	a) switch or circuit-breaker		N/A
	b) appliance coupler (disconnectable without tool)		N/A
	c) separable plug (without locking device)		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
6.11.4	Disconnecting devices		N/A
6.11.4.1	General		N/A
	Disconnecting device part of equipment		N/A
	Electrically close to the SUPPLY		N/A
	Power-consuming components not electrically located between the supply source and the disconnecting device		N/A
	Except electromagnetic interference suppression circuits permitted to be located on the supply side of the disconnecting device		N/A
6.11.4.2	Switches and circuit-breakers		N/A
	When used as disconnection device:		—
	Circuit breaker meets the relevant requirements IEC 60947-2 and is suitable for the application		N/A
	Switch meets the relevant requirements IEC 60947-3 and is suitable for the application		—
	Marked to indicate function .....:		—
	Not incorporated in MAINS cord		N/A
	Does not interrupt PROTECTIVE EARTH CONDUCTOR		N/A
6.11.4.3	Appliance couplers and plugs		N/A
	Where an appliance coupler or separable plug is used as the disconnecting device (see 6.11.3.2):		—
	Readily identifiable and easily reached by the operator		N/A
	Single-phase portable equipment cord length not more than 3 m		N/A
	PROTECTIVE EARTH CONDUCTOR connected first and disconnected last		N/A
7	**PROTECTION AGAINST MECHANICAL HAZARDS**		P
7.1	**General**		P
	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
	Do not cause injury during NORMAL USE and		P
	Do not cause injury during SINGLE FAULT CONDITION		P
7.3	**Moving parts**	No moving parts	N/A
7.3.1	General		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	HAZARDS from moving parts limited to a tolerable level with the conditions specified in 7.3.2 and 7.3.5		N/A
	RISK assessment in accordance with 7.3.3 carried out		N/A
7.3.2	Exceptions		N/A
	Access to HAZARDOUS moving parts permitted under following circumstances:		—
	a) obviously intended to operate on parts or materials external of the equipment		N/A
	inadvertent touching of moving parts minimized by equipment design (e .g. guards or handles)		N/A
	b) If OPERATOR access is unavoidable outside NORMAL USE following precautions have been taken:		—
	1) access requires TOOL		N/A
	2) statement about training in the instructions		N/A
	3) warning markings on covers prohibiting access by untrained OPERATORS		N/A
	or symbol 14 with full details in documentation		N/A
7.3.3	RISK assessment for mechanical HAZARDS to body parts		N/A
	RISK is reduced to a tolerable level by protective measures as specified in Table 12		N/A
	Minimum protective measures:		—
	A. Low level measures		N/A
	B. Moderate measures		N/A
	C. Stringent measures		N/A
7.3.4	Limitation of force and pressure		N/A
	Following levels are met in NORMAL and SINGLE FAULT CONDITION:		—
	Continuous contact pressure below 50 N / cm^2 with force below 150 N		N/A
	Temporary force below 250 N for an area at least of 3 cm^2 for a maximum duration of 0,75 s		N/A
7.3.5	Gap limitations between moving parts		N/A
7.3.5.1	Access normally allowed		—
	If levels of 7.3.4 exceeded and a body part may be inserted minimum gap as specified in Table 13 assured in NORMAL and in SINGLE FAULT CONDITION		N/A
7.3.5.2	Access normally prevented		—
	Maximum gap as specified in Table 14 assured in NORMAL and in SINGLE FAULT CONDITION		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
7.4	**Stability**	Hand-held equipment	N/A
	Equipment not secured to building structure is physical stable		N/A
	Stability maintained after opening of drawers etc. by automatic means, or		N/A
	warning marking requires the application of means		N/A
	Compliance checked by following tests as applicable:		—
	a) 10° tilt test for other than handheld equipment		N/A
	b) multi-directional force test for equipment exceeds height of 1 m and mass of 25 kg		N/A
	c) downward force test for floor-standing equipment		N/A
	d) overload test with 4 times maximum load for castor or support foot that supports greatest load, or		N/A
	e) castor or support foot that supports greatest load removed from equipment		N/A
7.5	**Provisions for lifting and carrying**	Hand-held equipment	N/A
7.5.1	General		N/A
	Equipment more than 18 kg.....:		N/A
	Has means for lifting or carrying; or		N/A
	Directions are given in documentation		N/A
7.5.2	Handles and grips		N/A
	Handles or grips withstand four times weight		N/A
7.5.3	Lifting devices and supporting parts		N/A
	RATED for maximum load; or		N/A
	Tested with four times maximum static load		N/A
7.6	**Wall mounting**		N/A
	Mounting brackets withstand four times weight		N/A
	One fastener removed and test repeated with two times weight		N/A
7.7	**Expelled parts**	No such parts	N/A
	Equipment contains or limits the energy		N/A
	Protection not removable without the aid of a tool		N/A

8	**RESISTANCE TO MECHANICAL STRESSES**		P
8.1	**General**		P
	Equipment does not cause a HAZARD when subjected to mechanical stresses in NORMAL USE		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	Normal protection level is 5 J	Hand-held equipment No impact test required	N/A
	Levels below 5 J but not less than 1 J are acceptable if all of the following criteria are met:		—
	a) Lower level justified by RISK assessment of manufacturer		N/A
	b) Equipment installed in its intended application is not easily touched		N/A
	c) Only occasional access during NORMAL USE		N/A
	d) IK code in accordance to IEC 62262 marked or symbol 14 used with full information in the documentation		N/A
	for non-metallic ENCLOSURES rated below 2 °C ambient temperature value chosen for minimum RATED temperature		N/A
	impact energies between IK values, the IK code marked for nearest lower value		N/A
	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	HAND-HELD EQUIPMENT	N/A
	if specified impact energy is not 5 J alternate method of IEC 62262 used		N/A
	3) Drop test of 8.3.1 or 8.3.2 except for FIXED EQUIPMENT and equipment with mass over 100 kg		P
	Equipment RATED with an impact rating of IK 08 that obviously meets the criteria		N/A
	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		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	No moving parts	N/A
	vii) No damage which could cause spread of fire		P
8.2	**ENCLOSURE rigidity test**		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
8.2.1	Static test		P
	– 30 N with 12 mm rod applied to each part of ENCLOSURE		P
	– in case of doubt test conducted at maximum RATED ambient temperature		P
8.2.2	Impact test	Hand-held equipment No impact test required	N/A
	Impact applied to any part of ENCLOSURE causing a HAZARD if damaged		N/A
	Impact energy level and corresponding IK code.....:		—
	Non-metallic ENCLOSURES cooled to minimum RATED ambient temperature if below 2 °C		N/A
8.3	**Drop test**		P
8.3.1	Other than HAND-HELD and DIRECT-PLUG-IN EQUIPMENT	HAND-HELD EQUIPMENT	N/A
	Tests conducted with a drop height or angle of .....:		—
8.3.2	HAND-HELD and DIRECT-PLUG-IN EQUIPMENT		P
	Non-metallic ENCLOSURES cooled to minimum RATED ambient temperature if below 2 °C	0℃	P
	Drop test conducted with an height of 1 m		P

9	**PROTECTION AGAINST THE SPREAD OF FIRE**		P
9.1	**General**		P
	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):		—
	a) SINGLE FAULT test of 4.4; or		P
	b) Application of 9.2 (eliminating or reducing the sources of ignition); or		N/A
	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
	a) 1) Limited-energy circuit (see 9.4); or		N/A
	2) BASIC INSULATION provided for parts of different potential; or		N/A
	Bridging the insulation does not cause ignition		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	b) Surface temperature of liquids and parts (see 9.5)		N/A
	c) No ignition in circuits designed to produce heat		N/A
9.3	**Containment of the fire within the equipment, should it occur**		P
9.3.1	General		P
	Spread of fire outside equipment reduced to a tolerable level if:		—
	a) Energizing of the equipment is controlled by an OPERATOR held switch	No such controlled	N/A
	b) ENCLOSURE is conform with constructional requirements of 9.3.2; and		P
	Requirements of 9.5 are met	No flammable liquids	N/A
9.3.2	Constructional requirements		P
	a) Connectors and insulating material have flammability classification V-2 or better		P
	b) Insulated wires and cables are flame retardant (VW-1 or equivalent)		P
	c) ENCLOSURE meets following requirements:		—
	1) Bottom and sides in arc of 5 ° (see Figure 13) to non-limited circuits (9.4) meets:		—
	i) no openings; or	No openings	P
	ii) perforated as specified in Table 16; or		N/A
	iii) metal screen with a mesh; or		N/A
	iv) baffles as specified in Figure 12		N/A
	2) Material of ENCLOSURE and any baffle or flame barrier is made of:		—
	Metal (except magnesium); or		N/A
	Non-metallic materials have flammability classification V-1 or better		P
	3) ENCLOSURE and any baffle or flame barrier have adequate rigidity		P
9.4	**Limited-energy circuit**		N/A
	a) Potential not more than 30 r.m.s. and 42,4 V peak, or 60 V d.c.		N/A
	b) Current limited by one of following means:		—
	1) Inherently or by impedance (see Table 17); or		N/A
	2) Overcurrent protective device (see Table 18); or		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	3) A regulating network limits also in SINGLE FAULT CONDITION (see Table 17)		N/A
	c) Is separated by at least BASIC INSULATION		N/A
	Fuse or a nonadjustable electromechanical device is used		N/A
9.5	**Requirements for equipment containing or using flammable liquids**	No flammable liquids	N/A
	Flammable liquids contained in or specified for use with equipment do not cause spread of fire		N/A
	RISK is reduced to a tolerable level:		—
	a) The temperature of surface or parts in contact with flammable liquids is 25 °C below fire point		N/A
	b) The quantity of liquid is limited		N/A
	c) Flames are contained within the equipment		N/A
	Detailed instructions for RISK-reduction provided		N/A
9.6	**Overcurrent protection**		N/A
9.6.1	General		N/A
	MAINS supplied equipment protected	Battey operated	N/A
	BASIC INSULATION between MAINS parts of opposite polarity provided		N/A
	Overcurrent protection devices not fitted in the protective conductor		N/A
	Fuses or single-pole circuit-breakers not fitted in neutral (multi-phase equipment)		N/A
9.6.2	PERMANENTLY CONNECTED EQUIPMENT		N/A
	Overcurrent protection device:		—
	Fitted within the equipment; or		N/A
	Specified in manufacturer's instructions		N/A
9.6.3	Other equipment		N/A
	Protection within the equipment		N/A
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:		—
	– 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/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	Heated surfaces necessary for functional reasons exceeding specified values:	No parts exceed specified values	—
	– Are recognizable as such by appearance or function; or		N/A
	– Are marked with symbol 13		N/A
	– Guards are not removable without tool		N/A
10.2	**Temperatures of windings**	No windings	N/A
	Limits not exceeded in:		—
	NORMAL CONDITION		N/A
	SINGLE FAULT CONDITION		N/A
10.3	**Other temperature measurements**		P
	Following measurements conducted if applicable:		—
	a) Value of 60 °C of field-wiring terminal box not exceeded	No field-wiring terminal box	N/A
	b) Surface of flammable liquids and parts in contact with this liquids	No flammable liquids	N/A
	c) Surface of non-metallic ENCLOSURES		P
	d) Parts made of insulating material supporting parts connected to MAINS supply	Battery operated	N/A
	e) Terminals carrying a current more than 0,5 A	No such terminals	N/A
10.4	**Conduct of temperature tests**		P
10.4.1	General		P
	Tests conducted under reference test conditions and manufacturer's instructions		P
	Tests alternatively conducted at the least favourable ambient temperature within the RATED ambient temperature .....:		—
10.4.2	Temperature measurement of heating equipment		N/A
	Tests conducted in test corner		N/A
10.4.3	Equipment intended for installation in a cabinet or wall		N/A
	Equipment built in as specified in installation instructions		N/A
10.5	**Resistance to heat**		P
10.5.1	Integrity of CLEARANCE and CREEPAGE DISTANCES		P
10.5.2	Non-metallic ENCLOSURES		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		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	a) Parts supporting parts connected to MAINS supply	Battery operated	N/A
	b) TERMINALS carrying a current more than 0,5 A	No such terminals	N/A
	Examination of material data; or		N/A
	in case of doubt:		N/A
	1) Ball pressure test; or		N/A
	2) Vicat softening test of ISO 306		N/A
11	**PROTECTION AGAINST HAZARDS FROM FLUIDS AND SOLID FOREIGN OBJECTS**		P
11.1	**General**		P
	Protection to OPERATORS and surrounding area provided by EQUIPMENT		P
	All fluids specified by manufacturer considered	No specified fluids	N/A
11.2	**Cleaning**		N/A
11.3	**Spillage**		N/A
11.4	**Overflow**		N/A
11.5	**Battery electrolyte**		P
	Battery electrolyte leakage presents no HAZARD		P
11.6	**Equipment RATED with a degree of ingress protection (IP code)**		P
11.6.1	General		P
	Equipment marked with IP code ..... :	IP65	—
	Conditions specified in the documentation		P
11.6.2	Conditions for testing		P
	Equipment in clean and new condition, all parts in place and mounted as specified by manufacturer		P
	Complete equipment tested, or		P
	representative parts tested		N/A
	HAND-HELD EQUIPMENT and PORTABLE EQUIPMENT placed in least favourable position of NORMAL use		P
	Other equipment positioned or installed as specified		N/A
	TERMINALS provided with protective cap or cover, are installed as specified by manufacturer		P
	The equipment is operating (energized) during the treatment except:		—
	a) If manufacturer specifies degrees of protection for non-operating (de-energized) equipment, or		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	b) Equipment is operating or non-operating during the treatment with does not affect the test results		P
11.6.3	Protection against solid foreign objects (including dust)		P
	Applicable test of IEC 60529 for protection against solid foreign objects conducted		P
	Additionally inspection of equipment resulted:		—
	a) No deposit on insulation parts that could lead to a HAZARD	There are some dusts deposited at button, but the creepage distance and clearance between hazardous live parts and deposition area complied requirements.	P
	b) No created accumulations that have the potential to cause spread of fire		P
11.6.4	Protection against water		P
	Applicable test of IEC 60529 for protection against water conducted		P
	If any water has entered, safety is not impaired, inspection of equipment resulted:		—
	a) No deposit on insulation parts that could lead to a HAZARD	There are some waters deposited at button, but the creepage distance and clearance between hazardous live parts and deposition area complied requirements.	P
	b) Water has not reached hazardous live parts or windings which are not designed to operate when wet		P
	c) No accumulations near the end of cable nor enter the cable where it could cause a HAZARD	No cable	N/A
	d) No accumulations where it could lead to a HAZARD taking in consideration movement of the equipment		P
11.7	**Fluid pressure and leakage**		N/A
11.7.1	Maximum pressure .....:		—
	Maximum pressure of any part does not exceed P_{RATED}		N/A
11.7.2	Leakage and rupture at high pressure		N/A
	Fluid-containing parts checked by inspection or if a HAZARD could arise subjected to hydraulic test, if:		—
	a) product of pressure and volume > 200 kPa·l; and		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	b) pressure > 50 kPa		N/A
	Safety evidence established by calculation in acc. to national authorities (e.g. Pressure Equipment Directive 2014/68/EU)		N/A
	Parts of refrigerating systems meets pressure-related requirements of EN 378-2 or IEC 60335-2-89 as applicable		N/A
11.7.3	Leakage from low-pressure parts		N/A
11.7.4	Overpressure safety device		N/A
	Does not operate in NORMAL USE		N/A
	a) Connected as close as possible to parts intended to be protected		N/A
	b) Easy access for inspection, maintenance and repair		N/A
	c) Adjustment only with TOOL		N/A
	d) No discharge towards person		N/A
	e) No HAZARD from deposit of discharged material		N/A
	f) Adequate discharge capacity		N/A
	No shut-off valve between overpressure safety device and protected parts		N/A
12	**PROTECTION AGAINST RADIATION, INCLUDING LASER SOURCES, AND AGAINST SONIC AND ULTRASONIC PRESSURE**		P
12.1	**General**		P
	Equipment provides protection		P
12.2	**Equipment producing ionizing radiation**	No Ionizing radiation	N/A
12.2.1	Ionizing radiation		N/A
12.2.1.1	General		N/A
	Equipment meets the following requirements:		—
	a) if intended to emit radiation meets requirements of 12.2.1.2; or		N/A
	tested, classified and marked in accordance to IEC 62598		N/A
	b) if only emits stray radiation meets requirements of 12.2.1.3		N/A
12.2.1.2	Equipment intended to emit radiation	Not emit radiation	—
	Effective dose rate of radiation measured.....:		—
	If dose rate exceeds 5 µSv/h marked with the following:		—
	a) symbol 17 (ISO 361)		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	b) abbreviations of the radionuclides.....:		—
	c) with maximum dose at 1 m; or .....:		—
	with dose rate value between 1 µSv/h and 5 µSv/h in m.....:		—
12.2.1.3	Equipment not intended to emit radiation		—
	Limit for unintended stray radiation of 1 µSv/h at any easily reached point kept .....:		N/A
12.2.2	Accelerated electrons		N/A
	Compartments opened only by the use of a TOOL		N/A
12.3	**Optical radiation**		P
	No unintentional HAZARDOUS escape of optical radiation as ultraviolet, visible or infrared radiation, including light emitting diodes:		—
	– Checked by inspection; and		P
	– Radiation sources assessed in acc. to the requirements of IEC 62471, except for sources considered to be safe (Table 22) or conditionally safe (Table 23).	LCD screen considered to be safety (Table 22)	P
	– Lamp and lamp systems assessed to Risk Groups 1, 2, or 3 of IEC 62471 are labelled in acc. to IEC 62471-2		N/A
	– If labelling impractical, lamp or lamp systems marked with symbol 14		N/A
	– Protective measures, restrictions on use, and operating instructions that may be necessary are provided, including the applicable conditions of use of Table 23.		N/A
12.4	**Microwave radiation**	No microwave radiation	N/A
	Power density does not exceed 10 W/m^2.....:		N/A
12.5	**Sonic and ultrasonic pressure**	No noise	N/A
12.5.1	Sound level		N/A
	No HAZARDOUS sound emission		N/A
	Maximum sound pressure level measured and calculated for maximum sound power level as specified in ISO 3746 or ISO 9614-1		N/A
	Instruction describes measures for protection		N/A
12.5.2	Ultrasonic pressure		N/A
	Equipment not intended to emit ultrasound does not exceed limit of 110 dB between 20 kHz and 100 kHz		N/A
	Equipment intended to emit ultrasound:		N/A
	Outside useful beam does not exceed limit of 110 dB between 20 kHz and 100 kHz		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	If inside useful beam above values exceeded:		—
	Marked with Symbol 14 of Table 1		N/A
	and following information in the documentation:		—
	a) dimensions of useful beam		N/A
	b) area where ultrasonic pressure exceed 110 dB		N/A
	c) maximum sound pressure inside beam area		N/A
12.6	**Laser sources**	No laser source	N/A
	Equipment meets requirements of IEC 60825-1		N/A
13	**PROTECTION AGAINST LIBERATED GASES AND SUBSTANCES, EXPLOSION AND IMPLOSION**		P
13.1	**Poisonous and injurious gases and substances**	No such gases and substances	N/A
	No hazardous substances liberated in NORMAL CONDITION and in SINGLE FAULT CONDITION		N/A
	If potentially-hazardous substances are liberated:		—
	Operator is not directly exposed to a quantity of the substance that could cause harm		N/A
	Requirements to discharge of hazardous substances during NORMAL operation in accordance to manufacturer's instructions not considered as liberation		N/A
	Attached data/test reports demonstrate conformity		N/A
13.2	**Explosion and implosion**		N/A
13.2.1	Components		N/A
	Components liable to explode:		—
	Pressure release device provided; or		N/A
	Apparatus incorporates operator protection (see also 7.7)		N/A
	Pressure release device:		—
	Discharge without danger		N/A
	Cannot be obstructed		N/A
13.2.2	Batteries and battery charging		P
	If explosion or fire HAZARD could occur:		—
	Protection incorporated in the equipment; or		P
	Instructions specify batteries with built-in protection		N/A
	In case of wrong type of battery used:		—
	No HAZARD; or		P
	Warning by marking and within instructions		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	Equipment with means to charge rechargeable batteries:	No charge function	—
	Warning against the charging of non-rechargeable batteries; and		N/A
	Type of rechargeable battery indicated; or		N/A
	Symbol 14 used		N/A
	Battery compartment design		P
	Single component failure		P
	Polarity reversal test		P
13.2.3	Implosion of cathode ray tubes		N/A
	If maximum face dimensions > 160 mm.....:		—
	Intrinsically protected and correctly mounted; or		N/A
	ENCLOSURE provides protection:		N/A
	If non-intrinsically protected:		—
	Screen not removable without TOOL		N/A
	If glass screen, not in contact with surface of tube		N/A
14	**COMPONENTS AND SUBASSEMBLIES**		P
14.1	**General**		P
	Where safety is involved, components and subassemblies meet relevant requirements		P
14.2	**Motors**	No motors	N/A
14.2.1	Motor temperatures		N/A
	Does not present a HAZARD when stopped or prevented from starting; or		N/A
	Protected by over-temperature or thermal protection device conform with 14.3		N/A
14.2.2	Series excitation motors		N/A
	Connected direct to device, if overspeeding causes a HAZARD		N/A
14.3	**Overtemperature protection devices**	No such devices	N/A
	Devices operating in a SINGLE FAULT CONDITION		N/A
	a) Reliable function is ensured		N/A
	b) RATED to interrupt maximum current and voltage		N/A
	c) Does not operate in NORMAL USE		N/A
	If self-resetting device used to prevent a HAZARD, protected part requires intervention before restarting		N/A
14.4	**Fuse holders**		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	No access to HAZARDOUS LIVE parts	No such fuse holders	N/A
14.5	**MAINS voltage selecting devices**	No such devices	N/A
	Accidental change not possible		N/A
14.6	**MAINS transformers tested outside equipment**	No MAINS transformers	N/A
14.7	**Printed wiring boards**		P
	Data shows conformity with V-1 of IEC 60695-11-10 or better; or		P
	Test shows conformity with V-1 of IEC 60695-11-10 or better		N/A
	Not applicable for printed wiring boards with limited-energy circuits (9.4)		N/A
14.8	**Not used**		—
14.101	*Probe assemblies and accessories*		P
	Probe assemblies and accessories within the scope of IEC 61010-031, and current sensors within the scope of IEC61010-2-032.		P
	Probe assemblies and accessories meet IEC 61010-031 :		P
15	**PROTECTION BY INTERLOCKS**		N/A
15.1	**General**		N/A
	Interlocks are designed to remove a HAZARD before OPERATOR exposed		N/A
15.2	**Prevention of reactivation**		N/A
15.3	**Reliability**		N/A
	Single fault unlikely to occur; or		N/A
	Cannot cause a HAZARD		N/A
16	**HAZARDS RESULTING FROM APPLICATION**		P
16.1	**REASONABLY FORESEEABLE MISUSE**		P
	No HAZARDS arising from settings not intended and not described in the instructions		P
	Other cases of REASONABLY FORESEEABLE MISUSE addressed by RISK assessment		N/A
16.2	**Ergonomic aspects**		N/A
	Factors giving rise to a HAZARD the RISK assessment is reflecting those aspects:		—
	a) limitation of body dimensions		N/A
	b) displays and indicators		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	c) accessibility and conventions of controls		N/A
	d) arrangement of TERMINALS		N/A
17	**RISK ASSESSMENT**		N/A
	RISK assessment conducted, if HAZARD might arise and not covered by Clauses 6 to 16	All risk covered by clauses 6 to 16	N/A
	TOLERABLE RISK achieved by iterative documented process covering the following:		—
	a) RISK analysis		N/A
	Identifies HAZARDS and estimates RISK		N/A
	b) RISK evaluation		N/A
	Plan to judge acceptability of resulting RISK level based on the estimated severity and likelihood of a RISK		N/A
	c) RISK reduction		N/A
	Initial RISK reduced by counter measures;		N/A
	Repeated RISK evaluation without new RISKS introduced		N/A
	RISKS remaining after RISK assessment addressed in instructions to RESPONSIBLE BODY:		—
	Information contained how to mitigate these RISKS		N/A
	Following principles in methods of RISK reduction applied by manufacturer in given order:		—
	1) RISKS eliminated or reduced as far as possible		N/A
	2) Protective measures taken for RISKS that cannot be eliminated		N/A
	3) User information about residual RISK due to any defect of the protective measures		N/A
	Indication of particular training is required		N/A
	Specification of the need for personal protective equipment		N/A
	Conformity checked by evaluation of the RISK assessment documentation		N/A
101	***Measuring circuits***		P
101.1	***General***		P
	The hand-held multimeter provides protection against HAZARDS resulting from NORMAL USE and REASONABLY FORESEEABLE MISUSE as specified below.....:		—

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	a) .. Current measuring circuit does not interrupt the circuit being measured during range changing, or during the use of current transformers without internal protection (see 101.2)	No such current measuring circuit	N/A
	b) .. Electrical quantity for any terminal does not cause a hazard when it is applied to compatible terminal in any possible manner (see 101.3)		P
	c) .. Any interconnection does not cause a hazard even if the documentation or markings prohibit the interconnection (see 6.6)		P
	d) .. Other hazards results from reasonably foreseeable misuse are addressed by risk assessment (see Clauses 16 and 17)		N/A
	e) .. A temporary overvoltage or a transient overvoltage applied on the measuring circuit terminals does not cause a hazard		P
101.2	Current measuring circuits	This product will connect a current sensor that complied with EN IEC 61010-2-032, when measuring current.	N/A
	When range changing takes place, there is no interruption which could cause a HAZARD.....:		N/A
	Current transformers without internal protection are adequately protected from interruption .....:		N/A
101.3	***Protection against mismatches of inputs and ranges***		P
101.3.1	No HAZARD arises when the highest RATED voltage or current is applied to any compatible TERMINAL		P
	TERMINALS that are not similar types or TERMINALS that can be accessed only by use of a tool do not need to meet 101.3.1	No such terminal	N/A
	The hand-held multimeter provides one of the following protections against HAZARDS..... :		—
	a) Use of certified overcurrent protection device (see 101.3.2), or;		N/A
	b) Use of uncertified current limitation device, impedance, or combination of both (see 101.3.3)		P
101.3.2	Protection by a certified overcurrent protection device.....:		N/A
	Overcurrent protection device certified by an independent laboratory and all of the following requirements are met		N/A
	a) RATED at least as high as the highest a.c. and d.c. voltages of any measuring TERMINAL		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	b) The RATED time-current characteristic (speed) is appropriate to prevent HAZARD from any possible combination of input voltages, TERMINALS, and range selection		N/A
	c) RATED breaking capacities exceed the possible a.c. and d.c. short-circuit currents		N/A
	Additionally, spacings surrounding the overcurrent protection device are sufficiently large to prevent arcing		N/A
101.3.3	Protection by uncertified current limitation devices or by impedances.....:		P
	Devices are capable of safely withstanding, dissipating, or interrupting the energy in the case of REASONABLY FORESEEABLE MISUSE		P
	An impedance used for limitation of current meets one or more of the following..... :		P
	a) Single component is constructed, selected, and tested for protection against relevant HAZARDS		N/A
	1) the component is RATED for the max voltage that may be present in NORMAL CONDITION or during the REASONABLY FORESEEABLE MISUSE event;		N/A
	2) if a resistor, it is RATED for twice the power dissipation that may result in NORMAL CONDITION or from the REASONABLY FORESEEABLE MISUSE event;		N/A
	3) meets the applicable CLEARANCE and CREEPAGE requirements of Annex K for BASIC INSULATION		N/A
	b) A combination of components		P
	1) withstands the max. voltage that may be present in NORMAL CONDITION or during the REASONABLY FORESEEABLE MISUSE event;		P
	2) is able to dissipate the power that may result in NORMAL CONDITION or from the REASONABLY FORESEEABLE MISUSE event;		P
	3) meets the applicable CLEARANCE and CREEPAGE requirements of Annex K for BASIC INSULATION		P
101.3.4	*Test leads for the tests of 101.3.2 and 101.3.3*		P
	Test of 101.3.2 and 101.3.3 were performed with all tests leads which were specified or supplied by manufacturer with the current sensor or were performed with tests leads that meet the following specifications:		—
	a)length = 1,0 m;		P
	b)cross section of the conductor = 1.5 mm², stranded copper wire;		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	c) connector compatible with the measuring circuit TERMINALS;		P
	d)connection to the test voltage source via bare wire into suitable screw TERMINALS or		P
	Thimble connectors (twist-on wire connectors) or		P
	Equivalent means of providing a low impedance connection;		P
	e)arranged as straight as possible		P
	For the purposes of calculation of possible fault current in 101.3.2 and 101.3.3, the value of 30 mΩ can be used for these test leads.		—
	Test leads supplied by manufacturer used without modification		N/A
101.4	***Protection against MAINS overvoltages***		P
	To ensure protection against arc flash or fire, measuring circuits RATED for measuring MAINS voltages have minimum CLEARANCES and CREEPAGE DISTANCES equivalent to BASIC INSULATION between MAINS-connected conductive parts of opposite polarity.		P
	Measuring circuit TERMINALS of voltage measuring circuit rated for:		—
	MEASUREMENT CATEGORIES.....:	CAT III, CAT IV	—
	Applicable TRANSIENT OVERVOLTAGES.....:		P
	Impulse voltage of Table 104 applied.....:	8000V	P
	Resistance added to adjust the impedance depending of CAT III or IV .....:		—
	Applied mains voltage of source.....:	400Vac	—
	Test impulse applied in combination with the MAINS voltage under NORMAL use		P
	Wave shape of each impulse observed and no influence of overvoltage limiting device occurred		P
	Circuit breaker of the MAINS installation has being triggered	Not triggered	N/A
	No HAZARD arose in the event that the component ruptured or overheated		P
102	*Indicating devices*		P
102.1	*General*		P
102.2	*Battery Level*		P
	A voltage value displayed by the hand-held multimeters is not affected by the expected variation of its battery voltage ..... :		P
102.3	*Over-range*		P

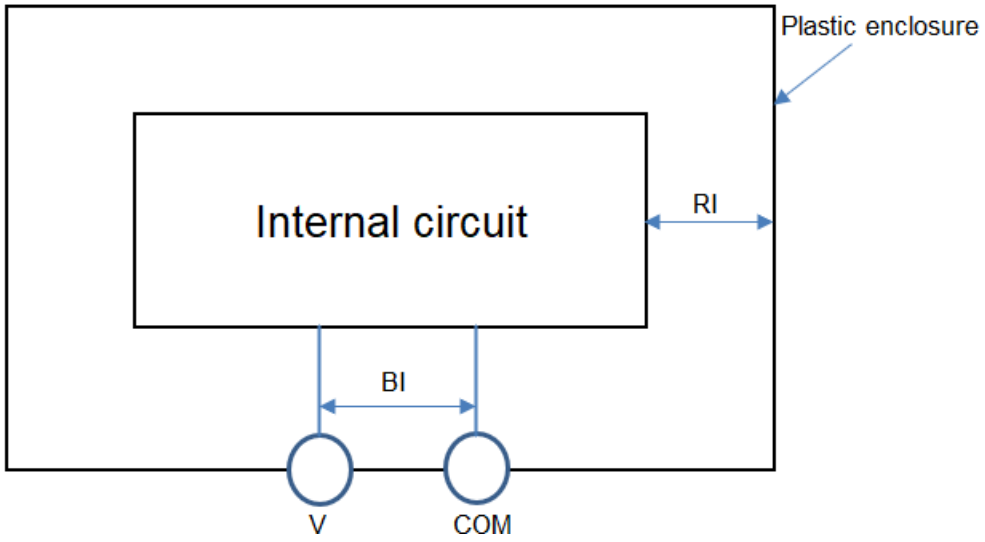
IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	The display gives unambiguous indication of over-range value .....:		P
102.4	*Permanent overvoltage*		P
	The hand-held multimeter is able to withstand permanent overvoltages and continue to give an unambiguous indication of any HAZARD LIVE voltages up to the max. RATED voltage..... :		P
	The value of overvoltage applied to the TERMINALS is based on the TERMINALS' RATED voltage (V).....:	1500 Vac, 1700 Vdc	P
	a) RATED voltage up to 1 000V a.c. r.m.s. the overvoltage value is RATED voltage multiplied by 1.9 without exceeding 1 100V a.c. r. m. s.;		N/A
	b) RATED voltage above 1 000 Va.c. r. m. s., the overvoltage value is the RATED voltage multiplied by 1.1;	Max voltage of terminal is 1500 Vac, applied 1500 x 1.1 = 1650 Vac between terminals, did not result hazardous situation	P
	c) RATED voltage d.c., the overvoltage value is the RATED voltage multiplied by 1.1.	Max voltage of terminal is 1700 Vdc, applied 1700 x 1.1 = 1870 Vdc between terminals, did not result hazardous situation	P
ANNEX F	**ROUTINE TESTS**		N/A
	Manufacturer´s declaration		N/A
Annex K.3	**INSULATION FOR CIRCUITS NOT ADDRESSED IN 6.7, K.1, K.2 OR K.101**		P
K.101	Insulation requirements for measuring circuits of MEASUREMENT CATEGORIES III and IV		P
K.101.1	General		P
K.101.2	CLEARANCES		P
	For hand-held multimeter intended to be powered from the circuit being measured, CLEARANCES for MAINS CIRCUIT are designed according to the requirements of the RATED MEASUREMENT CATEGORY		P
	Additional marking requirements in 5.1.5.2 and 5.1.5.101		P
	CLEARANCES for measuring circuits of MEASUREMENT CATEGORIES II, III, IV meet Table K.101		P
	Hand-held multimeter rated to operate at an altitude greater than 2000 m, correction factor of Table K.1 of 61010-1 applied	Up to 2000m	N/A
	Voltage tests of 6.8.3.1 or 6.8.3.3 of 61010-1		P
K.101.3	CREEPAGE DISTANCES		P
	The requirements of K.2.3 of 61010-1 applied		P
K.101.4	Solid insulation		P
K.101.4.1	General		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
K.101.4.1.1	Solid insulation withstands the electrical and mechanical stresses that may occur in NORMAL USE in all RATED environmental conditions (see 1.4) during the intended life of the hand-held multimeter .....:		P
	The manufacturer should take the expected life of the hand-held multimeter into account when selecting insulating materials.		P
K.101.4.1.2	Test voltage values for testing the long-term stress of solid insulation are calculated .....:		P
K.101.4.1.3	Solid insulation also meets the following requirements as applicable		P
	a) solid insulation used as an ENCLOSURE or PROTECTIVE BARRIER, the requirements of Clause 8		P
	b) moulded and potted parts, the requirements of K.101.4.2	No such insulation	N/A
	c) insulating layers of printed wiring boards, the requirements of K.101.4.3	No such insulation	N/A
	d) thin-film insulations, the requirements of K.101.4.4	No such insulation	N/A
K.101.4.2	Moulded and potted parts		N/A
	Conductors located between same two layers moulded together are separated by at least the applicable minimum distance of Table K.105		N/A
K.101.4.3	Insulating layers of printed wiring boards		N/A
	For BASIC INSULATION, SUPPLEMENTARY INSULATION and REINFORCED INSULATION, conductors located between the same two layers is separated by at least the applicable minimum distance of Table K.105.		N/A
	REINFORCED INSULATION have adequate electric strength; one of the following methods are used:		N/A
	a) thickness at least the applicable value of Table K.105.		N/A
	b) insulation is assembled from at least two separate layers, each RATED for test voltage of Table K.102 to K.103 for BASIC INSULATION		N/A
	c) insulation is assembled from at least two separate layers, where the combination is RATED for test voltage of Table K.102 to K.103 for REINFORCED INSULATION		N/A
K.101.4.4	Thin-film insulation		N/A
	Conductors between same layers are separated by at least the applicable CLEARANCES and CREEPAGE DISTANCE of K.101.2 and K.101.3		N/A
	REINFORCED INSULATION have adequate electric strength; one of the following methods are used:		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement + Test	Result - Remark	Verdict
	a) thickness at least the applicable value of Table K.105		N/A
	b) insulation consists of at least two separate layers, each RATED for test voltage of Table K.102 to Table K.10 for BASIC INSULATION		N/A
	c) insulation consists of at least three separate layers, where the combination of two layers passed adequate voltage tests		N/A
	a.c. Voltage tests of K.101.4.1.1		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement — Test	Result — Remark	Verdict

6.7	**TABLE: Insulation requirements- Block diagram of system**	**Form A.14**	P



Pollution degree .....: 2

Overvoltage category..... : CAT IV 600
CAT III 1000V

Area	Location	Insulation type	WORKING VOLTAGE			Test voltage	Comments (NOTE 3)
		(NOTE 1)	RMS V	Peak V	Frequency kHz	(NOTE 2) V	
A	Internal circuit to accessible parts of LCD	RI	1000	-	-	8540V	
	Internal circuit to accessible parts of button	RI	1000	-	-	8540V	
	Internal circuit to accessible parts of battery cover	RI	1000	-	-	8540V	
	Internal circuit to accessible parts of rear screw	RI	1000	-	-	8540V	
	Internal circuit to accessible parts of top LED	RI	1000	-	-	8540V	
B	"V" terminal and "COM" terminal	BI	600	-	-	5197V	

NOTE 1 – Type of insulation:
BI = BASIC INSULATION
DI = DOUBLE INSULATION
PI = PROTECTIVE IMPEDANCE
RI = Reinforced INSULATION
SI = Supplementary INSULATION
see also Form A.15 for further details

NOTE 2 - Types of voltage
Peak impulse test voltage (pulse)
r.m.s.
d.c.
peak

NOTE 3 - OVERVOLTAGE CATEGORIES or POLLUTION DEGREES which differ should be shown under "Comments"

Supplementary Information:

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement — Test	Result — Remark	Verdict

6.7	**TABLE: Insulation requirements - CLEARANCES and CREEPAGES**		**Form A.15**	P
6.2.2	Examination	6.5.4	Protective impedance	—
6.4.2	ENCLOSURES and protective barriers	6.5.6	Current- or voltage-limiting device	—
6.4.4	Impedance	9.6.1	BASIC INSULATION between opposite polarity	—

Area	Location (See Form A.14)	Insulation type (NOTE 1)	WORKING VOLTAGE (NOTE 2)			CLEARANCE		CREEPAGE DISTANCE		CTI	Verdict	Comments
			RMS [V]	Peak [V]	Frequency [kHz]	Required [mm]	Measured [mm]	Required [mm]	Measured [mm]			
A	Internal circuit to accessible parts of LCD	RI	1000	--	--	15.0	>>20	15.0	>>20	I	P	
	Internal circuit to accessible parts of button	RI	1000	--	--	15.0	16.21	15.0	16.21	I	P	
	Internal circuit to accessible parts of battery cover	RI	1000	--	--	15.0	16.19	15.0	16.19	I	P	
	Internal circuit to accessible parts of rear screw	RI	1000	--	--	15.0	15.24	15.0	15.24	I	P	
	Internal circuit to accessible parts of top LED	RI	1000	--	--	15.0	>>20	15.0	>20	I	P	
B	“V” terminal and “COM” terminal	BI	1000	--	--	8.0	13.96	8.0	13.96	I	P	

NOTE 1 – refer to Form A.14 for type of insulation shown in the insulation diagram NOTE 2 - to be used for definition of required insulation (see Form A.14)

Input supply voltage…….:	1000	V	50	Hz

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement — Test	Result — Remark	Verdict

6.7	**TABLE: Insulation requirements - CLEARANCES and CREEPAGES**		**Form A.15**	P
6.2.2	Examination	6.5.4	Protective impedance	—
6.4.2	ENCLOSURES and protective barriers	6.5.6	Current- or voltage-limiting device	—
6.4.4	Impedance	9.6.1	BASIC INSULATION between opposite polarity	—

Area	Location (See Form A.14)	Insulation type (NOTE 1)	WORKING VOLTAGE (NOTE 2)			CLEARANCE		CREEPAGE DISTANCE		CTI	Verdict	Comments
			RMS [V]	Peak [V]	Frequency [kHz]	Required [mm]	Measured [mm]	Required [mm]	Measured [mm]			

Supplementary information:
Rated voltage 1700 Vdc and 1500 Vac of measurement terminal is applied for floating circuit (not earthed) in PV system. So that the Basic insulation is required between measurement circuit and accessible part of meter when conduct this operation.
With max voltage 1700 V and no transient overvoltage, the calculated clearance for basic insulation is 1.79 mm.
With max voltage 1700 V and material to be group 1, the calculated creepage for basic insulation is 8.5 mm.
Both clearance and creepage distance requirement for 1700 Vdc and 1500 Vac circuit in floating circuit is less than requirement for CAT IV 600 V / CAT III 1000 V circuit.

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement — Test	Result — Remark	Verdict

6.8	**TABLE: Dielectric strength tests**	**Form A.18**	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		P
6.7	Insulation requirements[2] (see Annex K)		P
6.10.2	Fitting of non-detachable MAINS supply cords[1]		N/A
9.2 a) 2)	Eliminating or reducing the sources of ignition within the equipment		N/A
9.4 c)	Limited-energy circuit		N/A
9.6.1	Overcurrent protection basic insulation between MAINS - parts		N/A
	Test site altitude ..... :	0 m	—
	Test voltage correction factor (see table 10):	1.22	—

Location or references from Forms A.1 and A.14	Clause or sub-clause	Humidity	Working voltage	Test voltage	Comments (NOTE)	Verdict
		Yes/No	[r.m.s./d.c.]	[r.m.s./peak/d.c.]		
Internal circuit to accessible parts	4.4.4.1 b)	No	1000	8540 Vr.m.s	Reinforced insulation,1 min	P
	6.4 6.6 6.7	Yes	1000	8540 Vr.m.s	Reinforced insulation, 1 min	P
Between V and COM terminal	4.4.4.1 b)	No	1000	5197 Vr.m.s	Basic insulation 1 min	P
	6.4 6.6 6.7	Yes	1000	5197 Vr.m.s	Basic insulation 1 min	

[1] Record the fault, test or treatment applied before the dielectric strength test. [2] Humidity preconditioning required.
NOTE: Test duration may be recorded.

Supplementary information:

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement — Test	Result — Remark	Verdict

10.	**TABLE: Temperature Measurements** **Form A.26A**	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/A
10.3	Other temperature measurements	P

Operating conditions:	Normal work		
Frequency.....:	-- Hz	Test room ambient temperature (ta)...	19.5 °C
Voltage .....:	9 V	Test duration.....	2 h 12 min

Part / Location	t_m °C	t_c °C	t_{max} °C	Verdict	Comments
PCB	20.0	40.5	130	P	
LCD surface	20.2	40.7	70	P	
Rotary switch	20.2	40.7	70	P	
Plastic enclosure near measuring terminal	20.2	40.7	70	P	
Battery cover	20.4	40.9	70	P	

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:

Corrected to ambient 40℃.

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement — Test	Result — Remark	Verdict

10.	**TABLE: Temperature Measurements** **Form A.26A**	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/A
10.3	Other temperature measurements	P

Operating conditions:	Short battery		
Frequency.....:	-- Hz	Test room ambient temperature (ta)...	21.4 °C
Voltage .....:	9 V	Test duration.....	2 h 54 min

Part / Location	t_m °C	t_c °C	t_{max} °C	Verdict	Comments
PCB	23.9	42.5	130	P	
LCD surface	22.2	40.8	105	P	
Rotary switch	25.2	43.8	105	P	
Plastic enclosure near measuring terminal	22.6	41.2	105	P	
Battery cover	42.5	61.1	105	P	

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:

Corrected to ambient 40℃.

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement — Test	Result — Remark	Verdict

10.2	**TABLE: Temperature of windings** **Form A.26B** **Resistance method Temperature Measurements**	N/A
4.4.2.7	MAINS transformers	N/A
14.2.1	Motor temperatures	N/A

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]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments

NOTE 1- R_{cold} = initial resistance
t_r = temperature rise
t_{max} = maximum permitted temperature
R_{warm} = final resistance
t_c = t_r corrected (t_c= t_r + [40 °C or max RATED ambient])
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:

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement — Test	Result — Remark	Verdict

	TABLE: 1 - List of components and circuits relied on for safety		P

Unique component reference or location	Application/function	Manufacturer / trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Standard	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
Plastic Enclosure	-	LG Chemical Ltd	AF312	85℃, V-0, min.thickness:1.5mm material group II	ANSI/UL 746A, ANSI/UL 94	Test in appliance UL E67171
Alternative	-	CHI MEI CORPORATION	PA-765A(+)	V 85℃, V-0, min.thickness:1.5mm material group II	ANSI/UL 746A, ANSI/UL 94	Test in appliance UL E56070
Alternative	-	SHANGHAI CHANGWEI JINCI ENGINEERING PLASTICS CO LTD	5288F	V-0, 60°C, PC/ABS, Min. thickness: 1.5mm, Material Group I	ANSI/UL 746A, ANSI/UL 94	Test in appliance UL E313427
Alternative	-	SILVER AGE ENGINEERING PLASTICS (DONGGUAN) CO LTD	2540(f1)	V-0, 60°C, PC/ABS, Min. thickness: 1.5mm Material Group II	ANSI/UL 746A, ANSI/UL 94	Test in appliance UL E225348
Transparent Cover	-	CHI MEI CORPORATION	PA-758(+)	HB,60℃, min.thickness:1.5mm material Group I	ANSI/UL 746A, ANSI/UL 94	Test in appliance UL E56070
PCB	-	Interchangeable	Interchangeable	130℃, V-0	UL 94	UL, VDE
Varistor	-	Guizhou Kaili Economic Zone Zhonghao Electronics Co.,LTD.	WLR-07D-911K	Varistor Voltage 819～1001V Withstand surge Current 1750A	ANSI/UL 1449	UL E488935

IEC/EN 61010-1 & IEC/EN IEC 61010-2-033			
Clause	Requirement — Test	Result — Remark	Verdict

	TABLE: 1 - List of components and circuits relied on for safety						P
Unique component reference or location	Application/function	Manufacturer / trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Standard	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)	
Alternative	-	BESTBRIGHT ELECTRONICS CO LTD	07D911K	Varistor Voltage 819～1001V Withstand surge Current 1750A	ANSI/UL 1449	UL E315524	
PTC	-	ShenZhen Ampron Sensitive Components CO.,Ltd	MZ11-07M112M550	1.1KΩ±20% Work Voltage 550V	UL 1434	R50187698	
Heat shrink tube		GUANGZHOU KAIHENG ETERPRISE GROUP	K-2	600V, 125℃, VW-1	-	UL E214175	

NOTE → 1 List all different manufacturers of the above components → 4 asterisk indicates mark assuring agreed level of surveillance
→ 2 May include electrical, mechanical values
→ 3 List licence no or method of acceptance

Appendix 1 – Product photos

Photo 1 - Front view

Photo 2 – Rear view

Appendix 1 – Product photos

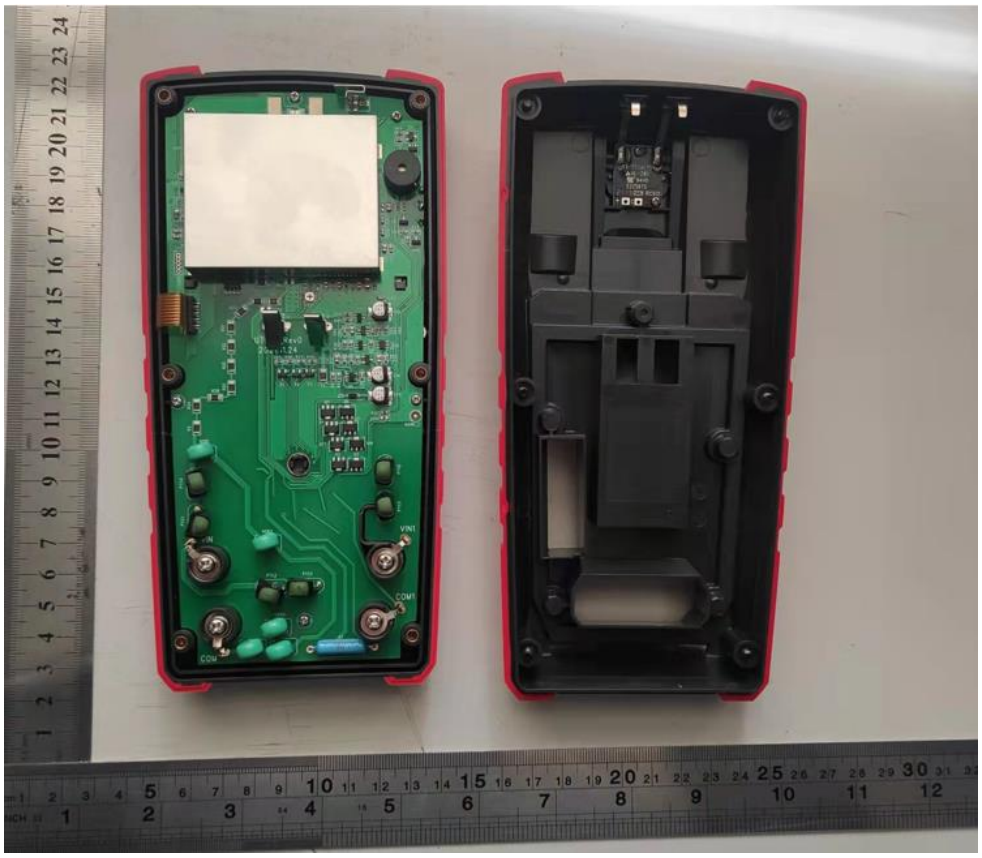


Photo 3 – Internal view

Photo 4 – PCB top view

Appendix 1 – Product photos

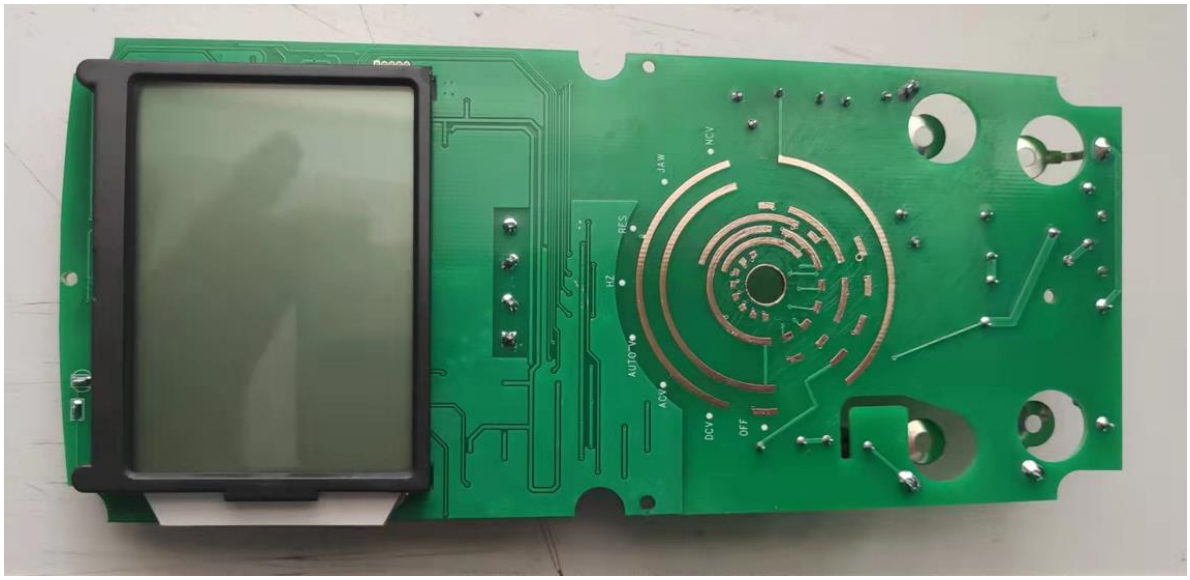


Photo 5 – PCB bottom view

END OF REPORT