

Test Verification of Conformity

On the basis of the tests undertaken, the sample(s) of the below product have been found to comply with the requirements of the referenced specifications at the time the tests were carried out.

Applicant Name & Address : Fluke Corp.
6902 Seaway Blvd, M/S 266D, Everett, WA 98203, U.S.A.

Product(s) Tested : Digital Multimeter

Ratings and principal characteristics : CAT II 600 V, CAT III 300 V
Pollution Degree 2, Class II
Battery Supply: DC 1.5 V, use two pieces of LR44 type non-rechargeable battery

Model(s) : DM73C

Brand name : AMPROBE

Relevant Standard(s)/Specification(s) : EN 61010-1:2010 (Third Edition),
EN 61010-2-033:2012 (First Edition)

NOTE: The equipment covered by this document is subject to mandatory compliance with - the European LVD Directive 2006/95/EC.

Verification Issuing Office Name & Address : Intertek Testing Services Taiwan Ltd.
6F, No. 423, Ruiguang Rd., Neihu District, Taipei 114, Taiwan

Date of Test(s) : January 8, 2013 ~ February 4, 2013

Verification/Report Number(s) : TP12100057-ETS(R1) (TP12100057-ETS+TP12100057-ETS(R1))

NOTE 1: This verification is part of the full test report(s) and should be read in conjunction with it.

NOTE 2: This verification supersedes all previous verifications with the noted Verification/Report number(s) dated before this verification issuance.

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SAMMY WU
DIRECTOR



Date: February 27, 2013



TEST REPORT
IEC 61010-1, and IEC 61010-2-033
Safety requirements for electrical equipment for measurement,
control, and laboratory use. Part 1: General requirements, and
Part 2-033: Particular requirements for HAND-HELD MULTIMETERS

Report Number.: TP12100057-ETS(R1)

Date of issue: February 27, 2013

Total number of pages 4 pages

Applicant's name: Fluke Corp.

Address: 6902 Seaway Blvd, M/S 266D, Everett, WA 98203, U.S.A.

Test specification:

Standard: EN 61010-1:2010 (Third Edition),
 EN 61010-2-033:2012 (First Edition)

Test procedure.....: LVD procedure

Non-standard test method.....: N/A

Test Report Form No......: IEC61010_1H

Test Report Form(s) Originator.....: VDE Testing and Certification Institute

Master TRF: 2011-11

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

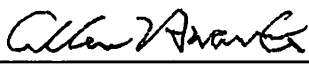
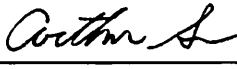
Test item description: Digital Multimeter

Trade Mark: AMPROBE













Manufacturer.....: Chung Instrument Electronics Industrial Co., Ltd.
 44, Tung Rong St., Shu Lin, Taipei Hsien, Taiwan, R.O.C.

Model/Type reference.....: DM73C

Ratings: CAT II 600 V, CAT III 300 V
 Pollution Degree 2, Class II
 Battery Supply: DC 1.5 V, use two pieces of LR44 type non-rechargeable battery

Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	Intertek Testing Services Taiwan Ltd.
Testing location/ address		6F, No. 423, Ruiguang Rd., Neihu District, Taipei 114, Taiwan
<input type="checkbox"/>	Associated CB Laboratory:	
Testing location/ address		
	Tested by (name + signature).....:	Allen Huang 
	Approved by (name + signature)....:	Arthur Sun 
<input type="checkbox"/>	Testing procedure: TMP	
Testing location/ address		
	Tested by (name + signature).....:	
	Approved by (name + signature)....:	
<input type="checkbox"/>	Testing procedure: WMT	
Testing location/ address		
	Tested by (name + signature).....:	
	Witnessed by (name + signature) ..:	
	Approved by (name + signature)....:	
<input type="checkbox"/>	Testing procedure: SMT	
Testing location/ address		
	Tested by (name + signature).....:	
	Approved by (name + signature)....:	
	Supervised by (name + signature) :	
<input type="checkbox"/>	Testing procedure: RMT	
Testing location/ address		
	Tested by (name + signature).....:	
	Approved by (name + signature)....:	
	Supervised by (name + signature) :	

List of Attachments (including a total number of pages in each attachment - Table 1):		
Document No.	Documents included / attached to this report (description)	Pages
1	Test Report	4
2	Test Data	--
3	Photo	--
Summary of testing:		
Test Report History: This report may consist of more than one report and is valid only with additional or previous issued reports:		
Ref. No.	Item	
Tests performed (name of test and test clause):		Testing location:
Summary of compliance with National Differences: NA		

<p>Copy of marking plate</p> <p>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.</p> <p>(Representative)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>AMPROBE</td> <td></td> <td></td> </tr> <tr> <td>DM73C</td> <td></td> <td></td> </tr> <tr> <td>CAT II 600 V</td> <td></td> <td></td> </tr> <tr> <td>CAT III 300 V</td> <td></td> <td></td> </tr> </table>	AMPROBE			DM73C			CAT II 600 V			CAT III 300 V		
AMPROBE												
DM73C												
CAT II 600 V												
CAT III 300 V												
<p>General product information:</p> <p>Modification (R1) to test report No. TP12100057-ETS</p> <p>The original Test Report Ref. No. TP12100057-ETS, dated Feb. 18, 2013, was modified on Feb. 27 2013 to include the following changes and/or additions.</p> <p>1. Correct typo of copy of marking plate.</p>												

Test item particulars:	
Type of item	Measurement
Description of equipment function.....	The submitted item is the digital meter for measurement.
Connection to MAINS supply.....	None
Overvoltage category.....	Max. CAT III 300 V
POLLUTION DEGREE.....	Pollution degree 2
Means of protection	Class II (isolated)
Environmental conditions	Normal
For use in wet locations	No
Equipment mobility	Hand-held
Operating conditions.....	Continuous
Overall size of equipment (W x D x H).....	198 mm x 28 mm x 35.5 mm
Mass of equipment (kg).....	95 g
Marked degree of protection to IEC 60529.....	Ordinary (IPX0)
Possible test case verdicts:	
- Test case does not apply to the test object.....	N/A
- Test object does meet the requirement.....	P (Pass)
- Test object does not meet the requirement.....	F (Fail)
Testing:	
Date of receipt of test item.....	January 8, 2013
Date (s) of performance of tests.....	January 8, 2013 ~ February 4, 2013
General remarks:	
<p>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 Form A.xx are optional if used as record.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	
Manufacturer's Declaration per sub-clause 6.2.5 of IEC60335-1:	
<p>The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable</p>	
When differences exist; they shall be identified in the General product information section.	

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
4.4	Testing in SINGLE FAULT CONDITIONS		P
4.4.1	Fault tests	(see Form A.1)	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	(see Form A.1)	—
4.4.2.2	PROTECTIVE IMPEDANCE		N/A
4.4.2.3	PROTECTIVE CONDUCTOR	(see Form A.6)	N/A
4.4.2.4	Equipment or parts for short-term or intermittent operation	Not this type apparatus	N/A
4.4.2.5	Motors	No such motors	N/A
	– 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 capacitor	N/A
4.4.2.7	MAINS transformers	No such transformers	N/A
4.4.2.7.2	Short circuit	(see Forms A.39)	N/A
4.4.2.7.3	Overload	(see Forms A.40)	N/A
4.4.2.8	Outputs	No such outputs	N/A
4.4.2.9	Equipment for more than one supply	Battery operation	N/A
4.4.2.10	Cooling	No such cooling system	N/A
	– 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 such heating devices	N/A
	– timer overridden		N/A
	– temperature controller overridden		N/A
4.4.2.12	Insulation between circuits and parts		P
4.4.2.13	Interlocks	No such interlocks	N/A
4.4.2.14	Voltage selectors	No such voltage selectors	N/A
(4.4.2.101)	Addition: For measuring circuit TERMINALS RATED for MAINS CIRCUITS voltage measurements (IEC 61010-2-033:2012)		—
	a) up to 600 V a.c. r.m.s., the voltage applied to the TERMINALS is the RATED voltage multiplied by 1,90 but not to exceed 920 V a.c. r.m.s.; (IEC 61010-2-033:2012)	570 Vac	P
	b) above 600 V a.c. r.m.s. and up to 1 000 V a.c. r.m.s., the voltage applied to the TERMINALS is 1100 V a.c. r.m.s.; (IEC 61010-2-033:2012)		N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	c) above 1 000 V a.c. r.m.s., the voltage applied to the TERMINALS is the RATED voltage multiplied by 1,1; (IEC 61010-2-033:2012)		N/A
	d) of d.c. voltage, the d.c. voltage applied to the TERMINALS is the RATED voltage multiplied by 1,1. (IEC 61010-2-033:2012)		N/A
4.4.3	Duration of tests	(see Form A.1)	—
4.4.4	Conformity after application of fault conditions	(see Forms A.1; A.6, A.18)	P

5	MARKING AND DOCUMENTATION		P
5.1.1	Required equipment markings		P
	- Visible from the exterior; or		P
	- Visible after removing cover or opening door		N/A
	- Visible after removal from a rack or panel		N/A
	Not put on parts which can be removed by an operator		P
	Letter symbols (IEC 60027) used		P
	Graphic symbols (IEC 61010-1: Table 1) used	Symbol 1, 2, 5, 11, 12, 14	P
5.1.2	Identification		—
	Equipment is identified by:		P
	a) Manufacturer's or supplier's name or trademark	AMPROBE	P
	b) Model number, name or other means	DM73C	P
	Manufacturing location identified		N/A
5.1.3	MAINS supply	Battery operation	N/A
	Equipment is marked as follows:		N/A
	a) Nature of supply:		—
	1) a.c. RATED MAINS frequency or range of frequencies		N/A
	2) d.c. with symbol 1		N/A
	b) RATED supply voltage(s) or range		N/A
	c) Max. RATED power (W or VA) or input current.... :		N/A
	The marked value not less than 90 % of the maximum value	(see Form A.2)	N/A
	If more than one voltage range:		—
	Separate values marked; or		N/A
	Values differ by less than 20 %	(see Form A.2)	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

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	Changing the setting changes the indication		N/A
	e) Accessory MAINS socket-outlets accepting standard MAINS plugs are marked:		N/A
	With the voltage if it is different from the MAINS supply voltage		N/A
	For use only with specific equipment		N/A
	If not marked for specific equipment it is marked with:		N/A
	The maximum rated current or power; or		N/A
	Symbol 14 with full details in the documentation		N/A
5.1.4	Fuses	No such device	N/A
	Operator replaceable fuse marking (see also 5.4.5)		N/A
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
(5.1.5.1)	Replacement: If necessary for safety, an indication shall be given of the purpose of TERMINALS, connectors, controls, and indicators. Where there is insufficient space, symbol 14 from Table 1 may be used. (IEC 61010-2-033:2012)		P
	Push-buttons and actuators of emergency stop devices and indicators:	No such device	—
	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):		N/A
	to safety of persons; or		N/A
	safety of the environment		N/A
5.1.5.2	TERMINALS	Battery operation	N/A
	MAINS supply TERMINAL identified		N/A
	Other TERMINAL marking:		N/A
	a) FUNCTIONAL EARTH TERMINALS (symbol 5 used)		N/A
	b) PROTECTIVE CONDUCTOR TERMINALS:		N/A
	Symbol 6 is placed close to or on the TERMINAL; or		N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	Part of appliance inlet		N/A
	c) TERMINALS of control circuits (symbol 7 used)		N/A
	d) HAZARDOUS LIVE TERMINALS supplied from the interior		N/A
	Standard MAINS socket outlet; or		N/A
	RATINGS marked; or		N/A
	Symbol 14 used		N/A
(5.1.5.2)	Replacement: d) TERMINALS supplied from the interior of the equipment or from other TERMINALS and which could be HAZARDOUS LIVE, (IEC 61010-2-033:2012)	Battery operation	N/A
	RATINGS marked; or (IEC 61010-2-033:2012)		N/A
	Symbol 12 of Table 1 used (IEC 61010-2-033:2012)		N/A
(5.1.5.101)	Measuring circuit TERMINALS shall be marked with the value of the RATED voltage to earth. (IEC 61010-2-033:2012)		P
	Measuring circuit TERMINALS that are intended to be used together shall be marked with the value of the RATED voltage or the RATED current. (IEC 61010-2-033:2012)	Rated voltage: 600 V max.	P
	Measuring circuit TERMINALS RATED for MAINS CIRCUITS voltage measurements shall be additionally marked "CAT III" or "CAT IV" as applicable. (IEC 61010-2-033:2012)	CAT III	P
	Measuring circuit TERMINALS that do not have a RATING for connection to voltages above the levels of 6.3.1, may be marked with alternative markings. (IEC 61010-2-033:2012)		N/A
	Measuring circuit TERMINALS which are dedicated only for connection to specific TERMINALS of other equipment need not be marked, (IEC 61010-2-033:2012)	Not this type apparatus	N/A
	TERMINALS markings shall be visible when the equipment is ready for NORMAL USE (IEC 61010-2-033:2012)		P
5.1.6	Switches and circuit breakers	No such devices	N/A
	If disconnecting device, off position clearly marked		N/A
	If push-button used as power supply switch:		N/A
	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

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	Protected throughout (symbol 11 used)	<input checked="" type="checkbox"/>	P
	Only partially protected (symbol 11 not used)		N/A
5.1.8	Field-wiring TERMINAL boxes	No such devices	N/A
	If TERMINAL or ENCLOSURE exceeds 60 °C:	(see Form A.26A)	N/A
	Cable temperature RATING marked		N/A
	Marking visible before and during connection or beside TERMINAL		N/A
5.2	Warning markings		N/A
	Visible when ready for NORMAL USE		N/A
	Are near or on applicable parts		N/A
	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		N/A
	b) symbols and text moulded, stamped or engraved in material min. 2,0 mm high and		N/A
	0,5 mm depth or raised if not contrasting in colour		N/A
	If necessary marked with symbol 14		N/A
	Statement to isolate or disconnect if access by using a tool to HAZARDOUS LIVE parts is permitted		N/A
(5.2)	Replacement: Warning markings specified in 5.1.5.2 d), 6.1.2 b), 6.6.2, 7.3.2 b) 3), 7.4, 10.1, and 13.2.2 shall meet the following requirements. (IEC 61010-2-033:2012)		—
	Visible when ready for NORMAL USE (IEC 61010-2-033:2012)		P
	Are near or on applicable parts (IEC 61010-2-033:2012)		P
	The size of warning markings shall be as follows. (IEC 61010-2-033:2012)		—
	a) symbols min 2,75 mm and text 1,5 mm high and contrasting in colour with background (IEC 61010-2-033:2012)		P
	b) symbols and text moulded, stamped or engraved in material min. 2,0 mm high and (IEC 61010-2-033:2012)		N/A
	0,5 mm depth or raised if not contrasting in colour (IEC 61010-2-033:2012)		N/A
	If necessary marked with symbol 14 (IEC 61010-2-033:2012)		P
	Statement to isolate or disconnect if access by using a tool to HAZARDOUS LIVE parts is permitted (IEC 61010-2-033:2012)		P
5.3	Durability of markings		P

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	The required markings remain clear and legible in NORMAL USE	(see Form A.3)	P
5.4	Documentation		P
5.4.1	General		P
	Equipment is accompanied by documentation for safety purposes for OPERATOR or RESPONSIBLE BODY		P
	Safety documentation for service personnel authorized by the manufacturer		P
(5.4.1)	Replacement: The following documentation necessary for safety purposes, as needed by the OPERATOR or the RESPONSIBLE BODY, shall be provided with the equipment, in an accepted language of the country where the product is intended to be placed on the market. (IEC 61010-2-033:2012)		P
	Safety documentation for service personnel authorized by the manufacturer shall be made available to those personnel, in a language selected by the manufacturer. (IEC 61010-2-033:2012)		P
	Documentation necessary for safe operation is provided in printed media or		P
	in electronic media if available at any time		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	Test lead: TL73B	P
	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		P
	h) instructions for lifting and carrying	Portable apparatus	N/A
	Warning statements and a clear explanation of warning symbols:		—
	Provided in the documentation; or	Statements in documentation	P
	Information is marked on the equipment		N/A
	aa) probe assemblies to be used for MAINS measurements shall be RATED for MEASUREMENT CATEGORY III or IV and shall have a voltage RATING of at least the voltage. (IEC 61010-2-033:2012)	CAT III 300 V	P

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	bb) If the METER has multiple MEASUREMENT CATEGORY RATINGS for the same measuring circuit, the documentation shall clearly identify the MEASUREMENT CATEGORIES where the equipment may be used and where it must not be used. (IEC 61010-2-033:2012)	CAT III 300 V, CAT II 600 V	P
5.4.2	Equipment ratings		P
	Documentation includes:		—
	a) Supply voltage or voltage range	Battery operation	N/A
	Frequency or frequency range.....		N/A
	Power or current rating		N/A
	b) Description of all input and output connections in accordance to 6.6.1 a)		N/A
	c) RATING of insulation of external circuits in accordance to 6.6.1 b)		N/A
	d) Statement of the range of environmental conditions (see 1.4)	Extended environmental conditions, 0~40°C, < 80% relative humidity, 2000 m	P
	e) Degree of protection (IEC 60529)		N/A
	f) if impact rating less than 5 J:		N/A
	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
5.4.3	Equipment installation	Not this type	N/A
	Documentation includes instructions for:		N/A
	a) assembly, location and mounting requirements		N/A
	b) protective earthing		N/A
	c) connections to supply		N/A
	d) PERMANENTLY CONNECTED EQUIPMENT:		N/A
	1) Supply wiring requirements		N/A
	2) If external switch or circuit-breaker, requirements and location recommendation		N/A
	e) ventilation requirements		N/A
	f) special services (e. g. air, cooling liquid)		N/A
	g) instructions relating to sound level		N/A
5.4.4	Equipment operation		P
	Instructions for use include:		P
	a) identification and description of operating controls		P
	b) positioning for disconnection		N/A
	c) instructions for interconnection	Test Lead	P
	d) specification of intermittent operation limits	Not this type	N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	e) explanation of symbols used		P
	f) replacement of consumable materials	Battery Replacement	P
	g) cleaning and decontamination		P
	h) listing of any poisonous or injurious gases and quantities	No such gases	N/A
	i) RISK reduction procedures relating to flammable liquids (see 9.5)	No such liquids	N/A
	j) RISK reduction procedures relating burn from surfaces permitted to exceed limits of 10.1	No such surfaces	N/A
	Additional precautions for IEC 60950 conforming equipment in regard to moistures and liquids	Not conforming to IEC 60950	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:		P
	Instruction against the use of detachable MAINS supply cord with inadequate rating	Not provided with mains supply cord	N/A
	Specific battery type of user replaceable batteries	LR44, SR44 or S76	P
	Any manufacturer specified parts		N/A
	Rating and characteristics of fuses		N/A
	Instructions include following subjects permitting safe servicing and continued safety:		N/A
	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	Not this apparatus	N/A
	Aspects described in documentation		N/A

6	PROTECTION AGAINST ELECTRIC SHOCK		P
6.1	General	(see Form A.14 and A.15)	P
6.1.1	Requirements		—
	Protection against electric shock maintained in NORMAL CONDITION and SINGLE FAULT CONDITION		P
	ACCESSIBLE parts not HAZARDOUS LIVE		P

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	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		P
	Following HAZARDOUS LIVE parts may be ACCESSIBLE to an OPERATOR:		P
	a) parts of lamps and lamp sockets after lamp removal	No such lamps	N/A
	b) parts to be replaced by OPERATOR only by the use of tool and warning marking	Battery	P
	Those parts not HAZARDOUS LIVE 10 s after interruption of supply	(see Forms A.6)	N/A
	Capacitance test if charge is received from internal capacitor	(see Forms A.6 and A.7)	N/A
6.2	Determination of ACCESSIBLE parts	(see Form A.5)	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		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 such 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 openings	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	(see Form A.5)	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/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		N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	for WET LOCATIONS measuring circuit A.4 used		N/A
	70 mA r.m.s. when measured with circuit A.3 for higher frequencies		N/A
	or		N/A
	c) Levels of capacitive charge or energy less:		N/A
	1) 45 μ C 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	(see Form A.6)	N/A
	a) Voltage limits less than 55 V r.m.s. and 78 V peak or 140 V d.c.		N/A
	for WET LOCATIONS voltage limits less than 33 V r.m.s. and 46,7 V peak or 70 V d.c.		N/A
	Voltages are not HAZARDOUS LIVE the levels of:		—
	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		N/A
	for WET LOCATIONS measuring circuit A.4 used		N/A
	500 mA r.m.s. when measured with circuit A.3 for higher frequencies		N/A
	or		N/A
	c) Levels of capacitive charge or energy less line B of Figure 3		N/A
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)		N/A
	c) Impedance (see 6.4.4)		N/A
6.4.2	ENCLOSURES or PROTECTIVE BARRIERS	(see Form A.15)	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.15)	N/A
	- meet CLEARANCE, CREEPAGE DISTANCE and solid insulation requirements of 6.7		N/A
6.4.4	Impedance	(see Form A.15)	N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	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.6)	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	(see Form A.15)	N/A
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:		N/A
	a) PROTECTIVE BONDING (see 6.5.2)		N/A
	b) SUPPLEMENTARY INSULATION (see 6.5.3)		N/A
	c) automatic disconnection of the supply (see 6.5.5)		N/A
	d) current- or voltage-limiting device (see 6.5.6)		N/A
	Alternatively one of the single means of protection is used:		N/A
	e) REINFORCED INSULATION (see 6.5.3)		N/A
	f) PROTECTIVE IMPEDANCE (see 6.5.4)		N/A
(6.5.1)	Replacement: ACCESSIBLE parts are prevented from becoming HAZARDOUS live by the primary means of protection and supplemented by one of: (IEC 61010-2-033:2012)		P
	a) SUPPLEMENTARY INSULATION (see 6.5.3) (IEC 61010-2-033:2012)		N/A
	b) current- or voltage-limiting device (see 6.5.6) (IEC 61010-2-033:2012)		N/A
	c) REINFORCED INSULATION (see 6.5.3) (IEC 61010-2-033:2012)		P
	d) PROTECTIVE IMPEDANCE (see 6.5.4) (IEC 61010-2-033:2012)		N/A
6.5.2	PROTECTIVE BONDING	(see Forms A.7, A.8, A.9, A.10 or A.11)	N/A
(6.5.2)	Not used (IEC 61010-2-033:2012)		N/A
6.5.2.1	ACCESSIBLE conductive parts, may become HAZARDOUS LIVE in SINGLE FAULT CONDITION:		N/A
	Bonded to the PROTECTIVE CONDUCTOR TERMINAL; or		N/A
	Separated by conductive screen or barrier bonded to PROTECTIVE CONDUCTOR TERMINAL		N/A
6.5.2.2	Integrity of PROTECTIVE BONDING		N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	a) PROTECTIVE BONDING consists of directly connected structural parts or discrete conductors or both; and withstands thermal and dynamic stresses		N/A
	b) Soldered connections:		N/A
	Independently secured against loosening		N/A
	Not used for other purposes		N/A
	c) Screw connections are secured		N/A
	d) PROTECTIVE BONDING not interrupted; or		N/A
	exempted as removable part carries MAINS SUPPLY input connection		N/A
	e) Any movable PROTECTIVE BONDING connection specifically designed, and meets 6.5.2.4		N/A
	f) No external metal braid of cables used (not regarded as PROTECTIVE BONDING)		N/A
	g) IF MAINS SUPPLY passes through:		N/A
	Means provided for passing protective conductor;		N/A
	Impedance meets 6.5.2.4		N/A
	h) Protective conductors bare or insulated, if insulated, green/yellow		N/A
	Exceptions:		N/A
	1) earthing braids;		N/A
	2) internal protective conductors etc.;		N/A
	Green/yellow not used for other purposes		N/A
	TERMINAL suitable for connection of a PROTECTIVE CONDUCTOR, and meets 6.5.2.3		N/A
6.5.2.3	PROTECTIVE CONDUCTOR TERMINAL		N/A
	a) Contact surfaces are metal		N/A
	b) Appliance inlet used		N/A
	c) For rewirable cords and PERMANENTLY CONNECTED EQUIPMENT, PROTECTIVE CONDUCTOR TERMINAL is close to MAINS supply TERMINALS		N/A
	d) If no MAINS supply is required, any PROTECTIVE CONDUCTOR TERMINAL:		N/A
	Is near terminals of circuit for which protective earthing is necessary		N/A
	External if other terminals external		N/A
	e) Equivalent current-carrying capacity to MAINS supply TERMINALS	(see Form A.7)	N/A
	f) If plug-in, makes first and breaks last		N/A
	g) If also used for other bonding purposes, PROTECTIVE CONDUCTOR:		N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	Applied first;		N/A
	Secured independently;		N/A
	Unlikely to be removed by servicing		N/A
	h) PROTECTIVE CONDUCTOR of measuring circuit:		N/A
	1) Current RATING equivalent to measuring circuit TERMINAL;		N/A
	2) PROTECTIVE BONDING:		N/A
	Not interrupted; or		N/A
	i) FUNCTIONAL EARTH TERMINALS allow independent connection		N/A
	j) If a binding screw used for PROTECTIVE CONDUCTOR TERMINAL:		N/A
	Suitable size for bond wire		N/A
	Not smaller than M 4		N/A
	At least 3 turns of screw engaged		N/A
	Passes tightening torque test	(see Form A.8)	N/A
	k) Contact pressure not capable being reduced by deformation of materials		N/A
6.5.2.4	Impedance of PROTECTIVE BONDING of plug-connected equipment	(see Form A.9)	N/A
	Impedance between PROTECTIVE CONDUCTOR TERMINAL and each ACCESSIBLE part where PROTECTIVE BONDING is specified, is:		—
	less than 0,1 Ohm; or		N/A
	less than 0,2 Ohm if equipment is provided with non detachable cord		N/A
6.5.2.5	Bonding impedance of PERMANENTLY CONNECTED EQUIPMENT	(see Form A.10)	N/A
6.5.2.6	Transformer PROTECTIVE BONDING screen	(see Form A.11)	N/A
	Transformer provided with screen for PROTECTIVE BONDING:		N/A
	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/A
	screen bonding with soldered connection (see 6.5.2.2 b) is:		N/A
	- Independently secured against loosening		N/A
	- Not used for other purposes		N/A
6.5.3	SUPPLEMENTARY and REINFORCED INSULATION	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/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	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	(see Form A.15)	N/A
	The PROTECTIVE IMPEDANCE consists of one or more of the following:	(see Table 1 and Form A.12)	—
	a) appropriate single component suitable for safety and reliability for protection, it is:		N/A
	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	Automatic disconnection of the supply		N/A
	a) RATED to disconnect the load within time specified in Figure 2		N/A
	b) RATED for the maximum load conditions of the equipment		N/A
(6.5.5)	Not used (IEC 61010-2-033:2012)		N/A
6.5.6	Current- or voltage-limiting devices	(see Form A.12)	N/A
	Device complies with all of:		N/A
	a) RATED to limit the current or voltage to the level of 6.3.2	(see Form A.6)	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	(see Form A.14, A.15)	N/A
6.6	Connections to external circuits		N/A
6.6.1	Connections do not cause ACCESSIBLE parts of the following to become HAZARDOUS LIVE in NORMAL CONDITION or SINGLE FAULT CONDITION:		N/A
	- 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:		N/A
	a) RATED conditions for TERMINAL		N/A
	b) Required RATING of external circuit insulation		N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
6.6.2	TERMINALS for external circuits		N/A
	TERMINALS which receive a charge from an internal capacitor are not HAZARDOUS LIVE after 10 s of interrupting supply connection	(see Form A.5)	N/A
6.6.3	Circuits with terminals which are HAZARDOUS LIVE		N/A
	These circuits are:		N/A
	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	ACCESSIBLE terminals for stranded conductors		N/A
	No RISK of accidental contact because:		N/A
	Located or shielded		N/A
	Self-evident or marked whether or not connected to ACCESSIBLE conductive parts		N/A
	ACCESSIBLE TERMINALS will not work loose		N/A
(6.6.101)	Each unmated measuring circuit TERMINAL which could become HAZARDOUS LIVE when the highest RATED voltage is applied to other measuring circuit TERMINALS on the equipment shall be separated by at least the applicable CLEARANCE and CREEPAGE DISTANCE of Table 101 (IEC 61010-2-033:2012)	Measured 8.0 mm (Limited: 0.8 mm)	P
(6.6.102)	Specialized measuring circuit TERMINALS shall not be both ACCESSIBLE and HAZARDOUS LIVE, in either NORMAL CONDITION or SINGLE-FAULT CONDITION, (IEC 61010-2-033:2012)	Not provided with specialized measuring circuit terminals	N/A
	a) highest RATED a.c. voltage at any RATED MAINS frequency; (IEC 61010-2-033:2012)		N/A
	b) highest RATED d.c. voltage; (IEC 61010-2-033:2012)		N/A
	c) highest RATED a.c. voltage at the maximum RATED measurement frequency. (IEC 61010-2-033:2012)		N/A
6.7	Insulation requirements	(see Form A.14)	P
6.7.1	The nature of insulation		P
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.14, A.15)	P

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	Equipment rated for operating altitude greater than 2000 m correction factor of Table 3 of 61010-1 applied	Not greater than 2000 m	N/A
6.7.1.3	CREEPAGE DISTANCES		P
	Required CREEPAGE DISTANCES reflecting factors of 6.7.1.1 a) to d)	(see Form A.14, A.15)	P
	CTI material group reflected by requirements		P
	CTI test performed		N/A
6.7.1.4	Solid insulation		P
	Required solid insulation reflecting factors of 6.7.1.1 a) to d)	(see Form A.14, A.15)	P
6.7.1.5	Requirements for insulation according to type of circuit	(see Form A.14, A.15)	P
	a) 6.7.2 MAINS circuits of OVERVOLTAGE CATEGORY II up to nominal supply voltage of 300 V	Battery operation	N/A
	b) 6.7.3 secondary circuits separated from circuits defined in a) by transformer		N/A
	c) K.1 MAINS circuits of OVERVOLTAGE CATEGORY III and IV or OVERVOLTAGE CATEGORY II over 300 V	Battery operation	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:		N/A
	1) maximum TRANSIENT OVERVOLTAGE is limited to known level below the level of MAINS CIRCUIT		N/A
	2) maximum TRANSIENT OVERVOLTAGE above the level of MAINS CIRCUIT		N/A
	3) WORKING VOLTAGE is the sum of more than one circuit or a mixed voltage		N/A
	4) WORKING VOLTAGE includes recurring peak voltage, may include non-sinusoidal or non-periodic waveform		N/A
	5) WORKING VOLTAGE with a frequency above 30 kHz		N/A
(6.7.1.5)	Addition: aa) in K.101 for measuring circuits of MEASUREMENT CATEGORIES III and IV. (IEC 61010-2-033:2012)	CAT III 300 V	P
6.7.2	Insulation for MAINS CIRCUITS of OVERVOLTAGE CATEGORY II with a nominal supply voltage up to 300 V	Not this type apparatus	N/A
6.7.2.1	CLEARANCES and CREEPAGE DISTANCES	(see Form A.14, A.15)	N/A
	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

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
6.7.2.2.1	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	(see Form A.18)	N/A
	Complies as applicable:		N/A
	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		N/A
	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		N/A
	Separated by at least 0,4 mm between same two layers		N/A
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		N/A
	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		N/A
	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 following methods used:		N/A
	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	(see Form A.18)	N/A
6.7.3	Insulation for secondary circuits derived from MAINS CIRCUITS of OVERVOLTAGE CATEGORY II up to 300 V	Not this type apparatus	N/A
6.7.3.1	Secondary circuits where separation from MAINS CIRCUITS is achieved by a transformer providing:		—

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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		N/A
	or		—
	b) pass the voltage tests of 6.8 with values of Table 6; with following adjustments:	(see Form A.18)	N/A
	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	Withstands electrical and mechanical stresses in normal use and all RATED environmental conditions of 1.4		N/A
	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.18)	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	(see Form A.18)	N/A
	value for REINFORCED INSULATION are twice the WORKING VOLTAGE		N/A
	Complies as applicable:		N/A
	1) ENCLOSURE or PROTECTIVE BARRIER of Clause 8		N/A
	2) moulded and potted parts requirements of 6.7.3.4.2		N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
	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		N/A
	Separated by at least by applicable distances of Table 8 between same two layers		N/A
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		N/A
	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		N/A
	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:		N/A
	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:	(see Form A.18)	N/A
	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 dielectric strength tests	(see Forms A.14 and A.18)	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		P
	b) Screws securing removable covers	Battery cover	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

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
6.9.2	Insulating materials		P
	Material not to be used for safety relevant insulation:		P
	a) Easily damaged materials not used		P
	b) Non-impregnated hygroscopic materials not used		P
6.9.3	Colour coding	Not provided with any earth conductors	N/A
	Green-and-yellow insulation shall not be used except:		N/A
	a) protective earth conductors;		N/A
	b) PROTECTIVE BONDING conductors;		N/A
	c) potential equalization conductors;		N/A
	d) functional earth conductors		N/A
(6.9.101)	Measuring circuit TERMINALS capable of MAINS voltage measurements. (IEC 61010-2-033:2012)	CAT III	P
	The RATED voltage of measuring circuit TERMINALS capable of MAINS voltage measurements shall be equal to or higher than the RATED voltage to earth of the TERMINALS. (IEC 61010-2-033:2012)	300 V	P
6.10	Connection to MAINS supply source and connections between parts of equipment	Not this type	N/A
6.10.1	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)		N/A
	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		N/A
	a) Inlet or bushing with a smoothly rounded opening; or		N/A
	b) Insulated cord guard protruding >5 D		N/A
6.10.2.2	Cord anchorage		N/A
	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

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	c) Cannot push the cord into the equipment to cause a HAZARD		N/A
	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	(see Form A.19)	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	(see Form A.5)	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 operation	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:		N/A
	a) Switch or circuit-breaker		N/A
	b) Appliance coupler (disconnectable without tool)		N/A
	c) Separable plug (without locking device)		N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
6.11.4	Disconnecting devices		N/A
6.11.4.1	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:		—
	Meets IEC 60947-1 and IEC 60947-3		N/A
	Marked to indicate function		N/A
	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):		N/A
	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	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 such part	N/A
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/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:		N/A
	a) obviously intended to operate on parts or materials external of the equipment		N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	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:		N/A
	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	(see Form A.20)	N/A
	Following levels are met in NORMAL and SINGLE FAULT CONDITION:		N/A
	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	(see Form A.20)	N/A
7.3.5.1	Access normally allowed		N/A
	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/A
7.3.5.2	Access normally prevented		N/A
	Maximum gap as specified in Table 14 assured in NORMAL and in SINGLE FAULT CONDITION		N/A
7.4	Stability	Handheld 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

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	c) downward force test for floor-standing equipment		N/A
	d) overload test with 4 times maximum load for castor or support that supports greatest load		N/A
	e) castor or support that supports greatest load removed from equipment		N/A
7.5	Provisions for lifting and carrying	Handheld equipment	N/A
7.5.1	Equipment more than 18 kg :		—
	Has means for lifting or carrying; or		N/A
	Directions 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
7.7	Expelled 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	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
	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

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	2) impact test of 8.2.2 with 5 J except for HAND-HELD EQUIPMENT		N/A
	if impact energy not selected to 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 with mass over 100 kg		P
	Equipment RATED with an impact rating of IK 08 that obviously meets the criteria		P
	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.30)	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/A
	vii) no damage which could cause spread of fire		P
8.2	ENCLOSURE rigidity test		P
8.2.1	Static test	(see Form A.21)	P
	- 30 N with 12 mm rod to each part of ENCLOSURE		P
	- in case of doubt test conducted at maximum RATED ambient temperature		P
8.2.2	Impact test	(see Form A.21)	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	(see Form A.21)	P
8.3.1	Other than HAND-HELD and DIRECT-PLUG-IN EQUIPMENT		N/A
	Tests conducted with a drop height or angle of		N/A
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°C	P
	Drop test conducted with an height of 1 m		P
9	PROTECTION AGAINST THE SPREAD OF FIRE		P

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
9.1	No spread of fire in NORMAL and SINGLE FAULT CONDITION		P
	MAINS supplied equipment meets requirements of 9.6 additionally		N/A
	Conformity is checked by minimum one or a combination of the following (see Figure 11):	(see Form A.22)	P
	a) SINGLE FAULT test of 4.4; or	(see Forms A.1)	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	(see Forms A.14 and A.18)	N/A
	Bridging the insulation does not cause ignition	(see Form A.1)	N/A
	b) Surface temperature of liquids and parts (see 9.5)		N/A
	c) No ignition in circuits designed to produce heat	(see Form A.1)	N/A
9.3	Containment of the fire within the equipment, should it occur		P
9.3.1	Spread of fire outside equipment reduced to a tolerable level if:		N/A
	a) Energizing of the equipment is controlled by an OPERATOR held switch		N/A
	b) ENCLOSURE is conform with constructional requirements of 9.3.1; and		N/A
	Requirements of 9.5 are met		N/A
9.3.2	Constructional requirements		P
	a) Connectors and insulating material have flammability classification V-2 or better	(see Table: 1 or Form A.23)	P
	b) Insulated wires and cables are flame retardant (VW-1 or equivalent)	(see Table: 1 or Form A.23)	N/A
	c) ENCLOSURE meets following requirements:	(see Form A.22)	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/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:		P

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	Metal (except magnesium); or		N/A
	Non-metallic materials have flammability classification V-1 or better	(see Table: 1 or Form A.22)	P
	3) ENCLOSURE and any baffle or flame barrier have adequate rigidity		P
9.4	Limited-energy circuit	(see Form A.18)	N/A
	a) Potential not more than 30 r.m.s. and 42,4 V peak, or 60 V dc		N/A
	b) Current limited by one of following means:		N/A
	1) Inherently or by impedance (see Table 17); or		N/A
	2) Overcurrent protective device (see Table 18); or		N/A
	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 such flammable liquids	N/A
	Flammable liquids contained in or specified for use with equipment do not cause spread of fire	(see Form A.25)	N/A
	RISK is reduced to a tolerable level :		N/A
	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	MAINS supplied equipment protected	Not this type apparatus	N/A
	BASIC INSULATION between MAINS parts of opposite polarity provided	(see Forms A.14 and A.15)	N/A
	Devices not in the protective conductor		N/A
	Fuses or single-pole circuit-breakers not fitted in neutral (multi-phase)		N/A
9.6.2	PERMANENTLY CONNECTED EQUIPMENT	Not this type apparatus	N/A
	Overcurrent protection device:		N/A
	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

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
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.26A)	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/A
	Heated surfaces necessary for functional reasons exceeding specified values:	Not this type apparatus	N/A
	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 such device	N/A
	Limits not exceeded in:	(see Form A.26B)	N/A
	NORMAL CONDITION		N/A
	SINGLE FAULT CONDITION		N/A
10.3	Other temperature measurements		P
	Following measurements conducted if applicable:	(see Form A.26A)	N/A
	a) Value of 60 °C of field-wiring terminal box not exceeded		N/A
	b) Surface of flammable liquids and parts in contact with this liquids		N/A
	c) Surface of non-metallic ENCLOSURES		P
	d) Parts made of insulating material supporting parts connected to MAINS supply		N/A
	e) Terminals carrying a current more than 0,5 A		P
10.4	Conduct of temperature tests		P
10.4.1	Tests conducted under reference test conditions and manufacturer's instructions	(see Form A.26A)	P
10.4.2	Temperature measurement of heating equipment		N/A
	Tests conducted in test corner	(see Form A.26A)	N/A
10.4.3	Equipment intended for installation in a cabinet or wall		N/A
	Equipment built in as specified in installation instructions	(see Form A.26A)	N/A
10.5	Resistance to heat		P
10.5.1	Integrity of CLEARANCE and CREEPAGE DISTANCES	(see Form A.16)	P
10.5.2	Non-metallic ENCLOSURES	(see Form A.27)	P
	Within 10 min after treatment:		—

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	Equipment subjected to suitable stresses of 8.2 and 8.3 complying with criteria of 8.1		P
10.5.3	Insulating material		P
	a) Parts supporting parts connected to MAINS supply		N/A
	b) TERMINALS carrying a current more than 0,5 A		P
	Examination of material data; or		N/A
	in case of doubt:		P
	1) Ball pressure test; or	(see Form A.28)	P
	2) Vicat softening test of ISO 306	(see Form A.29)	N/A

11	PROTECTION AGAINST HAZARDS FROM FLUIDS		N/A
11.1	Protection to OPERATORS and surrounding area provided by EQUIPMENT		N/A
	All fluids specified by manufacturer considered		N/A
11.2	Cleaning	(see Form A.30)	N/A
11.3	Spillage	(see Form A.30)	N/A
11.4	Overflow	(see Form A.30)	N/A
11.5	Battery electrolyte		N/A
	Battery electrolyte leakage presents no HAZARD		N/A
11.6	Specially protected equipment	(see Form A.30)	N/A
11.7	Fluid pressure and leakage		N/A
11.7.1	Maximum pressure: (see Form A.31)		N/A
	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 subjected to hydraulic test if: (see Form A.31)		N/A
	a) product of pressure and volume > 200 kPa; and		N/A
	b) pressure > 50 kPa		N/A
	Parts of refrigerating systems meets pressure-related requirements of IEC 60335-24 or IEC 60335-2-89		N/A
11.7.3	Leakage from low-pressure parts	(see Form A.32)	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

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	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	Equipment provides protection		N/A
12.2	Equipment producing ionizing radiation		N/A
12.2.1	Ionizing radiation	(see Form A.33)	N/A
12.2.1.1	Equipment meets the following requirements:		N/A
	a) if intended to emit radiation meets requirements of 12.2.1.2; or		N/A
	tested, classified and marked in accordance to IEC 60405		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		N/A
	Effective dose rate of radiation measured		N/A
	If dose rate exceeds 5 µSv/h marked with the following:		N/A
	a) Symbol 17 (ISO 361)		N/A
	b) Abbreviations of the radionuclides.....		N/A
	c) With maximum dose at 1 m; or		N/A
	with dose rate value between 1 µSv/h and 5 µSv/h in m		N/A
12.2.1.3	Equipment not intended to emit radiation	(see Form A.34)	N/A
	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	Ultraviolet (UV) radiation		N/A
	No unintentional HAZARDOUS escape of UV radiation:		N/A
	- checked by inspection; and		N/A
	- evaluation of RISK assessment documentation		N/A
12.4	Microwave radiation		N/A
	Power density does not exceed 10 W/m ²		N/A
12.5	Sonic and ultrasonic pressure		P
12.5.1	Sound level	DbA	P
	No HAZARDOUS sound emission		P

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	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	(see Form A.36)	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
	If inside useful beam above values exceeded:		N/A
	Marked with Symbol 14 of Table 1		N/A
	and following information in the documentation:		N/A
	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		N/A
	Equipment meets requirements of IEC 60825-1		N/A

13	PROTECTION AGAINST LIBERATED GASES AND SUBSTANCES, EXPLOSION AND IMPLOSION		N/A
13.1	Poisonous and injurious gases and substances		N/A
	No poisonous or injurious gases or substances liberated in NORMAL CONDITION		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	(see Form A.37)	N/A
	If explosion or fire HAZARD could occur:		—
	Protection incorporated in the equipment; or		N/A
	Instructions specify batteries with built-in protection		N/A
	In case of wrong type of battery used:		—
	No HAZARD; or		N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	Warning by marking and within instructions		N/A
	Equipment with means to charge rechargeable batteries:		—
	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		N/A
	Single component failure		N/A
	Polarity reversal test		N/A
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	Where safety is involved, components and subassemblies meet relevant requirements	(see Table 1)	P
14.2	Motors	No such devices	N/A
14.2.1	Motor temperatures		N/A
	Does not present a HAZARD when stopped or prevented from starting; or	(see Form A.1; A.26B)	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	(see Form A.38)	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
	No access to HAZARDOUS LIVE parts		N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
14.5	MAINS voltage selecting devices	No such devices	N/A
	Accidental change not possible		N/A
14.6	MAINS transformers tested outside equipment	(see Forms A.39 and A.40)	N/A
14.7	Printed circuit 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	(see Form A.23)	N/A
	Not applicable for printed wiring boards with limited-energy circuits (9.4)		N/A
14.8	Circuits or components used as TRANSIENT OVERVOLTAGE limiting devices		N/A
	Test conducted between each pair of MAINS SUPPLY TERMINALS	(see Form A.41)	N/A
	No HAZARD resulting from rupture or overheating of the component:		N/A
	- no bridging of safety relevant insulation		N/A
	- no heat to other parts above the self-ignition points		N/A
(14.101)	If control of TRANSIENT OVERVOLTAGE is employed in a measuring circuit used to measure MAINS. (IEC 61010-2-033:2012)		P
	The test voltage is applied between each pair of TERMINALS, used to measure MAINS. (IEC 61010-2-033:2012)		N/A
(14.102)	Probe assemblies within the scope of IEC 61010-031 shall meet the requirements thereof. (IEC 61010-2-033:2012)		P

15	PROTECTION BY INTERLOCKS		N/A
15.1	Interlocks are designed to remove a HAZARD before OPERATOR exposed	No such device	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

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	Factors giving rise to a HAZARD the RISK assessment is reflecting those aspects:		N/A
	a) limitation of body dimensions		N/A
	b) displays and indicators		N/A
	c) accessibility and conventions of controls		N/A
	d) arrangement of TERMINALS		N/A
(16.101)	The display shall give an unambiguous indication whenever the value is above or below of the range to which the equipment is set. (IEC 61010-2-033:2012)	OL or true value	P

17	RISK ASSESSMENT		N/A
	RISK assessment conducted, if HAZARD might arise and not covered by Clauses 6 to 16		N/A
	TOLERABLE RISK achieved by iterative documented process covering the following:		N/A
	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:		N/A
	Information contained how to mitigate these RISKS		N/A
	Following principles in methods of RISK reduction applied by manufacturer in given order:		N/A
	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

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
ANNEX F	ROUTINE TESTS		P
	Manufacturer's declaration		P
(101)	MEASURING CIRCUITS (IEC 61010-2-033:2012)		N/A
(101.1)	General		--
	Against HAZARDS resulting from NORMAL USE and REASONABLY FORESEEABLE MISUSE of measuring circuits, as specified below.		N/A
	a) Current measuring circuit shall not interrupt the circuit being measured during range changing.		N/A
	b) TERMINAL shall not cause a HAZARD when it is applied to that TERMINAL or any other compatible TERMINAL,		N/A
	c) Any interconnections intended to be used with the equipment shall not cause a HAZARD		N/A
	d) Other HAZARDS that could result from REASONABLY FORESEEABLE MISUSE shall be addressed by RISK assessment	No such hazardous	N/A
(101.2)	Current measuring circuits		--
	There shall be no interruption which could cause a HAZARD when range changing takes place,		N/A
	For connection to current transformers without internal protection shall be adequately protected to prevent a HAZARD arising from interruption of these circuits during operation.	Not this type	N/A
(101.3)	Protection against mismatches of inputs and ranges		--
(101.3.1)	General		--
	No HAZARD shall arise when the highest RATED voltage or current of a measuring circuit TERMINAL is applied to any other compatible TERMINAL, with any combination of function and range settings.		N/A
	One of the following techniques shall be used:	Not provided with any overcurrent protection device	N/A
	a) Certified overcurrent protection device to interrupt short-circuit currents before a HAZARD arises		N/A
	b) Uncertified current limitation device, impedance, or a combination of both to prevent the HAZARD from arising.		N/A
(101.3.2)	Protection by a certified overcurrent protection device		N/A
	An over current protection device is considered suitable if it is certified by an independent laboratory to meet all of the following requirements.		N/A
	a) The a.c. and d.c. RATED voltages of the over current protection device shall be at least the highest a.c. and d.c. RATED voltages.		N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement + Test	Result - Remark	Verdict
	b) The RATED time-current characteristic (speed) of the over current protection device shall be such that no HAZARD will result from any possible combination.		N/A
	c) The a.c. and d.c. RATED breaking capacities of the over current protection device shall exceed, respectively, the possible a.c. and d.c. short-circuit currents. The possible a.c. and d.c. short-circuit currents are calculated as the highest RATED voltage for any TERMINAL divided by the impedance of the over current protected measuring circuit, taking the impedance of the test leads specified in 101.3.4 into account. The possible a.c. short-circuit current need not exceed the applicable value of Table AA.1.		N/A
	Spacing surrounding the over current protection device in the equipment and following the protection device in the measuring circuit shall be sufficiently large to prevent arcing after the protection device opens.		N/A
(101.3.3)	Protection by uncertified current limitation devices or by impedances		N/A
(101.3.4)	Test leads for the tests of 101.3.2 and 101.3.3		Info
(101.4)	Functional integrity		P
	After the voltage of 4.4.2.101 has been applied to the METER, the METER shall continue to be able to indicate the presence of HAZARDOUS LIVE voltages up to the maximum RATED voltage.		P

IEC 61010-031:2008			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.4	PROBE TIPS		P
	BARRIER providing safe distance:		P
	- CLEARANCE and CREEPAGE meet the requirements for REINFORCED INSULATION	see Form A.9	P
	Spring-loaded squeeze PROBE ASSEMBLIES: (rated for WORKING VOLTAGE ≤ 1 kV)	Not this type	N/A
	a) Actuation prevents touching HAZARDOUS LIVE parts		N/A
	b) Additional protective distance of 45 mm longer than for barrier		N/A
	Crocodile clips and similar without barrier: (rated for CAT I or II)	Not this type	N/A
	- have tactile indication		N/A
6.7.2	ENCLOSURES of PROBE ASSEMBLIES with DOUBLE or REINFORCED INSULATION		P
	ENCLOSURE which surrounds all metal parts		P
	Small metal parts are separated from HAZARDOUS LIVE voltages by DOUBLE or REINFORCED INSULATION		N/A
	ENCLOSURES or parts made of insulating material fulfil requirements for DOUBLE or REINFORCED INSULATION.	see Form A.4 and Form A.9	P
	Protection for metal ENCLOSURES or parts is provided by one of the following:	Not provided with metal enclosure	N/A
	a) provision of an insulating coating or BARRIER on the inside of the ENCLOSURE		N/A
	b) CLEARANCES and CREEPAGE DISTANCES cannot be reduced by loosening of parts or wires		N/A
13	Prevention of HAZARD from arc flash and short-circuits		P
13.1	General		P
	PROBE TIPS and crocodile clips are constructed to mitigate the risk of arc flash and short-circuits.		P
13.2	Exposed conductive parts		P
13.2. a)	PROBE ASSEMBLIES RATED for CAT III or IV, the exposed conductive part of a PROBE TIP ≤ 4 mm.	3 mm probe tip was provided for CAT III 300 V	P
13.2. b)	Special applications within CAT I where the energy levels not support arc flash or fire, the exposed conductive part of a PROBE TIP ≤ 80 mm		N/A
13.2. c)	Other PROBE ASSEMBLIES, the exposed conductive part of a PROBE TIP ≤ 19 mm.		N/A
13.2. d)	The outer surfaces of the jaws of crocodile or similar clips RATED for CAT II, III, or IV are not conductive.		N/A
	HAZARDOUS LIVE parts are not ACCESSIBLE when closed		N/A

IEC 61010-1:2010 AND IEC 61010-2-033:2012						
Clause	Requirement — Test			Result — Remark		Verdict
4.4	TABLE: Testing in SINGLE FAULT CONDITION – Results			Form A.1.		P
Test subclause	Fault No.	Fault description	Td 4.4.3 (NOTE)	How was test terminated Comments	Meets 4.4.4	
4.4.2.12	1	PTC, R8 short	06:50:00	Steady state, no damaged and no hazard.	P	
4.4.2.12	2	Resistor, R9short	02:45:00	Steady state, no damaged and no hazard.	P	
4.4.2.101	3	CAT III 300 Vac, Input the 570 Vac	16:00:00	Steady state, no damaged and no hazard.	P	
NOTE Td = Test duration in hh:mm:ss Record dielectric strength test on Form A.19 and temperature tests on Form A.27A and or A.27.B. Record in the comments column for each test whether carried out during or after SINGLE FAULT CONDITION.						
Supplementary information:						

IEC 61010-1:2010 AND IEC 61010-2-033:2012					
Clause	Requirement — Test			Result — Remark	Verdict
5.3	TABLE: Durability of markings			Form A.3	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)			2)		
MAINS supply (5.1.3)			None		
Fuses (5.1.4)			None		
terminals and operating devices (5.1.5.2)			None		
Switches and circuit breakers (5.1.6)			None		
Double/reinforced equipment (5.1.7)			1)		
Field wiring Terminal boxes (5.1.8)			None		
Warning marking (5.2)			1), 2)		
Battery charging (13.2.2)			None		
Method	Test agent	Remains legible	Label loose	Curled edges	Comments
		Verdict	Verdict	Verdict	
1, 2	A	P	P	P	Pass
1, 2	B	P	P	P	Pass
Supplementary information:					

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement — Test	Result — Remark	Verdict
6.2	TABLE: List of ACCESSIBLE parts	Form A.4	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	LCD panel	V, R, J	None
2	Push button	V, R, J	None
3	Switch knob	V, R, J	None
4	Measurement terminal	V, R, J, P3, P4	None
5	Plastic enclosure	V, R, J	None
6	Metal screw	V, R, J	None
<p>NOTE 1 – Test fingers and pins are to be applied without force unless a force is specified (see 6.2.2)</p> <p>NOTE 2 – Special consideration should be given to inadequate insulation and high voltage parts (see 6.2)</p> <p>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).</p> <p>NOTE 4 – Capacitor test may be required (see Form A.5).</p> <p>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.</p>			
Supplementary information:			

IEC 61010-1:2010 AND IEC 61010-2-033:2012													
Clause	Requirement — Test							Result — Remark					Verdict
6	TABLE: Values in NORMAL CONDITION											Form A.5	P
6.1.2	Exceptions							11.2 Cleaning and decontamination					—
6.3.1	Values in NORMAL CONDITION (see NOTE 1)							11.3 Spillage					—
6.6.2	Terminals for external circuit							11.4 Overflow					—
6.10.3	Plugs and connections												—
Item	Voltage			Current				Capacitance		10 s / 5 s test (NOTE)			Comments
(see Form A.4)	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	
1	--	218 m	--	--	--	--	--	--	--	--	--	--	--
2	--	314 m	--	--	--	--	--	--	--	--	--	--	--
3	--	263 m	--	--	--	--	--	--	--	--	--	--	--
4	--	214 m	--	--	--	--	--	--	--	--	--	--	--
5	--	199 m	--	--	--	--	--	--	--	--	--	--	--
6	--	334 m	--	--	--	--	--	--	--	--	--	--	--
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 61010-1:2010 AND IEC 61010-2-033:2012							
Clause	Requirement — Test	Result — Remark				Verdict	
6.7	TABLE: Insulation requirements- Block diagram of system	Form A.14				P	
Pollution degree..... : 2				Overvoltage category..... : III			
Area	Location	Insulation type	WORKING VOLTAGE			Test voltage	Comments (NOTE 3)
		(NOTE 1)	RMS V	Peak V	Frequency kHz	(NOTE 2) V	
A	Live part to LCD panel	RI	300	300	< 30	3510 Vac	Table K.102
B	Live part to Push button	RI	300	300	< 30	3510 Vac	Table K.102
C	Live part to Switch knob	RI	300	300	< 30	3510 Vac	Table K.102
D	Live part to Terminal	BI	300	300	< 30	2210 Vac	Table K.102
E	Live part to Plastic enclosure	RI	300	300	< 30	3510 Vac	Table K.102
F	Live part to Metal screw	RI	300	300	< 30	3510 Vac	Table K.102
G	Live part to Battery	RI	300	300	< 30	3510 Vac	Table K.102
H	Terminal of Measuring circuit	BI	300	300	< 30	2210 Vac	Table K.102
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 61010-1:2010 AND IEC 61010-2-033:2012												
Clause	Requirement — Test					Result — Remark					Verdict	
6.7	TABLE: Insulation requirements- Clearances and Creepage										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											—
Area	Location (See Form A.14)	Insulation type (NOTE 1)	WORKING VOLTAGE (NOTE 2)			Clearance		Creepage		CTI	Verdict	Comments
			RMS V	Peak V	Frequency kHz	Required mm	Measured mm	Required mm	Measured mm			
A	Live part to LCD panel	RI	300	300	< 30	5.9	11.0	5.9	11.0	< 175	P	CAT III 300V
B	Live part to Push button	RI	300	300	< 30	5.9	6.0	5.9	6.0	< 175	P	CAT III 300V
C	Live part to Switch knob	RI	300	300	< 30	5.9	10.0	5.9	10.0	< 175	P	CAT III 300V
D	Live part to Terminal	BI	300	300	< 30	3.0	8.0	3.0	8.0	< 175	P	Limited: 0.8 mm (6.6.101)
E	Live part to Plastic enclosure	RI	300	300	< 30	5.9	15.0	5.9	15.0	< 175	P	CAT III 300V
F	Live part to Metal screw	RI	300	300	< 30	5.9	6.0	5.9	6.0	< 175	P	CAT III 300V
G	Live part to Battery	RI	300	300	< 30	5.9	14.5	5.9	14.5	<175	P	CAT III 300V
H	Terminal of Measuring circuit	BI	300	300	< 30	3.0	4.7	3.0	4.7	< 175	P	CAT III 300V
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.....:		-- V	-- Hz									
Supplementary information:												

IEC 61010-1:2010 AND IEC 61010-2-033:2012												
Clause	Requirement — Test							Result — Remark			Verdict	
6.7	TABLE: Insulation requirements- Clearances and Creepages										Form A.16	P
8	Mechanical resistance to shock and impact							10.5.1	Integrity of CLEARANCES and CREEPAGE distances			—
9.6.1	Overcurrent protection basic insulation between MAINS parts											—
Area	Location (See Form A.14)	Insulation type	Mechanical tests (NOTE)					Test at max. ambient (10.5.1)	Measured after test (if required)		Verdict	Comments
			Applied force N	Rigidity (8.2)		Drop (8.3)			CREEPAGE DISTANCE mm	CLEARANCE mm		
				Static (8.2.1)	Impact (8.2.2)	Normal (8.3.1)	Hand-held/ Plug-in					
A	Live part to LCD panel	RI	10	30N	5J	--	1M	50°C	11.0	11.0	P	
B	Live part to Push button	RI	10	30N	5J	--	1M	50°C	6.0	6.0	P	
C	Live part to Switch knob	RI	10	30N	5J	--	1M	50°C	10.0	10.0	P	
D	Live part to Terminal	BI	10	30N	5J	--	1M	50°C	8.0	8.0	P	Limited: 0.8 mm (6.6.101)
E	Live part to Plastic enclosure	RI	10	30N	5J	--	1M	50°C	15.0	15.0	P	
F	Live part to Metal screw	RI	10	30N	5J	--	1M	50°C	6.0	6.0	P	
G	Live part to Battery	RI	10	30N	5J	--	1M	50°C	14.5	14.5	P	
H	Terminal of Measuring circuit	BI	10	30N	5J	--	1M	50°C	4.7	4.7	P	
NOTE – Refer to Form A.19 for dielectric strength tests following the above tests.												
Supplementary information:												

IEC 61010-1:2010 AND IEC 61010-2-033:2012						
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					N/A
6.6	Connections to external circuits					N/A
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.....:			2000 m		—
	Test voltage correction factor (see Table 10).....:			1.0		—
Location or references from Forms A.1 and A.14	Clause or sub-clause	Humidity Yes/No	Working voltage V	Test voltage r.m.s./peak/d.c.	Comments (NOTE)	Verdict
A	4.4.4.1 b)	N	1000V	3510 Vac	Table K.102	P
B	4.4.4.1 b)	N	1000V	3510 Vac	Table K.102	P
C	4.4.4.1 b)	N	1000V	3510 Vac	Table K.102	P
D	4.4.4.1 b)	N	1000V	2210 Vac	Table K.102	P
E	4.4.4.1 b)	N	1000V	3510 Vac	Table K.102	P
F	4.4.4.1 b)	N	1000V	3510 Vac	Table K.102	P
G	4.4.4.1 b)	N	1000V	3510 Vac	Table K.102	P
H	4.4.4.1 b)	N	1000V	2210 Vac	Table K.102	P
A	6.7.	Y	1000V	3510 Vac	Table K.102	P
B	6.7.	Y	1000V	3510 Vac	Table K.102	P
C	6.7.	Y	1000V	3510 Vac	Table K.102	P
D	6.7.	Y	1000V	2210 Vac	Table K.102	P
E	6.7.	Y	1000V	3510 Vac	Table K.102	P
F	6.7.	Y	1000V	3510 Vac	Table K.102	P
G	6.7.	Y	1000V	3510 Vac	Table K.102	P
H	6.7.	Y	1000V	2210 Vac	Table K.102	P
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 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement – Test	Result - Remark	Verdict
8.2	ENCLOSURE rigidity test	Form A.21	P
8.2.1	Static test		P
	Material of enclosure..... : non-metallic		—
	Preparation for the test:		—
	Operated at ambient temperature..... : 40 °C 4 h		—
Location		Comments	Verdict
1) Plastic enclosure		No cracks	P
2) LCD panel		No cracks	P
8.2.2	Dynamic test		P
	Material of enclosure..... : non-metallic		—
	Corresponding IK-code		—
	Preparation for the test:		—
	Cooled to (temperature)..... : 0 °C		—
Location		Comments	Verdict
1) Top		No cracks	P
2) Side left / right		No cracks	P
3) Bottom		No cracks	P
8.3	Drop test		P
8.3.1	Other equipment		N/A
Location		Raised up to	Comments
		mm 30 °	—
1)			N/A
2)			N/A
8.3.2	Hand-held EQUIPMENT and direct plug-in equipment		P
	Material of enclosure..... : Metal / non-metallic		—
	Preparation for the test:		—
	Cooled to (temperature)..... : 0 °C		—
Location		Comments	Verdict
1) Side		No cracks	P
2) Edge		No cracks	P
3) Corner		No cracks	P
Supplementary information:			

IEC 61010-1:2010 AND IEC 61010-2-033:2012				
Clause	Requirement — Test		Result — Remark	Verdict
9	TABLE: Protection against the spread of fire			Form A.22
Item	Source of HAZARD or area of the equipment considered (circuit, component, liquid etc.)	Protection Method (9a, 9b or 9c)	Protection details	Verdict
1	Measurement circuit	9.1a	Complied to single fault condition test	P
Supplementary information:				

IEC 61010-1:2010 AND IEC 61010-2-033:2012					
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				N/A
Operating conditions:		Normal operation with AC 300 V input voltage.			
Frequency	60 Hz	Test room ambient temperature (ta)...	21 °C		
Voltage	300 V	Test duration.....	16 h 20 min		
Part / Location	t_m °C	t_c °C	t_{max} °C	Verdict	Comments
PCB	21.5	51	--	P	
LCD panel	21.9	51	85	P	
Knob	21.9	51	70	P	
Slide switch	22.0	51	70	P	
Handle parts	22.0	51	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.26B for details of winding temperature measurements					
Supplementary information:					

IEC 61010-1:2010 AND IEC 61010-2-033:2012			
Clause	Requirement — Test	Result — Remark	Verdict
10.5.2	TABLE: Resistance to heat of non-metallic ENCLOSURES	Form A.27	P
	Test method used:		—
	Non operative treatment	[70°C]	P
	Empty ENCLOSURE.....	[]	P
	Operative treatment	[70°C]	P
	Temperature during tests	7 hrs	—
Description	Material	Comments	Verdict
LCD panel	Plastic material	No cracks	P
Push button	Plastic material	No cracks	P
Switch knob	Plastic material	No cracks	P
Plastic enclosure	Plastic material	No cracks	P
	Dielectric strength test (6.8).....	3510 V r.m.s.	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:			

10.5.3	TABLE: Insulating Materials	Form A.28	P
10.5.3 1)	Ballpressure test		P
	Max. allowed impression diameter	2 mm	—
Part	Test temperature °C	Impression Diameter (mm)	Verdict
PCB	125	0.62	P
Supplementary information:			

IEC 61010-1:2010 AND IEC 61010-2-033:2012												
Clause	Requirement — Test								Result — Remark			Verdict
8	TABLE: Mechanical resistance to shock and impact										Form A.30	P
11	Protection against HAZARDS from fluids											N/A
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.												
	Clause 8 tests				Clause 11 tests							
Location (see form A.14)	Static (8.2.1) 30 N	Impact (8.2.2)	Normal (8.3.1)	Handheld Plug-in	Cleaning (11.2)	Spillage (11.3)	Overflow (11.4)	IEC 60529 (11.6)	Working voltage V	Test voltage V	Verdict	Comments
LCD panel	30 N	5 J	--	1 M	--	--	--	--	300 V	3510 Vrms	P	Table K.102
Push button	30 N	5 J	--	1 M	--	--	--	--	300 V	3510 Vrms	P	Table K.102
Switch knob	30 N	5 J	--	1 M	--	--	--	--	300 V	3510 Vrms	P	Table K.102
Terminal	30 N	5 J	--	1 M	--	--	--	--	300 V	2210 Vrms	P	Table K.102
Enclosure	30 N	5 J	--	1 M	--	--	--	--	300 V	3510 Vrms	P	Table K.102
Metal screw	30 N	5 J	--	1 M	--	--	--	--	300 V	3510 Vrms	P	Table K.102
Battery	30 N	5 J	--	1 M	--	--	--	--	300 V	3510 Vrms	P	Table K.102
NOTE – Use r.m.s., d.c. or peak to indicate the used test voltage.												
Supplementary information:												

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Clause	Requirement — Test	Result — Remark	Verdict

TABLE: 1 - List of components and circuits relied on for safety						
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)
Enclosure	--	Chi Mei Corporation	PA-764B	V-0, 80 °C, min. 2.5 mm thick.	Applicable parts of EN 61010-1, UL94, UL746	UL recognized
PCB	--	Various	Various	V-1, 105 °C, min. 1.6 mm thickness.	Applicable parts of EN 61010-1, UL94, UL796	UL recognized
Spark Gaps	--	Taiyo Yuden	AG15P	Discharge starting voltage: min. DC 1200 V. Insulation resistance: 10000 M ohm.	Applicable parts of EN 61010-1	--
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 s → 3 List licence no or method of acceptance						

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Clause	Requirement — Test	Result — Remark	Verdict

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Clause	Requirement — Test	Result — Remark	Verdict

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Clause	Requirement — Test	Result — Remark	Verdict

Photo

