



TEST REPORT

EN 61010-1: 2010

Safety requirements for electrical equipment for measurement, control, and laboratory use -- Part 1: General requirements

Report

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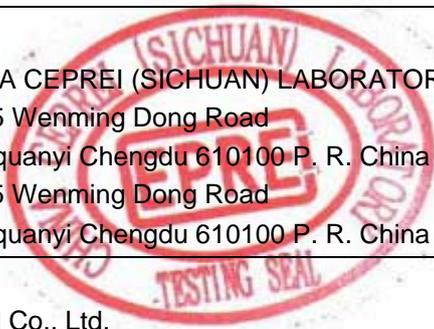
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Testing laboratory

Name..... : CHINA CEPREI (SICHUAN) LABORATORY.

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Testing location : No.45 Wenming Dong Road
Longquanyi Chengdu 610100 P. R. China



Client

Name : Acrel Co., Ltd.

Address : No. 253, Yulv Road, Jiading District, Shanghai China

Test specification

Standard..... : EN61010-1:2010

Test procedure : LVD

Procedure deviation : N.A.

Non-standard test method : N.A.

Test report form/blank test report

Test report form No.....: SCC61010-1

TRF modified by.....: CHINA CEPREI (SICHUAN) LABORATORY.

Master TRF.....: PS_INFO\2-ELS.MES\REPORTS\CCA

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Test item	
Type of test object	Power Quality Analyzer
Trademark	
Model and/or type reference.....	ACR330ELH , ACR220ELH, ACR230ELH, ACR320ELH, ACR350EGH
Manufacturer.....	Jiangsu Acrel Electric MFG. Co., Ltd.
Rating(s)	Input Voltage:AC/DC85-270V
Equipment mobility.....	Stationary
Operating condition	Continuous
Tested for IT power systems :	No
IT testing, phase-phase voltage (V) :	N.A.
Class of equipment :	Class II
Mass of equipment (kg) :	<3kg
Protection against ingress of water...:	IP20
Possible test case verdicts	
Test case does not apply to the test object..... :	N(.A.)
Test object does meet the requirement..... :	P(ass)
Test object does not meet the requirement..... :	F(ail)
General remarks	
"(see remark #)" refers to a remark appended to the report.	
"(see appended table)" refers to a table appended to the report.	
Throughout this report a comma is used as the decimal separator.	
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 testing laboratory.	
General descriptions	
Brief description of the tested sample(s):	
Ambient temperature: 22°C humidity: 55%	
Complete test was conducted on ACR330ELH	
These types(ACR330ELH, ACR220ELH, ACR230ELH, ACR320ELH, ACR350EGH) are series productics.	

Clause	Requirement-Test	Result-Remark	Verdict
4.4	Testing in SINGLE FAULT CONDITIONS		P
4.4.1	Fault tests	(see Form A.1 and A.2)	P
4.4.2	SINGLE FAULT CONDITIONS not covered by 4.4.2.1 to 4.4.2.12	(see Form A.1 and A.2)	P
	Specific faults:		P
4.4.2.1	PROTECTIVE IMPEDANCE	See the rated clause	P
4.4.2.2	Protective conductor	See the rated clause	P
4.4.2.3	Equipment or parts for short-term or intermittent operation	Not applicable	N
4.4.2.4	Motors	Not applicable	N
4.4.2.5	Capacitors	Not applicable	N
4.4.2.6	Mains transformers	Not applicable	N
4.4.2.7	Outputs		N
4.4.2.8	Equipment for more than one supply		N
4.4.2.9	Cooling	Not applicable	N
4.4.2.10	Heating devices	Not applicable	N
4.4.2.11	Insulation between circuits and parts	See the rated clause	P
4.4.2.12	Interlocks	Not applicable	N

5	MARKING AND DOCUMENTATION		P
5.1.1	General		P
	Required equipment markings are:		—
	visible:		P
	From the exterior; or		P
	After removing a cover; or		N
	Opening a door		N
	After removal from a rack or panel		N
	Not put on parts which can be removed by an OPERATOR		P
	Letter symbols (IEC 60027) used	Pass muster	P
	Graphic symbols (IEC 61010-1: Table 1) used	Pass muster	P
5.1.2	Identification		P
	Equipment is identified by:		—
5.1.2a)	Manufacturer's or supplier's name or trademark	Jiangsu Acrel Electric MFG. Co., Ltd.	P
5.1.2b)	Model number, name or other means	ACR330ELH	P
	Manufacturing location identified		P
5.1.3	Mains supply		P
	Equipment is marked as follows:		—

Clause	Requirement-Test	Result-Remark	Verdict
5.1.3a)	Nature of supply:		—
	1) a.c. RATED mains frequency or range of frequencies	50Hz	P
	2) d.c. with symbol 1		N
5.1.3b)	RATED supply voltage(s) or range	AC/DC85-270V	P
5.1.3c)	Max. RATED power (W or VA) or input current		P
	The measured value not more than 110 %	(see Form A.3)	P
	If more than one voltage range:	One voltage range	—
	Separate values marked; or		N
	Values differ by less than 20 %	(see Form A.3)	N
5.1.3d)	OPERATOR-set for different RATED supply voltages:	Not applicable	—
	Indicates the equipment set voltage		N
	PORTABLE EQUIPMENT indication is visible from the exterior		N
	Changing the setting changes the indication		N
5.1.3e)	Accessory mains socket-outlets accepting standard mains plugs are marked:	Not applicable	—
	With the voltage if it is different from the mains supply voltage		N
	For use only with specific equipment		N
	If not marked for specific equipment it is marked with:		—
	The maximum RATED current or power; or		N
	Symbol 14 with full details in the documentation		N
5.1.4	Fuses	Not applicable	N
	OPERATOR replaceable fuse marking (see also 5.4.5)		N
5.1.5	TERMINALS, connections and operating devices		P
	Where necessary for safety, indication of purpose of TERMINALS, connectors, controls and indicators marked		P
	If insufficient space, symbol 14 used		N
5.1.5.1	TERMINALS		P
	Mains supply TERMINALS identified	AC/DC85-270V	P
	Other TERMINAL marking		N
5.1.5.1a)	FUNCTIONAL EARTH TERMINALS (symbol 5 used)	Class II	N
5.1.5.1b)	PROTECTIVE CONDUCTOR TERMINALS:		N
	Symbol 6 is placed close to or on the TERMINAL; OR		N
	Part of appliance inlet		N
5.1.5.1c)	TERMINALS of measuring and control circuits (symbol 7 used)	Pass muster	P

Clause	Requirement-Test	Result-Remark	Verdict
5.1.5.1d)	HAZARDOUS LIVE TERMINALS supplied from the interior		N
	Standard MAINS socket outlet; or		N
	RATINGS marked; or		N
	Symbol 14 used		N
5.1.5.1e)	ACCESSIBLE FUNCTIONAL EARTH TERMINALS:	Class II	N
	Self-evident; or		N
	Indication (symbol 8 acceptable)		N
5.1.5.2	Measuring circuit TERMINALS		N
	Unless clear indication that below the limits of 50 V a.c. or 120 V d.c. to earth:		N
	Required markings are adjacent to TERMINALS; OR		N
	If insufficient space:		—
	On the RATING plate or scale plate; or		N
	TERMINAL is marked with symbol 14		N
5.1.5.2a)	For CAT I measurement circuits:		—
	RATED voltage	AC/DC85-270V	N
	Current marked if applicable.....	AC/DC	N
	Symbol 14 marked		N
5.1.5.2b)	For CAT II, CAT III or CAT IV measurement circuits:		—
	RATED voltage		N
	Current marked if applicable.....		N
	Appropriate measurement category marked (CAT II, CAT III or CAT IV); or		N
	No marking required for:		N
	TERMINALS other than those permanently connected and not ACCESSIBLE with appropriate information in installation manual (see 5.4.3)		N
	For specific connection to other equipment TERMINALS only, and means for identifying provided		N
5.1.6	Switches and circuit breakers	Not applicable	N
	If disconnecting device, on or off position marked		N
5.1.7	Equipment protected by DOUBLE INSULATION or REINFORCED INSULATION		P
	Protected throughout (symbol 11 used)	Class II	N
	Only partially protected (symbol 11 not used)		N
5.1.8	Field-wiring terminal boxes	No such boxes	N
	If terminal or enclosure exceeds 60 °C:	(See Form A.20A)	N
	Cable temperature rating marked.....		N
	Marking visible before and during connection or beside terminal		N
5.2	Warning markings		P

Clause	Requirement-Test	Result-Remark	Verdict
	Visible when ready for normal use		P
	Are near or on applicable parts		P
	Symbols and text correct dimensions and colour		P
	If necessary marked with symbol 14		N
	Statement to isolate or disconnect		N
5.3	Durability of markings		P
	The required markings remain clear and legible in NORMAL USE	(see Form A.4)	P
5.4	Documentation		P
5.4.1	General		P
	Equipment is accompanied by documentation which includes:		—
5.4.1a)	Intended use		P
5.4.1b)	Technical specification	Pass muster	P
5.4.1c)	Instructions for use	Pass muster	P
5.4.1d)	Name and address of manufacturer or supplier	Pass muster	P
5.4.1e)	Information specified in 5.4.2 to 5.4.5		P
5.4.1f)	If marking of TERMINALS required, definition of measurement category		N
5.4.1g)	If CAT 1:		N
	Warning not to be used in CAT II, CAT III or CAT IV measurement circuits		N
	RATINGS including RATED transient overvoltages ... :		N
5.4.1	Warning statements and a clear explanation of warning symbols:		—
	Provided in the documentation; or		P
	Information is marked on the equipment	Pass muster	P
5.4.2	Equipment RATINGS		P
	Documentation includes:		—
5.4.2a)	Supply voltage or voltage range	AC/DC85-270V	P
	Frequency or frequency range	50Hz	P
	Power or current RATING		P
5.4.2b)	Description of all input and output connections	Provided in the Operator's Manual	P
5.4.2c)	RATING of insulation of external circuits, when such circuits are nowhere ACCESSIBLE	No external circuits	N
5.4.2d)	Statement of the range of environmental conditions	Provided in the Operator's Manual	P
5.4.2e)	Degree of protection (IEC 60529)		N
5.4.3	Equipment installation		P
	Documentation includes instructions for:		—

Clause	Requirement-Test	Result-Remark	Verdict
5.4.3a)	Assembly, location and mounting requirements	Provided in the Operator's Manual	P
5.4.3b)	Protective earthing	Not applicable	N
5.4.3c)	Connections to supply		P
5.4.3d)	permanently connected equipment:	Not applicable	N
	1) Supply wiring requirements		N
	2) If external switch or circuit-breaker, requirements and location recommendation		N
5.4.3e)	Ventilation requirements		P
5.4.3f)	Special services (e. g. air, cooling liquid)	Not applicable	N
5.4.3g)	Maximum sound power level		N
5.4.3h)	Instructions about sound pressure		N
5.4.3i)	Permanently connected measuring TERMINALS:	Not applicable	N
	Measurement category	Measurement category: IV	P
	RATED maximum WORKING VOLTAGE or current		N
5.4.4	Equipment operation		P
	Instructions for use include:		—
5.4.4a)	Identification of operating controls		P
5.4.4b)	Positioning for disconnection		P
5.4.4c)	Interconnection		P
5.4.4d)	Specification of intermittent operation limits	Not applicable	N
5.4.4e)	Explanation of symbols used	Pass muster	P
5.4.4f)	Replacement of consumable materials	Not applicable	N
5.4.4g)	Cleaning and decontamination (see 11.2)		N
5.4.4h)	Listing of any poisonous or injurious gases and quantities		N
5.4.4i)	Risk-reduction procedures relating to flammable liquids		N
	A statement about protection impairment if used in a manner not specified by the manufacturer		N
5.4.5	Equipment maintenance		P
	Instructions for RESPONSIBLE BODY include:		—
	Sufficient preventive maintenance and inspection information		P
	Replacement of hoses or parts containing liquids, etc.	Not applicable	N
	Specific battery type of user replaceable batteries	No such battery	N
	Any manufacturer specified parts		P
	RATING and characteristics of fuses	Not applicable	N

Clause	Requirement-Test	Result-Remark	Verdict
6	PROTECTION AGAINST ELECTRIC SHOCK	(see Form A.5)	P
6.1	General		P
6.1.1	Requirements		—
	Accessible parts not hazardous live in normal condition and single fault condition		P
	Conformity is checked by the determination of 6.2 and 6.3 followed by the tests of 6.4 to 6.11	See the rated clause	P
6.1.2	Exceptions		N
	Capacitance test	(see Forms A.6 and A.7)	N
	Parts not hazardous live 10 s after interruption of supply		N
6.2	Determination of accessible parts		P
6.2.1	General examination	(see Form A.6)	P
6.2.2	Openings above parts that are hazardous live		N
6.2.3	Openings for pre-set controls		N
6.3	Permissible limits for accessible parts		P
6.3.1	Values in normal condition	(see Form A.7)	P
6.3.2	Values in single fault condition	(see Form A.8)	P
6.4	Protection in normal condition (see 6.2, 6.3.1, 6.7, 6.8 and 8.1)	See the rated clause	P
6.4a)	Basic insulation (see annex D)		P
6.4b)	Enclosures and barriers		P
6.4c)	Impedance		N
6.5	Protection in single fault condition		P
	Additional protection is provided by:		—
	One or more of 6.5.1 to 6.5.3; or		P
	Automatic disconnection of the supply (6.5.4)		N
6.5.1	Protective bonding		P
	accessible conductive parts:		—
	Separated by double insulation or reinforced insulation; or		P
	Bonded to the protective conductor terminal; or	Not applicable	N
	Separated by screen or barrier bonded to protective conductor terminal from parts which are hazardous live	Not applicable	N
6.5.1.1	Integrity of protective bonding		P
6.5.1.1a)	protective bonding consists of directly connected structural parts or discrete conductors or both; and withstands thermal and dynamic stresses	Pass muster Comply with the requirements	P
6.5.1.1b)	Soldered connections:	Not applicable	N
	Independently secured against loosening		N

Clause	Requirement-Test	Result-Remark	Verdict
	Not used for other purposes		N
	Screw connections are secured		N
6.5.1.1c)	protective bonding not interrupted	Not applicable	N
6.5.1.1d)	Any moveable connection specifically designed, and meets 6.5.1.3	Not applicable	N
6.5.1.1e)	No external metal braid of cables used		P
6.5.1.1f)	If MAINS supply passes through:		N
	Means provided for passing protective conductor;		N
	Impedance meets 6.5.1.3.		N
6.5.1.1g)	Protective conductors bare or insulated, if insulated, green/yellow	Class II	N
	Exceptions:		—
	1) earthing braids;		N
	2) internal protective conductors etc.;		N
	Green/yellow not used for other purposes		N
6.5.1.1h)	terminal suitable, and meets 6.5.1.2		P
6.5.1.2	Protective conductor terminal		N
6.5.1.2a)	Contact surfaces are metal		N
6.5.1.2b)	Appliance inlet used		P
6.5.1.2c)	For rewirable cords and permanently connected equipment, protective conductor terminal is close to mains supply terminals		N
6.5.1.2d)	If no mains supply is required, any protective conductor terminal:		P
	Is near terminals of circuit for which protective earthing is necessary		P
	External if other terminals external		P
6.5.1.2e)	Equivalent current-carrying capacity to mains supply terminals	(see Form A.9)	N
6.5.1.2f)	If plug-in, makes first and breaks last		N
6.5.1.2g)	If also used for other bonding purposes, protective conductor:		N
	Applied first;		N
	Secured independently;		N
	Unlikely to be removed by servicing; or		N
	Warning marking requires replacement of protective conductor		N
6.5.1.2h)	PROTECTIVE CONDUCTOR of measuring circuit:		N
	1) Current RATING equivalent to measuring circuit TERMINAL;		N
	2) PROTECTIVE BONDING:		N

Clause	Requirement-Test	Result-Remark	Verdict
	Not interrupted; or		N
	Indirect bonding used (see 6.5.1.5)		N
6.5.1.2i)	FUNCTIONAL EARTH TERMINALS allow independent connection		N
6.5.1.2j)	If a binding screw used for PROTECTIVE CONDUCTOR TERMINAL:		N
	Suitable size for bond wire		N
	Not smaller than M 4 (No. 6)		N
	At least 3 turns of screw engaged		N
	Contact pressure not capable of reduction by deformation of materials		N
	Passes tightening torque test	(see Form A.9)	N
6.5.1.3	Impedance of protective bonding of plug-connected equipment	(see Form A.10)	N
6.5.1.4	Bonding impedance of permanently connected equipment	(see Form A.10)	N
6.5.1.5	Indirect bonding for measuring and test equipment	(see Form A.11)	N
6.5.2	double insulation and reinforced insulation (see 6.7, 6.8 and 6.9.2)		N
6.5.3	protective impedance		N
6.5.3a)	High-integrity single component used (s. 14.6); or		N
6.5.3b)	A combination of components used; or		N
6.5.3c)	A combination of basic insulation and current- or voltage-limiting device used		N
	Components, wires and connections are rated as required	(see Table 3 and Form A.12)	N
6.5.4	Automatic disconnection of the supply		N
	If used, it meets :		—
6.5.4a)	Supplied with the equipment; or		N
	Specified by installation instruction		N
6.5.4b)	Rated disconnecting time within limit specified		N
6.5.4c)	Rated for maximum rated load		N
6.6	Connections to external circuits		N
6.6.1	General		N
	Connections do not cause accessible parts of the following to become hazardous live in normal condition or single fault condition:		—
6.6.1a)	The external circuits		N
6.6.1b)	The equipment		N
	Separation of circuits provided; or		N
	Short circuit of separation does not cause a Hazard		N

Clause	Requirement-Test	Result-Remark	Verdict
	Instructions or markings include:		—
	1) rated conditions for terminal		N
	2) Required rating of external circuit insulation		N
6.6.2	terminals for external circuits		N
	TERMINALS which receive a charge from an internal capacitor are not HAZARDOUS LIVE	(see Form A.7)	N
	High voltage TERMINALS energized from the interior are:		—
	Not ACCESSIBLE if connected; or		N
	When unmated HAZARDOUS LIVE TERMINALS not ACCESSIBLE ; or		N
	marked with symbol 12		N
6.6.3	Circuits with TERMINALS which are HAZARDOUS LIVE		N
	These circuits are:		—
	Not connected to ACCESSIBLE conductive parts; or		N
	Connected to ACCESSIBLE conductive parts, but are not MAINS CIRCUITS and have one TERMINAL contact at earth potential		N
	No ACCESSIBLE conductive parts are HAZARDOUS LIVE		N
6.6.4	ACCESSIBLE TERMINALS for stranded conductors		N
6.6.4a)	No risk of accidental contact because:		N
	Located or shielded		N
	Self-evident or marked whether or not connected to ACCESSIBLE conductive parts		N
6.6.4b)	ACCESSIBLE TERMINALS will not work loose		N
6.7	CLEARANCES and CREEPAGE DISTANCES	(See Form A.5 and A.13)	P
6.8	Procedure for dielectric strength tests	(See Form A.5 and A.14)	P
6.9	Constructional requirements for protection against electric shock		P
6.9.1	General		
	If a failure could cause a HAZARD:		—
6.9.1a)	Security of wiring connections		P
6.9.1b)	Screws securing removable covers	No such covers	N
6.9.1c)	Accidental loosening		P
	Material not to be used for safety relevant insulation:		—
	1) Easily damaged materials not used		P
	2) Non-impregnated hydroscopic materials not used		P
6.9.2	ENCLOSURES of equipment with DOUBLE INSULATION or REINFORCED INSULATION		P
	ENCLOSURE surrounds all metal parts except for small metal parts which are separated		P
	ENCLOSURES or parts made of insulating material		P

Clause	Requirement-Test	Result-Remark	Verdict
	Protection for metal ENCLOSURES or parts by:		—
6.9.2a)	An insulating coating or BARRIER on the inside; or	Pass muster	P
6.9.2b)	CLEARANCES and CREEPAGE DISTANCES cannot be reduced by loosening of parts or wires	Pass muster	P
6.9.3	Over-range indication	No such indication	N
	Unambiguous		N
6.10	Connection to MAINS supply source and connections between parts of equipment		P
6.10.1	MAINS supply cords	Not applicable	N
6.10.1a)	RATED for maximum equipment current (see 5.1.3c)		N
	Cable complies with IEC 60227 or IEC 60245		N
6.10.1b)	Heat-resistant if likely to contact hot parts		N
6.10.1c)	Temperature RATING (cord and inlet)		N
6.10.1d)	Green/yellow used only for connection to PROTECTIVE CONDUCTOR TERMINALS		N
	Detachable cords with IEC 60320 MAINS connectors:		—
	Conform to IEC 60799; or		N
	Have the current RATING of the MAINS connector		N
6.10.2	Fitting of non-detachable MAINS supply cords		P
	Non-detachable cord protection:		—
6.10.2a)	Inlet or bushing smoothly rounded; or	Pass muster	P
6.10.2b)	Insulated cord guard protruding >5D	Pass muster	P
	Protective earth conductor is the last to take the strain		P
6.10.2	Cord anchorages:		P
6.10.2a)	Cord is not clamped by direct pressure from a screw	Comply with the requirements	P
6.10.2b)	Knots are not used	Pass muster	P
6.10.2c)	Cannot push the cord into the equipment to cause a hazard	Pass muster	P
6.10.2d)	No failure of cord insulation in anchorage with metal parts	Not applicable	N
6.10.2e)	Compression bushing:		N
	1) Clamps all types and sizes of MAINS cords; and		N
	2) Is suitable:		—
	For connection to terminals provided; or		N
	It is designed for screened mains cord		N
6.10.2f)	Cord replacement does not cause a hazard and method of strain relief is clear		N
	Push-pull test	(see Form A.15)	N
6.10.3	Plugs and connectors	No such plugs and connectors	N

Clause	Requirement-Test	Result-Remark	Verdict
6.10.3a)	MAINS supply plugs, connectors etc., conform with relevant specifications		N
6.10.3b)	If equipment supplied at voltages below 6.3.2.a) or from a sole source:		N
	Plugs of supply cords do not fit MAINS sockets above RATED supply voltage		N
	MAINS-type plugs used only for connection to MAINS supply		N
610.3c)	Plug pins which receive a charge from an internal capacitor	(See Form A.7)	N
6.10.3d)	Accessory MAINS socket outlets:		N
	1) Marking if accepts a standard MAINS plug (see 5.1.3e)		N
	2) Input has a protective earth conductor if outlet has earth TERMINAL contact		N
6.11	Disconnection from supply source		P
6.11.1	General		P
	Disconnects all current carrying conductors		P
6.11.1.1	Exceptions		N
6.11.1.1a)	Equipment supplied by low energy source; or		N
6.11.1.1b)	Equipment connected to impedance protected supply; or		N
6.11.1.1c)	Equipment constitutes an impedance protected load		N
6.11.2	Requirements according to type of equipment		P
6.11.2.1	Permanently connected equipment and multi-phase equipment:	Not applicable	N
	Employs switch or circuit-breaker		N
	If switch or circuit-breaker is not part of the equipment, documentation specifies:		—
6.11.2.1a)	Switch or circuit-breaker to be included in building installation		N
6.11.2.1b)	Location		N
6.11.2.1c)	Marking		N
6.11.2.2	Single-phase cord-connected equipment		P
	Equipment is provided with:		—
6.11.2.2a)	Switch or circuit-breaker; or		N
6.11.2.2b)	Appliance coupler (disconnectable without TOOL); or		P
6.11.2.2c)	Separable plug (without locking device)		N
6.11.2.3	HAZARDS arising from function	Not applicable	N
	Emergency switch		N
	Emergency switch ≤ 1 m from the moving part		N
6.11.3	DISCONNECTING DEVICES	Not applicable	N

Clause	Requirement-Test	Result-Remark	Verdict
	ELECTRICALLY CLOSE TO THE SUPPLY		N
6.11.3.1	SWITCHES AND CIRCUIT-BREAKERS	No such switches and circuit-breakers	N
	WHEN USED AS DISCONNECTION DEVICE:		—
	MEETS IEC 60947-1 AND IEC 60947-3		N
	MARKED TO INDICATE FUNCTION		N
	NOT INCORPORATED IN MAINS CORD		N
	Does not interrupt protective earth conductor		N
	If has other contacts meets separation requirements of 6.6 and 6.7		N
6.11.3.2	Appliance couplers and plugs	No such couplers and plugs	N
	Where an appliance coupler or seperable plug is used as the disconnecting device (see 6.11.2.2):		—
	Readily identifiable and easily reached by the operator		N
	Single-phase portable equipment cord length not more than 3 m		N
	Protective earth conductor connected first and disconnected last		N

7	PROTECTION AGAINST MECHANICAL HAZARDS		P
7.1	General		P
	Conformity is checked by 7.2 to 7.6		P
7.2	Moving parts	No moving parts	N
	Moving parts not able to crush, etc. (see also 6.11.2.3)		N
	If OPERATOR access permitted:		—
7.2a)	Access requires TOOL		N
7.2b)	Statement about training		N
7.2c)	Warning markings or symbol 14		N
7.3	Stability		N
	Marking of non-automatic means		N
	Conformity tests:		—
7.3a)	10° tilt test		P
7.3b)	multi-directional force test	Pass muster	P
7.3c)	downward force test		P
7.4	Provisions for lifting and carrying		P
	Handles or grips withstand four times weight		P
	Equipment more than 18 kg :		P
	Has means for lifting or carrying; or	Pass muster	P

Clause	Requirement-Test	Result-Remark	Verdict
	Directions in documentation		P
7.5	Wall mounting	Not applicable	N
	Mounting brackets withstand four times weight		N
7.6	Expelled parts	Not applicable	N
	Equipment contains or limits the energy		N
	Protection not removable without the aid of a tool		N

8	MECHANICAL RESISTANCE TO SHOCK AND IMPACT		P
8.1	ENCLOSURE rigidity test		P
8.2	Drop test		P
	After the tests of 8.1 to 8.2:		—
	Voltage tests	(see Form A.14)	P
	Inspections:		—
8a)	HAZARDOUS LIVE parts not accessible		P
8b)	ENCLOSURE shows no cracks (hazard)		P
8c)	CLEARANCES not less than their permitted values	(see Form A.13)	P
8d)	BARRIERS not damaged or loosened		P
8e)	No moving parts exposed, except permitted by 7.2		N
8f)	No damage which could cause spread of fire		P

9	PROTECTION AGAINST THE SPREAD OF FIRE		P
	Conformity for each source of HAZARD or area of the equipment is checked by one of the following:	(See Form A.16)	—
9a)	Fault test of 4.4; or	(See Forms A.1 and A.2)	P
9b)	Application of 9.1 (eliminating or reducing the sources of ignition); or	Pass muster	P
9c)	Application of 9.2 (containment of fire within the equipment)	Pass muster	P
9.1	Eliminating or reducing the sources of ignition within the equipment		P
9.1a)	1) Limited-energy circuit (see 9.3); or		P
	2) basic insulation provided for parts of different potential; or	(see Form A.5 and A.14)	P
	Bridging the insulation does not cause ignition	(see Form A.2)	N
9.1b)	Surface temperature of liquids and parts (see 9.4.a)	Not applicable	N
9.1c)	No ignition in circuits designed to produce heat	(see Form A.2)	N
9.2	Containment of the fire within the equipment, should it occur		P
9.2a)	Energizing of the equipment is controlled by an operator held switch		N
9.2b)	Enclosure is conform with constructional requirements of 9.2.1; and	Pass muster Comply with the requirements	P

Clause	Requirement-Test	Result-Remark	Verdict
	Requirements of 9.4b) or c) are met		P
9.2.1	Constructional requirements		P
9.2.1a)	Insulated wires have flammability classification FV1 or better	(see Form A.17)	P
	Connectors and insulating material have flammability classification FV2 or better	(see Form A.17)	P
9.2.1b)	The enclosure is constructed as follows :		P
	1) Bottom constructed with:		—
	No openings; or		P
	Extent as specified in figure 7; or		P
	Baffles as specified in figure 6; or		P
	Perforated as specified in Table 12; or		N
	Metal screen with a mesh		N
	2) Sides have no openings as specified in figure 7		P
	3) Material of ENCLOSURE and any baffle or flame barrier is made of:		—
	Metal (except magnesium); or		P
	Non metallic materials have flammability classification FV1 or better	(see Table: 3 or Form A.17)	P
	4) ENCLOSURE and any baffle or flame barrier have adequate rigidity	Pass muster Comply with the requirements	P
9.3	Limited-energy circuit	Not applicable	N
9.3a)	Potential not more than 30 r.m.s. and 42.4 V peak, or 60 V dc	(see Form A.18)	N
9.3b)	Current limited by one of following means:		N
	1) Inherently or by impedance; or		N
	2) Overcurrent protective device; or		N
	3) A regulating network limits also in SINGLE FAULT CONDITION		N
9.3c)	Is separated by at least BASIC INSULATION		N
	If overcurrent protective device used:		—
	Fuse or a non adjustable electromechanical device		N
9.4	Requirements for equipment containing or using flammable liquids		N
	Flammable liquids contained in or specified for use with equipment do not cause spread of fire	Not applicable	N
	Risk is reduced to a tolerable level :	(see Form A.19)	—
9.4a)	The temperature of surface or parts in contact with flammable liquids is 25 °C below fire point		N
9.4b)	The quantity of liquid is limited		N
9.4c)	Flames are contained within the equipment		N
	Detailed instructions for risk-reduction provided		N

Clause	Requirement-Test	Result-Remark	Verdict
9.5	Overcurrent protection	Not applicable	N
	Devices not in the protective conductor		N
	Fuses or single-pole circuit-breakers not fitted in neutral (multi-phase)		N
9.5.1	PERMANENTLY CONNECTED EQUIPMENT	Not applicable	N
	Overcurrent device:		—
	Fitted within the equipment; or		N
	Specified in manufacturer's instructions		N
9.5.2	Other equipment	Not applicable	N
	Protection within the equipment		N

10	EQUIPMENT TEMPERATURE LIMITS AND RESISTANCE TO HEAT		P
10.1	Surface temperature limits for protection against burns		P
	Easily touched surfaces within the limits	(see Form A.20A)	P
	Heated surfaces necessary for functional reasons exceeding specified values:	Not applicable	—
	Are recognizable as such by appearance or function; or		N
	Are marked with symbol 13		N
	Guards are not removable without TOOL		N
10.2	Temperatures of windings		N
	Limits not exceeded in:	(see Form A.20B)	—
	NORMAL CONDITION		N
	SINGLE FAULT CONDITION		N
10.3	Other temperature measurements		N
	Following measurements conducted if applicable:	(see Form A.20A)	—
10.3a)	Value of 60 °C of field-wiring terminal box not exceeded	No such box	N
10.3b)	Surface of flammable liquids and parts in contact with this liquids	No such liquids	N
10.3c)	Surface of non-metallic enclosures	Pass muster	P
10.3d)	Parts made of insulating material supporting parts connected to mains supply	Pass muster	P
10.3e)	Terminals carrying a current more than 0.5 A	Pass muster No danger	P
10.4	Conduct of temperature test	(see Form A20)	P
10.5	Resistance to heat		P
10.5.1	Integrity of clearance and creepage distances	(See Form A.13)	P
10.5.2	Non-metallic enclosures	(See Forms A.21)	P

Clause	Requirement-Test	Result-Remark	Verdict
	After treatment:		—
	No hazardous live parts accessible;		P
	Tests of 8.1 and 8.2	(See Form A.13)	P
	In case of doubt, tests of 6.8 (without humidity preconditioning)	(See Form A.14)	N
10.5.3	Insulating material		P
10.5.3a)	Parts supporting parts connected to MAINS supply		P
10.5.3b)	TERMINALS carrying a current more than 0.5 A		P
	Examination of material data; or		P
	in case of doubt::		—
	1) Ball pressure test; or	0.75mm not exceed 2 mm. Pass muster	P
	2) Vicat softening test of ISO 306		N

11	PROTECTION AGAINST HAZARDS FROM FLUIDS		N
11.1	General		N
11.2	Cleaning	(See Form A.23)	N
11.3	Spillage	(See Form A.23)	N
11.4	Overflow	(See Form A.23)	N
11.5	Battery electrolyte		N
	Battery electrolyte leakage presents no hazard		N
11.6	Specially protected equipment	(See Form A.23)	N
11.7	Fluid pressure and leakage		N
11.7.1	1.1 Maximum pressure	(See Form A.24)	N
	Maximum pressure of any part does not exceed P_{RATED}		N
11.7.2	1.1.1.1.1.1.1.1.1 Leakage and rupture at high pressure	(See Form A.24)	N
	Test to IEC 60335 (refrigeration only)		N
11.7.3	1.1.2 Leakage from low-pressure parts	(See Form A.24)	N
11.7.4	Overpressure safety device		N
	Does not operate in NORMAL USE		N
	Meets ISO 4126-1; and		N
	It is conform with:		—
11.7.4a)	Connected as close as possible to parts intended to be protected		N
11.7.4b)	Easy access for inspection, maintenance and repair		N
11.7.4c)	Adjustment only with TOOL		N
11.7.4d)	No discharge towards person		N

Clause	Requirement-Test	Result-Remark	Verdict
11.7.4e)	No HAZARD from deposit of discharged material		N
11.7.4f)	Adequate discharge capacity		N
11.7.4g)	No shut-off valve between overpressure safety device and protected parts		N

12	PROTECTION AGAINST RADIATION, INCLUDING LASER SOURCES, AND AGAINST SONIC AND ULTRASONIC PRESSURE		N
12.1	General		N
	Equipment provides protection		N
12.2	Equipment producing ionizing radiation		N
12.2.1	Ionizing radiation	(See Form A.25)	N
12.2.2	Accelerated electrons		N
12.3	Ultra-violet (UV) radiation	(Conformity test under consideration)	N
	No unintentional and HAZARDOUS escape of UV radiation		N
12.4	Micro-wave radiation		N
	Power density does not exceed 10 W/m ²		N
12.5	Sonic and ultrasonic pressure		N
12.5.1	Sound level	(See Form A.26)	N
12.5.2	Ultrasonic pressure	(See Form A.26)	N
12.6	Laser sources (IEC 60825-1)		N

13	PROTECTION AGAINST LIBERATED GASES, EXPLOSION AND IMPLOSION		N
13.1	Poisonous and injurious gases		N
	Attached data/test reports demonstrate conformity		N
13.2	Explosion and implosion		N
13.2.1	Components		N
	Components liable to explode:		—
	Pressure release device provided; or		N
	Apparatus incorporates OPERATOR protection (see also 7.6)		N
	Pressure release device:		—
	Discharge without danger		N
	Cannot be obstructed		N
13.2.2	Batteries and battery charging		N
	If explosion or fire hazard could occur:		—
	Protection incorporated in the equipment; or		N
	Instructions specify batteries with built-in protection		N
	In case of wrong type of battery used:		—

Clause	Requirement-Test	Result-Remark	Verdict
	No HAZARD; or		N
	Warning by marking and within instructions		N
	Equipment with means to charge rechargeable batteries:		—
	Warning against the charging of non-rechargeable batteries; and		N
	Type of rechargeable battery indicated; or		N
	Symbol 14 used		N
	Battery compartment design	(See Form A.27)	N
	Single component failure		N
	Polarity reversal test		N
13.2.3	Implosion of cathode ray tubes		N
	If maximum face dimensions > 160 mm.....:		—
	Intrinsically protected and correctly mounted; or		N
	ENCLOSURE provides protection:		N
	If non-intrinsically protected:		—
	Screen not removable without TOOL		N
	If glass screen, not in contact with surface of tube		N
13.2.4	Equipment RATED for high pressure (See 11.7)		N

14	COMPONENTS		P
14.1	General		P
	Where safety is involved, components meet relevant requirements	(see Table list components)	P
14.2	Motors	No such motors	N
14.2.1	Motor temperatures		N
	Does not present a HAZARD when stopped or prevented from starting; or	(See Form A.20)	N
	Protected by overtemperature or thermal protection device conform with 14.3		N
14.2.2	Series excitation motors		N
	Connected direct to device, if overspeeding causes a HAZARD		N
14.3	Overtemperature protection devices		N
	Devices operating in a SINGLE FAULT CONDITION	(See Form A.28)	N
14.3a)	Reliable function is ensured	Pass muster	P
14.3b)	RATED to interrupt maximum current and voltage	Pass muster	P
14.3c)	Does not operate in NORMAL USE	Pass muster	P
14.4	Fuse holders	No such fuse	N
	No access to HAZARDOUS LIVE parts		N

Clause	Requirement-Test	Result-Remark	Verdict
14.5	Mains voltage selecting devices	Not applicable	N
	Accidental change not possible		N
14.6	HIGH INTEGRITY components	No such components	N
	Used in applicable positions (see Table 3)		N
	Conforms with IEC publications		N
	Single electronic device not used		N
14.7	Mains transformers tested outside equipment	(see Forms A.29 and A.30)	N
14.8	Printed circuit boards	The printed circuit boards approved	P
	Data shows conformity with FV-1 of IEC 60707 or better; or		P
	Test shows conformity with FV-1 of IEC 60707 or better; or	See Form A.17	P
	Thin film flexible PCB with limited-energy circuit used		P
14.9	Circuits or components used as transient overvoltage limiting devices		P
	After test, no sign of overload or degradation		P

15	PROTECTION BY INTERLOCKS		N
15.1	General		N
	Interlocks are designed to remove a hazard before OPERATOR exposed		N
15.2	Prevention of reactivation		N
15.3	Reliability		N
	Single fault unlikely to occur; or		N
	Cannot cause a HAZARD		N

16	TEST AND MEASUREMENT EQUIPMENT		N
16.1	Current measuring circuits	(see Form A.31)	N
16.2	Multifunction meters and similar equipment	(see Form A.32)	N
	No hazard from:		—
	rated input voltage combinations		N
	Settings of functions		N
	Settings of range controls		N
ANNEX F	ROUTINE TESTS		N
	Manufacturer's declaration		N

Clause	Requirement-Test	Result-Remark	Verdict
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4.4.2	TABLE: Summary of SINGLE FAULT CONDITIONS			Form A.1	-
Subclause	Title	Does not apply	Carried out	Comments	
4.4.2.1	PROTECTIVE IMPEDANCE	√			
4.4.2.2	Protective conductor		√	see Form A.8	
4.4.2.3	Equipment or parts for short-term or intermittent operation	√		Continuous operation	
4.4.2.4	Motors	√		No such motors	
4.4.2.5	Capacitors	√		No such capacitors	
4.4.2.6	Mains transformers Attach drawing of MAINS TxS showing all protective devices (see Forms A.29 and A.30)		√		
4.4.2.7	Outputs	√		No outputs	
4.4.2.8	Equipment for more than one supply	√		Only one supply	
4.4.2.9	Cooling – air holes closed – fans stopped – coolant stopped	√		No openings No fans No coolant	
4.4.2.10	Heating devices – timer overridden – temperature controller overridden – loss of cooling liquid – overfilled or empty or both	√		No such equipments	
4.4.2.11	Insulation between circuits and parts		√		
4.4.2.12	Interlocks	√		No such interlocks	
List below all SINGLE FAULT CONDITIONS not covered by 4.4.2.1 to 4.4.2.12:					
Supplementary information: (see Form A.2 for details of tests)					

Clause	Requirement-Test	Result-Remark	Verdict
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5.1.3	TABLE: Mains supply		Form A.3	P
	Marked rating	~270V		—
	Phase	Single phase		
	Frequency	50/60Hz		—
Test voltage(V)		Frequency(Hz)	Comments	
207		50	Normal operate	
230		50	Normal operate	
293		50	Normal operate	
Note: Measurements are only required for marked ratings.				

Clause	Requirement-Test	Result-Remark	Verdict
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5.3	TABLE: Durability of markings	Form A.4	P
Marking method (see NOTE)		Agent	
1) paint type		A Water	
2)		B Isopropyl alcohol	
3)		C (specify agent)	
4)		D (specify agent)	
5)		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)	paint type
Mains supply (5.1.3)	paint type
Fuses (5.1.4)	---
terminals and operating devices (5.1.5.1)	---
Measuring circuit terminals (5.1.5.2)	---
Switches and circuit breakers (5.1.6)	paint type
Double/reinforced equipment (5.1.7)	paint type
Field wiring Terminal boxes (5.1.8)	---
Warning marking (5.2)	---
Battery charging (13.2.2)	---

Method	Test agent	Remains legible	Label loose	Curled edges	Comments
		Verdict	Verdict	Verdict	
1)	A B	P	P	P	
1)	A B	P	P	P	
1)	A B	P	P	P	
1)	A B	P	P	P	

Supplementary information:

Clause	Requirement-Test	Result-Remark	Verdict
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6		TABLE: Protection against electric shock - Block diagram system Form A.5						P
Pollution degree..... :		II	Measurement category (overvoltage category).. :					
Location or	Insulation type	Maximum working Creepage Distance (NOTE 3)				Clearance (NOTE 3)	Test voltage	Comments
description	(NOTE 1)	PWB mm	CTI	Other mm	CTI	mm	(NOTE 2) V	
Different polarity	BI	---	---	7.4	---	7.4	---	---
Primary and secondary	R1	---	100	>6.0	---	>6.0	---	---
Primary and nonmetal enclosure	R1	---	100	>6.0	---	>6.0	---	---
NOTE 1 – Type of insulation: BI = Basic Insulation DI = Double Insulation PI = Protective Impedance RI = Reinforced Insulation SI = Supplementary Insulation		NOTE 2 - Types of voltage Peak impulse test voltage (pulse) r.m.s. d.c. peak			NOTE 3 - installation categories (overvoltage categories) or pollution degrees which differ from these should be shown under "Comments".			
Supplementary Information:								

6	TABLE: Values in normal condition							Form A.7					P
6.1.1	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 (see Form A.6)	Voltage			Current				Capacitance		10 s test (NOTE 2)			Comments
	V r.m.s.	V peak	V d.c.	Test circuit A1/A2/A3	mA r.m.s.	mA peak	mA d.c.	μC	mJ	V	μC	mJ	
1	230	241	---	A1	0.01	0.02		<0.1					
2	232	240.3	----	A1	0.014	0.018		<0.1					
3	231	242.6	---	A1	0.02	0.04		<0.1					
NOTE 1 – The requirements of 6.3.1 include drying out (if specified). For permanently connected equipment, the current values are 1,5 times the specified values. NOTE 2 – A 5 s test is specified in 6.10.3c).													
Supplementary information:													

6.3.2	TABLE: Values in single fault condition											Form A.8	P
Item	Subclause and	Voltage			Transient (see NOTE)		Current			Capacitance	Comments		
(See Form A.6)	fault No. (see FormA.2)	V r.m.s.	V peak	V d.c.	V	s	Test circuit A1/A2/A3	mA r.m.s.	mA peak	mA d.c.		μF (NOTE)	
--	1	238	242.3	--	--	--	A1	0.01	0.02				
--	2	242	245.5	--	--	--	A1	0.01	0.01				
--	3	210	211.2	--	--	--	A1	0.01	0.03				
NOTE – Transient voltages must be below the limits given from Figure 1 and the capacitance below the limits from figure 2 of IEC 61010-1.													
Supplementary information:													

Clause	Requirement-Test	Result-Remark	Verdict
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6.5.1.3	TABLE: Bonding impedance of plug connected equipment			Form A.10	N
accessible part under test	Test current A	Voltage attained after 1 min V	Calculated resistance (maximum allowed 0,1 Ω) Ω	Verdict	

Supplementary information:

6.5.1.4	TABLE: Bonding impedance of permanently connected equipment			N
accessible part under test	Test current A	Voltage attained after 1 min (maximum 10 V) V	Verdict	

Supplementary information:

Clause	Requirement-Test	Result-Remark	Verdict
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6.5.1.5	TABLE: Indirect bonding for measuring and test equipment	Form A.11	N	
	accessible part under test	Voltage attained s	Time for voltage to drop to allowable levels s	Verdict
	a) Voltage limiting device	—	—	—
Supplementary Information:				
	accessible part under test	Voltage applied V	Time for device to trip s	Verdict
	b) Voltage-sensitive tripping device			
Supplementary Information:				

Clause	Requirement-Test	Result-Remark	Verdict
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6.5.3	TABLE: protective impedance	Form A.12	N
A high integrity single component			
Component	Location	Comments	
A combination of components			
Component	Location	Comments	
A combination of basic insulation and a current or voltage limiting device			
Component	Location	Comments	
Supplementary information:			

6.7	TABLE: Clearances and creepage distances											Form A.13	P
8	Mechanical resistance to shock and impact												
10.5.1	Integrity of clearances and creepage distances												
Location	Measured (initial – 6.7)		Verdict	Mechanical tests (note)					Test at max.	Measured after test (if required)		Verdict	Comments
(see Form A.5)	creepage distance	clearance		Applied force	Rigidity (8.1)		Drop (8.2)		rated ambient	creepage distance	clearance		
	mm	mm		(6.7) N	Static	Dynamic	Normal	Hand-held/ Plug-in	(10.5.1)	mm	mm		
Different polarity	7.4	7.4	P	2								N	
Primary and secondary	>6.0	>6.0	P	2								N	
Primary and nonmetal enclosure	>6.0	>6.0	P	30	P	P	P	--	40	>6.0	>6.0	P	
NOTE – Refer to Form A.14 for dielectric strength tests following the above tests.													
Supplementary information:													

Clause	Requirement-Test	Result-Remark	Verdict
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6.8	TABLE: Dielectric strength tests	Form A.14	P
4.4.4.1 b)	Conformity after application of fault conditions ¹		P
6.4	Protection in normal condition		P
6.5.2	double insulation and reinforced insulation		P
6.6.1	Connections to external circuits		N
6.7.3.1 c)	clearance values – General: reduced clearances for homogeneous construction		N
6.10.2.5	Fitting of non-detachable mains supply cords ¹		N
8	Mechanical resistance to shock and impact		P
9.1 a) 2)	Eliminating or reducing the sources of ignition within the equipment		N
9.3 c)	Limited-energy circuit		N
11.2	Cleaning ¹		N
11.3	Spillage ¹		N
11.4	Overflow ¹		N
11.6	Specially protected equipment ¹		N

¹ Record the fault, test or treatment applied before the dielectric strength test

Test site altitude	m	—
Test voltage correction factor (see Table 10).....		—

Location or references from Forms A.2 and A.5	Clause or sub-clause	Humidity Yes/No	Working voltage V	Test voltage r.m.s./peak/d. cV	Comments	Verdict
Different polarity	4.4.4.1 b); 6.4; 6.5.2; 8;	Yes Except for 8	<250	1500	No breakdown;	P
Mains and accessible parts	4.4.4.1 b); 6.4; 6.5.2; 8;	Yes Except for 8	<250	2500	No breakdown;	P
Mains and non-metal Enclosure	4.4.4.1 b); 6.4; 6.5.2; 8;	Yes Except for 8	<250	2500	No breakdown;	P

Supplementary information:

Clause	Requirement-Test	Result-Remark	Verdict
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9.2.1	TABLE: Constructional requirements			Form A.17	N
14.8	Printed circuit boards				
Material tested..... :					
					—
Generic name..... :					
					—
Material manufacturer..... :					
					—
Type..... :					
					—
Colour..... :					
					—
Conditioning details..... :					
					—
		Sample 1	Sample 2	Sample 3	
Thickness of specimen	mm				
Duration of flaming after first Application	s				
Duration of flaming plus glowing After second application	s				
Specimen burns to holding clamp	Yes/No				
Cotton ignited	Yes/No				
Sample result	Pass/Fail				
Supplementary information:					

Clause	Requirement-Test	Result-Remark	Verdict
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10	TABLE: temperature rise measurements		Form A.20A	P
	Voltage	~270V		—
	Test voltage	293V		
	Frequency	50Hz		—
	Ambient temperature	22°C		
Monitored point:		dT (K)	Permitted dT (K)	
enclosure		8.1	-	
Screen		5.3	80	

Clause	Requirement-Test	Result-Remark	Verdict
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10.5.3	TABLE: Insulating Materials		Form A.22	P
10.5.3a)	Ballpressure test			P
	Max. allowed impression diameter	2 mm		—
Part	Test temperature °C	Impression Diameter (mm)	Verdict	
enclosure	125	0.75	P	

Supplementary information:

10.5.3b)	Vicat softening test (ISO 306)			N
Part	Vicat softening temperature °C	Thickness of sample (mm)	Verdict	

Supplementary information:

8	TABLE: Mechanical resistance to shock and impact										Form A.23	P
11	Protection against hazards from fluids										P	
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.5)	Static	Dynamic	Normal	Handheld Plug-in	Cleaning (11.2)	Spillage (11.3)	Overflow (11.4)	IEC 60529 (11.6)	Working voltage V	Test voltage V	Verdict	Comments
Bottom enclosure	√	√							<250	2500	P	
Top enclosure	√	√							<250	2500	P	
Sides of enclosure	√	√							<250	2500	P	
NOTE – Use r.m.s., d.c. or peak to indicate the used test voltage.												
Supplementary information:												

Clause	Requirement-Test	Result-Remark	Verdict
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11.7.2	TABLE: Leakage and rupture at high pressure				Form A.24	N
Part	Maximum permissible working pressure Mpa	Test pressure MPa	Leakage YES / NO	Burst YES / NO	Comments	

Supplementary information:

11.7.3	Leakage from low-pressure parts			N
Part	Test pressure Mpa	Leakage YES / NO	Comments	

Supplementary information:

Clause	Requirement-Test	Result-Remark	Verdict
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12.5.1	TABLE: Sound level		Form A.26	N
Locations tested		Measured values dBA	Calculated maximum sound pressure level	
At operator's normal position and at bystanders' positions				
a)				
b)				
c)				
d)				
e)				
Supplementary information:				
12.5.2	Ultrasonic pressure			N
Locations tested		Measured values		Comments
		dB	kHz	
At operator's normal position				
At 1 m from the enclosure				
a)				
b)				
c)				
d)				
e)				
NOTE – No limit is specified at present, but a limit of 110 dB above the reference pressure value of 20 µPa is under consideration for applicable frequencies between 20 kHz and 100 kHz.				
Supplementary information:				

Clause	Requirement-Test	Result-Remark	Verdict
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13.2.2	TABLE: Batteries	Form A.27	N
	Battery load and charging circuit diagram:		
	Battery type.....:		—
	Battery manufacturer/model/catalogue No.....:		—
	Battery ratings		—
	Reverse polarity instalment test		
Single component failures		Verdict	
Component	Open circuit	Short circuit	
Supplementary information:			

Clause	Requirement-Test	Result-Remark	Verdict
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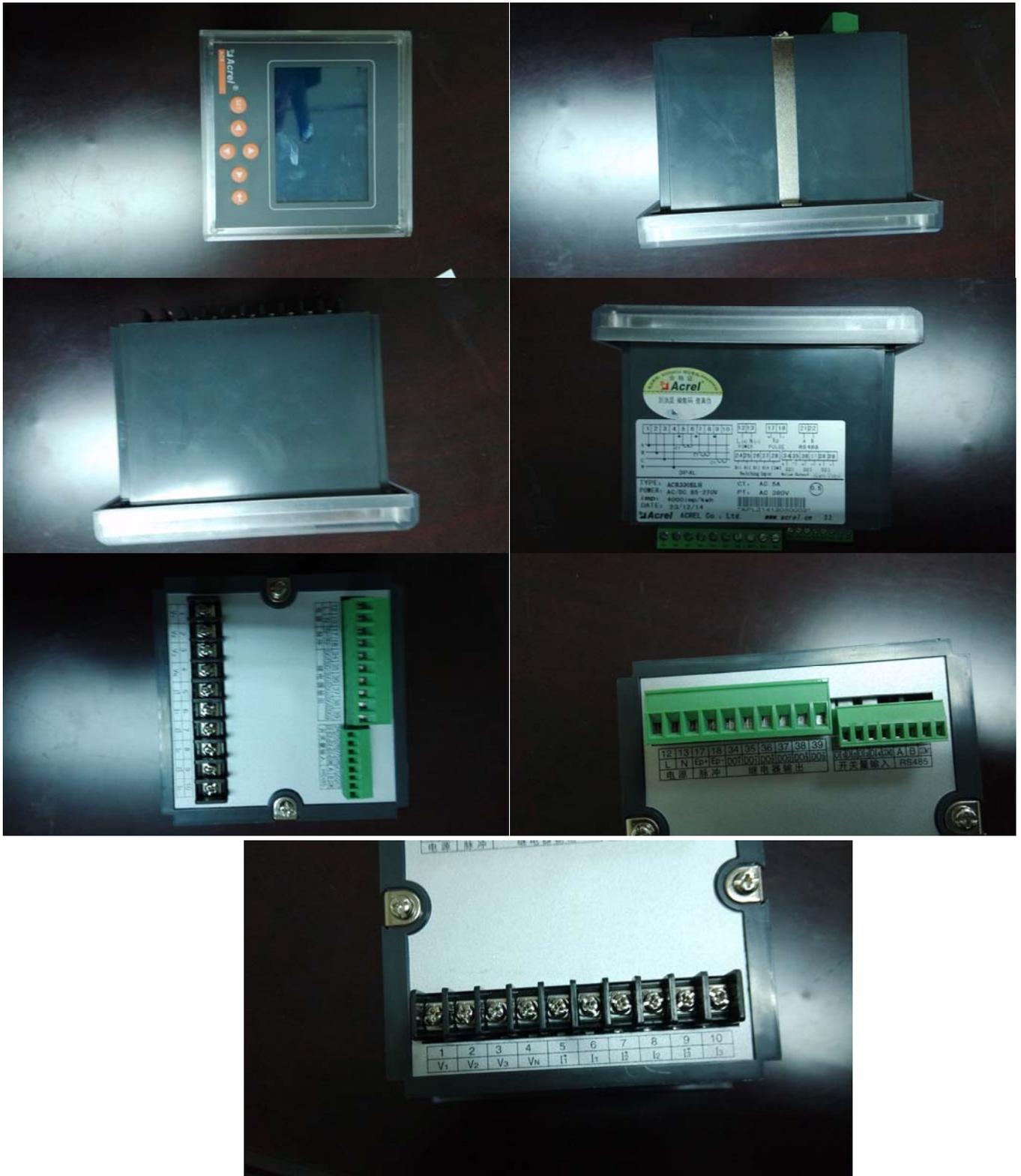
4.4.2.6	TABLE: Mains transformer		Form A.29	N
4.4.2.6.1	Short circuit			
14.7.1	Mains transformers tested outside equipment			
Type				—
Manufacturer				—
Test in equipment				
Test on bench				
Test repeated inside equipment (see 14.7)				
Optional – Insulation class (IEC 60085) of the lowest rated winding				—
Winding identification				
Type of Protector for winding (Note 1)				
Elapsed time				
Current, A	primary			
	secondary			
Winding temperature, °C	primary			
(see Note 2)	secondary			
Tissue paper / cheesecloth OK ? (Pass / Fail)				
Voltage tests (see Note 3)				
primary to secondary	_____ V _____			
primary to core	_____ V _____			
secondary to secondary	_____ V _____			
secondary to core	_____ V _____			
Verdict				
Note 1:	Primary fuse	- PF / () A		
	Secondary fuse	- SF / () A		
	Overtemperature protection	- OP / () °C		
	Impedance protection	- Z		
Note 2:	Indicate method of measurement	TC = with thermocouple R = resistance method		
	If resistance method is used, record resistance in cold and warm condition in FormA.20B!			
Note 3:	Record the voltage applied and the type of voltage (r.m.s. / d.c. / peak) and for results use NB = no breakdown or B = breakdown			
Supplementary information:				

Clause	Requirement-Test	Result-Remark	Verdict
4.4.2.6	TABLE: Mains transformer	Form A.30	N
14.7.2	Overload tests (for mains transformers)		
Type			—
Manufacturer			—
Test in equipment			
Test on bench			
Test repeated inside equipment (see 14.7)			
Optional – Insulation class (IEC 60085) of the lowest rated winding			—
Winding identification			
Type of Protector for winding (Note 1)			
Elapsed time			
Current, A	primary		
	secondary		
Winding temperature, °C	primary		
(see Note 2)	secondary		
Tissue paper / cheesecloth OK ? (Pass / Fail)			
Voltage tests (see Note 3)			
primary to secondary	_____ V _____		
primary to core	_____ V _____		
secondary to secondary	_____ V _____		
secondary to core	_____ V _____		
Verdict			
Note 1:	Primary fuse	- PF / () A	
	Secondary fuse	- SF / () A	
	Overtemperature protection	- OP / () °C	
	Impedance protection	- Z	
Note 2:	Indicate method of measurement	TC = with thermocouple R = resistance method	
	If resistance method is used, record resistance in cold and warm condition in FormA.20B!		
Note 3:	Record the voltage applied and the type of voltage (r.m.s. / d.c. / peak) and for results use NB = no breakdown or B = breakdown		
Supplementary information:			

Clause	Requirement-Test	Result-Remark	Verdict
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16.1	TABLE: Current measuring circuits				Form A.31	N
These tests are performed with all types and models of current transformers without internal protection, and which are specified by the manufacturer for use with the equipment						
a) Current transformers						
Type/Model	rated current A	Test current A	Interrupt Yes / No	Verdict	Comments	
Supplementary information:						
b) Range changing switches						
Type / Model	Maximum rated current of switch A		Cycling test Verdict	Comments		
Supplementary information:						

Photos of the sample



Notice

1. This test report shall be invalidation without the cachet of the testing laboratory.
2. This copied report shall be invalidation without sealed the cachet of the testing laboratory.
3. This report shall be invalidation without tester signature, reviewer signature and approver signature.
4. This altered report shall be invalidation.
5. Client shall put forward demurrer within 15days after received report. The testing laboratory shall refuse disposal if exceeded the time limit.
6. The test results presented in this report relate only to the object tested.

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