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TEST REPORT
EN 61010-1
Safety requirements for electrical equipment for measurement, control, and laboratory use
Part 1: General requirements
EN IEC 61010-2-032
Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use – Part 2-032: Particular Requirements for Hand-Held and Hand-Manipulated Current Sensors for Electrical Test and Measurement

Report Number. .....:	230413112GZU-002
Date of issue .....:	28 Aug 2023 Modification 1: 13 Sep 2023
Total number of pages.....:	78
Name of Testing Laboratory preparing the Report.....:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Applicant's name .....:	Uni-Trend Technology(China) Co., Ltd
Address .....:	No. 6, Gong Ye Bei 1st Road, Songshan Lake National High-Tech Industrial Development Zone, DONGGUAN CITY Guangdong Province 523808, China
Test specification:	
Standard.....:	EN 61010-1:2010 +A1:2019 & EN IEC 61010-2-032: 2021 +A11:2021
Test procedure .....:	LVD
Non-standard test method .....:	N/A
Test Report Form No. .....:	TTRF_ENIEC61010_2_032_2021
Test Report Form(s) Originator ....:	Copyright © 2021 Intertek
Master TRF.....:	2021-12

General disclaimer:

Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.
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Test item description..... :	Mini Clamp Meter
Trade Mark..... :	UNI-T, EXTECH
Manufacturer ..... :	Same as applicant
Model/Type reference..... :	UT210A, UT210B, UT210E, UT210C, UT210D, MA130, UT210E PRO
Ratings..... :	Measurement category: CAT III 300V, CAT II 600V Battery supply: 2 x 1.5V, AAA battery

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**Testing Laboratory:**	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch	
Testing location/ address ..... :		Room101/301/401/102/202/302/402/502/602/702/802, No. 7-2, Caipin Road, Huangpu District, Guangzhou, Guangdong, China	
Tested by (name, function, signature)..... :		Eric Deng, Engineer	
Approved by (name, function, signature) .. :		Justin He, Manager	
☐	**Testing procedure: CTF Stage 1:**	N/A	
Testing location/ address ..... :			
Tested by (name, function, signature)..... :			
Approved by (name, function, signature) .. :			
☐	**Testing procedure: CTF Stage 2:**	N/A	
Testing location/ address ..... :			
Tested by (name + signature)..... :			
Witnessed by (name, function, signature) . :			
Approved by (name, function, signature) .. :			

List of Attachments (including a total number of pages in each attachment)		
Document No.	Documents included / attached to this report (description)	Page No.
Appendix 1	Product photos	11

Documents referenced by this report (available on request):		
Document Name or No.	Documents description	Page No.
None		

Summary of testing:

The equipment under test complied with EN 61010-1:2010 +A1:2019, EN IEC 61010-2-032: 2021 +A11:2021.

Clause	Comment
All applicable clauses performed	Pass

Tests performed (name of test and test clause):	**Testing location:**
All applicable clauses performed	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch Room101/301/401/102/202/302/402/502/602/702/802, No. 7-2, Caipin Road, Huangpu District, Guangzhou, Guangdong, China

Summary of compliance

None.

☒ **The product fulfils the requirements of** EN 61010-1:2010 +A1:2019, EN IEC 61010-2-032: 2021 +A11:2021.

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

(may be required by the product standard or client)

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

Procedure number, issue date and title:

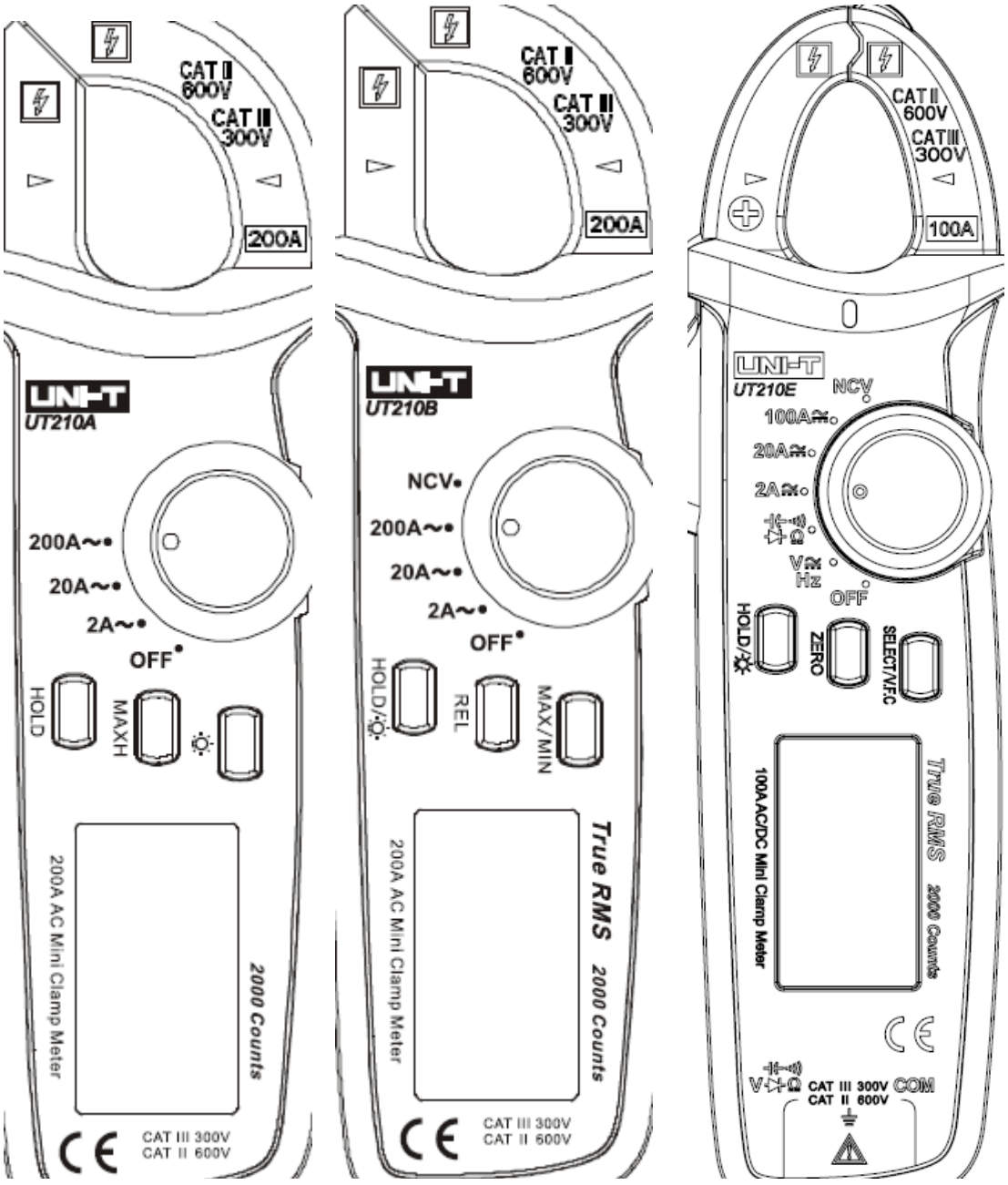
Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

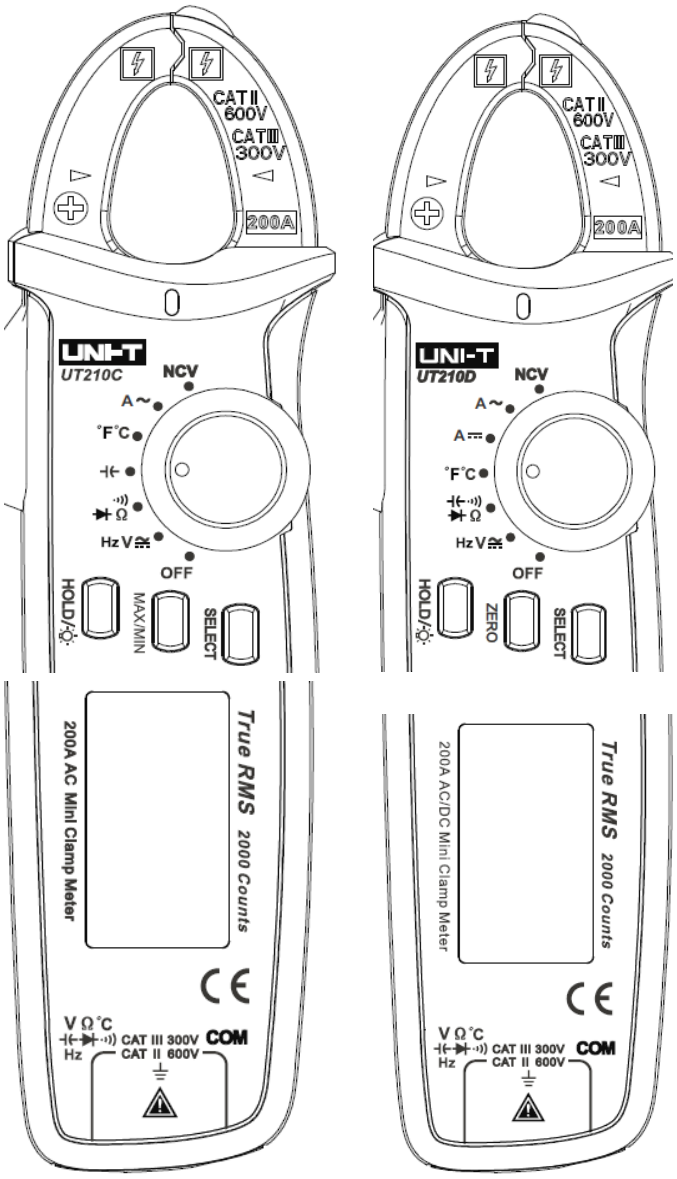
☒ **Statement not required by the standard used for type testing.**

Copy of marking plate:

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

Marking on the front panel.





2. Marking on the rear of enclosure.

Remark: All models in this report have the same marking on the rear of enclosure shown abo
ve.

Test item particulars:	
Type of item ..... :	Measurement
Description of equipment function..... :	Measurement function of UT210A: AC current Measurement function of UT210B: AC current and NCV Measurement function of UT210E: AC/DC current, Voltage, Capacitor, Resistance, Continuity and NCV Measurement function of UT210C: AC current, Voltage, Capacitor, Resistance, Continuity, Diode, frequency and NCV Measurement function of UT210D: AC/DC current, Voltage, Capacitor, Resistance, Continuity, Diode, frequency and NCV
Connection to MAINS supply ..... :	Battery operated
Overvoltage category ..... :	Battery operated
Measurement category……..:	CAT III 300V, CAT II 600V
POLLUTION DEGREE..... :	2
Means of protection..... :	Class II (isolated)
Environmental conditions ..... :	0-40℃
For use in wet locations..... :	No
Equipment mobility..... :	Hand-held
Operating conditions..... :	Continuous
Overall size of equipment (W x D x H)..... :	Approximate: 158 x 60 x 33.5mm
Mass of equipment (kg)..... :	0.17 (Including battery)
Marked degree of protection to IEC 60529 ..... :	N/A
Accessories and detachable parts included in the evaluation..... :	N/A
Options ..... :	N/A
Possible test case verdicts:	
- Test case does not apply to the test object .....:	N/A (Not Applicable)
- Test object does meet the requirement.....:	P (Pass)
- Test object does not meet the requirement .....:	F (Fail)
Testing:	
Date of receipt of test item.....:	13 Apr 2023
Date (s) of performance of tests .....:	13 Apr 2023 – 28 Aug 2023

General remarks:

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

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

This report is based on and superseded original report 201203177GZU-001, dated on 09 Dec 2020, with below modified information:

1. Updated standard vision from “EN 61010-2-032:2012” to “EN IEC 61010-2-032: 2021 +A11:2021”.
2. Deleted standard “EN 61010-2-033:2012” due to it is covered with “EN IEC 61010-2-032: 2021+A11:2021”.
3. Deleted varistor “07D56K (LIEN SHUN ELECTRONICS CO LTD)”.
4. Added two new varistor “07D561K (SHENZHEN YUHE ELECTRONIC CO LTD)” and “07D561K (DONG GUAN CITY JIANKUN ELECTRONICS TECHNOLOGY CO LTD)”.
5. Changed enclosure model name from “AF-312” to “AF312A”.
6. Updated Photo 9,10,17~20 due to IC is changed.
7. Additional test “Protection against MAINS overvoltages(clause 101.4)”, “Battery level(clause EE.5.2)”, ”Over-range voltages(clause EE.5.3)”, “Permanent overvoltages(clause EE.5.4)” performed for above changes.

Modification 1(13 Sep 2023):

This report is based on and superseded original report 230413112GZU-002, dated on 28 Aug 2023, with below modified information:

1. Updated photo 1 due to marking is changed, no additional test required.

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

General product information and other remarks:
Products covered by this report are general clamp meters for use.

Description of model differences:

Compared with UT210A and UT210B, UT210E has an additional pair of measurement terminals on the bottom of product.

UT210C, UT210D and UT210E are the same in the construction of enclosure, similar in circuit schematics, PCB layout, except for measurement functions and supplementary function specified in following table.
UT210E PRO, The model UT210E PRO same as UT210E except colour of enclosure for marketing channel.
Model different shown as follows:

Type No. / Features	UT210A	UT210B	UT210E	UT210C	UT210D
Count number	2000	2000	2000	2000	2000
RANGE change	Auto	Auto	Auto	Auto	Auto
Safety	CAT III 300V CAT II 600V	CAT III 300V CAT II 600V	CAT III 300V CAT II 600V	CAT III 300V CAT II 600V	CAT III 300V CAT II 600V
Voltage measure	X	X	O	O	O
Voltage True RMS	X	X	O	O	O
Clamp Meter AC	O	O	O	O	O
Clamp Meter DC	X	X	O	X	O
Capacitor measure	X	X	O	O	O
Resistance measure	X	X	O	O	O
Continuity check	X	X	O	O	O
Temperature measure	X	X	X	O	O
Hz Measure	X	X	X	O	O
MAX/MIN mode	X	O	X	O	X
MAXH mode	O	X	X	X	X
HOLD mode	O	O	O	O	O
REL/ZERO mode	X	O	O	X	O
NCV	X	O	O	O	O
Sleep mode	O	O	O	O	O
Back light	O	O	O	O	O
Low battery detect	O	O	O	O	O
Display driver	LCD	LCD	LCD	LCD	LCD
Power supply	AAA 1.5Vx2	AAA 1.5Vx2	AAA 1.5Vx2	AAA 1.5Vx2	AAA 1.5Vx2

Note:
Symbol ‘O’ means that product contains this function. ‘X’ means that product does not contain this function.

Description of special features:
None

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
4	**TESTS**		P
4.4	Testing in SINGLE FAULT CONDITIONS		P
4.4.1	Fault tests		P
4.4.2	Application of SINGLE FAULT CONDITIONS		P
4.4.2.1	SINGLE FAULT CONDITIONS not covered by 4.4.2.2 to 4.4.2.14		P
4.4.2.2	PROTECTIVE IMPEDANCE	No protective impedance	N/A
4.4.2.3	PROTECTIVE CONDUCTOR	No protective conductor	N/A
4.4.2.4	Equipment or parts for short-term or intermittent operation	Continuous working	N/A
4.4.2.5	Motors	No motors	—
	– stopped while fully energized		N/A
	– prevented from starting		N/A
	– one phase interrupted (multi-phase)		N/A
4.4.2.6	Capacitors	No capacitors	N/A
4.4.2.7	MAINS transformers	No mains transformer	N/A
4.4.2.7.2	Short circuit		N/A
4.4.2.7.3	Overload		N/A
4.4.2.8	Outputs	No outputs	N/A
	Outputs were short-circuited or open-circuited, one at a time		N/A
4.4.2.9	Equipment for more than one supply	One supply	N/A
4.4.2.10	Cooling	No cooling	—
	– air holes closed		N/A
	– fans stopped		N/A
	– coolant stopped		N/A
	– loss of cooling liquid		N/A
4.4.2.11	Heating devices	No heating devices	—
	– timer overridden		N/A
	– temperature controller overridden		N/A
4.4.2.12	Insulation between circuits and parts		N/A
4.4.2.13	Interlocks	No such part	N/A
4.4.2.14	Voltage selectors	No such part	N/A
4.4.3	Duration of tests		—
4.4.4	Conformity after application of fault conditions		P
5	**MARKING AND DOCUMENTATION**		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
5.1	**Marking**		P
5.1.1	General		P
	Required equipment markings		—
	– Visible from the exterior; or		P
	– Visible after removing cover or opening door	No such part	N/A
	– Visible after removal from a rack or panel	No such part	N/A
	Not put on parts which can be removed by an operator	No such part	N/A
	Letter symbols (IEC 60027) used		P
	Graphic symbols of Table 1 used		P
5.1.2	Identification		P
	Equipment is identified by:		—
	a) Manufacturer's or supplier's name or trademark		P
	b) Model number, name or other means		P
	Manufacturing location identified	Only one location	N/A
	aa) Current sensors designed for specific equipment are clearly indicated or		N/A
	information provided only in documentation, current sensor marked with symbol 14		N/A
	bb) Type A CURRENT SENSOR marked with symbol 102	Type A	N/A
	cc) Type B and Type C CURRENT SENSORS marked with symbol 101	Type A	N/A
	dd) Type D CURRENT SENSORS, marked with symbol 101 and symbol 14	Type A	N/A
	The symbol above is adjacent to JAWS or to the relevant CAT marking for the JAWS	CAT III 300V, CAT II 600V	P
5.1.3	MAINS supply	Powered by battery	N/A
	Equipment is marked as follows:		—
	a) Nature of supply:		—
	1) a.c. RATED MAINS frequency or range of frequencies .....:		—
	2) d.c. with symbol 1 .....:		—
	b) RATED supply voltage(s) or range .....:		—
	c) Max. RATED power (W or VA) or input current.....:		—
	The marked value not less than 90 % of the maximum value		N/A
	If more than one voltage range:		—
	Separate values marked; or		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	Values differ by less than 20 %		N/A
	d) OPERATOR-set for different RATED supply voltages:		—
	Indicates the equipment set voltage		N/A
	PORTABLE EQUIPMENT indication is visible from the exterior		N/A
	Changing the setting changes the indication		N/A
	e) Accessory MAINS socket-outlets accepting standard MAINS plugs are marked:		—
	With the voltage if it is different from the MAINS supply voltage ..... :		—
	For use only with specific equipment		N/A
	If not marked for specific equipment it is marked with:		—
	The maximum RATED current or power; or		N/A
	Symbol 14 with full details in the documentation		N/A
5.1.4	Fuses	No fuse used	N/A
	OPERATOR replaceable fuse marking (see also 5.4.5) ..... :		—
5.1.5	TERMINALS, connections and operating devices		P
5.1.5.1	General		P
	Where necessary for safety, indication of purpose of TERMINALS, connectors, controls and indicators marked		P
	If insufficient space, symbol 14 used		P
	Push-buttons and actuators of emergency stop devices and indicators:	No such devices	—
	– 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):		—
	– to safety of persons; or		N/A
	– safety of the environment		N/A
5.1.5.2	TERMINALS		—
	MAINS supply TERMINAL identified	Powered by battery	N/A
	Other TERMINAL marking:		—
	a) FUNCTIONAL EARTH TERMINALS marked with symbol 5	No such terminal	N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	b) PROTECTIVE CONDUCTOR TERMINALS:	No such terminal	—
	Symbol 6 is placed close to or on the TERMINAL; or		N/A
	Part of appliance inlet		N/A
	c) TERMINALS of circuits (symbol 7 used)	No such terminal	N/A
	d) HAZARDOUS LIVE TERMINALS supplied from the interior	No such terminal	N/A
	Standard MAINS socket outlet used; or		N/A
	RATINGS marked; or		N/A
	Symbol 14 used		N/A
5.1.5.101	*Measuring circuit TERMINALS*		P
5.1.5.101.1	*General*		P
	Except as permitted in 5.1.5.101.4:		—
	a) RATED voltage to earth of measuring circuit TERMINALS :	600V	P
	c) *RATED voltage or current of each pair or set of measuring circuit TERMINALS that are intended to be used together.....:*		P
	d) *pertinent MEASUREMENT CATEGORY for each individual, pair, or set of measuring circuit TERMINALS or symbol 14.....:*		P
	Markings are clear to avoid misunderstanding		P
	Marking placed adjacent to TERMINALS, in case of insufficient space, marking is placed on the rating plate, or symbol 14 used	adjacent to TERMINALS	P
5.1.5.101.2	*Measuring circuit TERMINALS rated for MEASUREMENT CATEGORIES*		P
	Relevant MEASUREMENT CATEGORY marked .....:	CAT III, CAT II	P
	Rated voltage to earth ..... :	600V	P
5.1.5.101.3	*Measuring circuit TERMINALS RATED for connection to voltages above the levels of 6.3.1*	Rated for CAT III 300V, CAT II 600V	N/A
	TERMINALS marked with symbol 14		N/A
5.1.5.101.4	*Measuring circuit TERMINALS which are permanently connected, dedicated or for non- HAZARDOUS LIVE voltages*	Not permanently connected, dedicated or for non-HAZARDOUS LIVE voltages	N/A
	Measuring circuit TERMINALS do not need to be marked if:		—
	a)they are intended to be permanently connected and not ACCESSIBLE, or		N/A
	b)they are dedicated only for connection to specific TERMINALS of other equipment, or		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	c)it is obvious from other indications that the RATED voltage is below the levels of 6.3.1		N/A
5.1.5.102	*Voltage and current RATINGS of JAWS*		P
	Marked with the value of the RATED voltage to earth of the JAWS .....:	600V	P
	Type A, Type B or Type C marked with the relevant MEASUREMENT CATEGORY adjacent to the voltage to earth marking .....:	CAT III 300V, CAT II 600V	P
	JAWS and output circuit TERMINALS of Type D current sensors not marked with any MEASUREMENT CATEGORY	Type A	N/A
	Marked with the value of the RATED current on or close to the JAWS.....:	200A	P
	Nature of the current marked unless the marked value applies to both a.c. and d.c. .....:		P
5.1.6	Switches and circuit-breakers	No switches and circuit breakers	N/A
	If disconnecting device, off position clearly marked		N/A
	If push-button used as power supply switch:		—
	– Symbol 9 and 15 used for on-position		N/A
	– Symbol 10 and 16 used for off-position		N/A
	– Pair of symbols 9, 15 and 10, 16 close together		N/A
5.1.7	Equipment protected by DOUBLE INSULATION or REINFORCED INSULATION		P
	Protected throughout (symbol 11 used)	On rear marking panel	P
	Only partially protected (symbol 11 not used)		N/A
5.1.8	Field-wiring TERMINAL boxes	No Field-wiring TERMINAL boxes	N/A
	If TERMINAL or ENCLOSURE exceeds 60 °C:		—
	Cable temperature RATING marked.....:		—
	Marking visible before and during connection or beside TERMINAL		N/A
5.2	**Warning markings**		P
	Visible when ready for NORMAL USE		P
	Are near or on applicable parts		P
	Symbols and text correct dimensions and colour:		—
	a) Symbols min 2,75 mm and text 1,5 mm high and contrasting in colour with background		P
	b) Symbols and text moulded, stamped or engraved in material min. 2,0 mm high and		P
	0,5 mm depth or raised if not contrasting in colour		P
	If necessary marked with symbol 14, or	On rear battery cover	P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	Additional symbols such as symbol 12, 13 or 17 used to indicate the nature of HAZARD	Symbol 12 marked on rear panel	P
	Statement to place equipment in a safe state before access by using a tool to HAZARDOUS parts is permitted	On rear battery cover	P
5.3	**Durability of markings**		P
	The required markings remain clear and legible in NORMAL USE		P
5.4	**Documentation**		P
5.4.1	General		P
	Equipment is accompanied by documentation for safety purposes for OPERATOR or RESPONSIBLE BODY		P
	Safety documentation for service personnel authorized by the manufacturer		P
	Documentation necessary for safe operation is provided in printed media or		P
	in electronic media if available at any time	Printed media	N/A
	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)	No such risks	N/A
	f) Accessories for safe operation of the equipment specified	No such parts	N/A
	g) Guidance provided to check correct function of the equipment, if incorrect reading may cause a HAZARD from harmful or corrosive substances of HAZARDOUS live parts	Unambiguous reading Specified in the operation manual	P
	h) Instructions for lifting and carrying	Hand-held equipment	N/A
	Warning statements and a clear explanation of warning symbols:		—
	– provided in the documentation; or		P
	– information is marked on the equipment		N/A
	aa) information about each relevant MEASUREMENT CATEGORY		P
	bb) if measuring circuits not RATED for MEASUREMENT CATEGORIES, a warning note that current sensor not to be used for measurements on MAINS and detailed rating including TRANSIENT OVERVOLTAGES	Rated for CAT III 300V, CAT II 600V	N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	Documentation identify clearly the MEASUREMENT CATEGORIES where the current sensor is intended to be used and where not		P
5.4.2	Equipment RATINGS		P
	Documentation includes:		—
	a) Supply voltage or voltage range .....:	2 x 1.5V AAA batteries	—
	Frequency or frequency range .....:	DC	—
	Power or current rating .....:		—
	b) Description of all input and output connections in accordance to 6.6.1 a)		P
	c) RATING of insulation of external circuits in accordance to 6.6.1 b)		N/A
	d) Statement of the range of environmental conditions (refer to 1.4):		—
	1) indoor or outdoor use,	Indoor used	P
	2) altitude,	Up to 2000m	P
	3) temperature,		P
	4) relative humidity,		P
	5) MAINS supply voltage fluctuations,	Battery supply	N/A
	6) OVERVOLTAGE CATEGORY,		N/A
	7) WET LOCATION, if applicable,	Not used in wet location	N/A
	8) POLLUTION DEGREE of the intended environment	2	P
	e) Degree of ingress protection (IEC 60529)		N/A
	f) If impact rating less than 5 J:	Hand-held equipment, no such requirement	—
	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
	aa) information about each relevant MEASUREMENT CATEGORY		P
	bb) warning not to use Type A, Type B and Type C for measurements on MAINS, when not RATED for MEASUREMENT CATEGORIES, and	Rated for CAT III 300V, CAT II 600V	N/A
	detailed RATING including TRANSIENT OVERVOLTAGES		N/A
	Documentation clearly identified the MEASUREMENT CATEGORIES where the current sensor is intended to be used and where not	CAT III 300V, CAT II 600V	P
5.4.3	Equipment installation	Hand-held equipment, no such requirement	N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	Documentation includes instructions for:		—
	a) Assembly, location and mounting requirements		N/A
	b) Instructions for protective earthing		N/A
	c) Connections to supply		N/A
	d) PERMANENTLY CONNECTED EQUIPMENT:		—
	1) Supply wiring requirements		N/A
	2) If external switch or circuit-breaker, requirements and location recommendation		N/A
	e) Ventilation requirements		N/A
	f) Safety characteristics for special external services (e. g. maximum and minimum temperature, pressure, flow of air, cooling liquid)		N/A
	g) Instructions relating to sound level		N/A
	aa) measuring circuit TERMINALS intended for permanent connection and RATED for MEASUREMENT CATEGORIES, information regarding the:		—
	MEASUREMENT CATEGORY :		N/A
	RATED voltages :		N/A
	RATED currents :		N/A
	bb) measuring circuit TERMINALS intended for permanent connection and that are not RATED for MEASUREMENT CATEGORIES, information regarding the:		—
	RATED voltages :		N/A
	RATED currents :		N/A
	RATED TRANSIENT OVERVOLTAGES :		N/A
5.4.4	Equipment operation		P
	Instructions for use include:		—
	a) identification and description of operating controls and their use in all operating modes		P
	b) clear identification of specific model of equipment to be connected to	Not such current sensor	N/A
	c) limits of intermittent operation	Continuous working	N/A
	d) specifications of limits of the current versus the frequency		P
	e) explanations of symbols related to safety used		P
	f) instructions for interconnection to accessories and other equipment	No such interconnection	N/A
	g) instructions for replacement of consumable materials	Battery	P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	h) instructions for cleaning and decontamination	Not mentioned	N/A
	i) instructions for the application and removal of the current sensor		P
	j) Type B current sensors: Instructions to de-energise the installation on which the current is measured	Type A	N/A
	instructions to adopt safe operating procedures when working on HAZARDOUS LIVE installations		N/A
	k) Type C current sensors: Instructions to de-energise the installation on which the current is measured	Type A	N/A
	l) Instructions about the function of the PROTECTIVE BARRIER		P
	limit of safe access of the HAND-HELD part		P
	m) warning to the OPERATOR that Type D current sensors are only for use around insulated conductors or limited energy circuit conductors	Type A	N/A
	n) warning to the OPERATOR of individual protective equipment use		N/A
	o) warning to the OPERATOR not to use a flexible current sensor if the wear indicator of the flexible cord used for the JAW of the flexible current sensor is visible	No flexible current sensor	N/A
	p) warning to the OPERATOR not to use a current sensor if the wear indicator in the JAW END is visible	No wear indicator	N/A
	q) warning to the OPERATOR not to use a current sensor above its RATED frequency		P
	Statement if the current sensor is used in a manner not specified by the manufacturer, the protection provided by the current sensor may be impaired.		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:		—
	Instruction against the use of detachable MAINS supply cord with inadequate RATING	No detachable MAINS supply cord	N/A
	Specific battery type of user replaceable batteries	AAA battery	P
	Any manufacturer specified parts	No specified parts	N/A
	RATING and characteristics of fuses	No fuse	N/A
	Instructions include following subjects permitting safe servicing and continued safety:		—
	a) Product specific RISKS may affect service personnel		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
	Aspects described in documentation		N/A
6	**PROTECTION AGAINST ELECTRIC SHOCK**		P
6.1	**General**		P
6.1.1	Requirements		P
	Protection against electric shock maintained in NORMAL CONDITION and SINGLE FAULT CONDITION		P
	ACCESSIBLE parts not HAZARDOUS LIVE		P
	Voltage, current, charge or energy below the limits in NORMAL CONDITION and in SINGLE FAULT CONDITION between:		—
	ACCESSIBLE parts and earth		P
	two ACCESSIBLE parts on same piece of the equipment within a distance of 1,8 m		P
	Conformity is checked by the determination of 6.2 and 6.3 followed by the tests of 6.4 to 6.11		P
6.1.2	Exceptions		P
	Following HAZARDOUS LIVE parts may be ACCESSIBLE to an OPERATOR:		—
	a) parts of lamps and lamp sockets after lamp removal	No such parts	N/A
	b) parts to be replaced by OPERATOR only by the use of tool and warning marking	A warning marking on battery cover	P
	Those parts not HAZARDOUS LIVE 10 s after interruption of supply		N/A
	Capacitance test if charge is received from internal capacitor		N/A
	aa) conductive parts of a JAW END meet the requirements of 6.9.101		P
6.2	**Determination of ACCESSIBLE parts**		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 openings	N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	– test pin with length of 100 mm and 4 mm in diameter applied		N/A
6.2.4	Openings for pre-set controls	No pre-set controls	N/A
	– test pin with length of 100 mm and 3 mm in diameter applied		N/A
6.3	**Limit values for ACCESSIBLE parts**		P
6.3.1	Levels in NORMAL CONDITION		P
	a) Voltage limits less than 30 V r.m.s. and 42,4 V peak or 60 V d.c.		N/A
	for WET LOCATIONS voltage limits less than 16 V r.m.s. and 22,6 V peak or 35 V d.c.	Not used in wet location	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		P
	for WET LOCATIONS measuring circuit A.4 used	Not used in wet location	N/A
	70 mA r.m.s. when measured with circuit A.3 for higher frequencies		P
	c) Levels of capacitive charge or energy less:		—
	1) 45 µC for voltages up to 15 kV peak or d.c. or line A of Figure 3		N/A
	2) 350 mJ stored energy for voltages above 15 kV peak or d.c.		N/A
6.3.2	Levels in SINGLE FAULT CONDITION		P
	a) Voltage limits less than 50 V r.m.s. and 70 V peak or 120 V d.c.		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		P
	for WET LOCATIONS measuring circuit A.4 used	Not used in wet location	P
	500 mA r.m.s. when measured with circuit A.3 for higher frequencies		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	General		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	ACCESSIBLE parts prevented from being HAZARDOUS LIVE by one or more of following means:		—
	a) ENCLOSURES or PROTECTIVE BARRIERS (see 6.4.2)		P
	b) BASIC INSULATION (see 6.4.3)		P
	c) Impedance (see 6.4.4)	No impedance	N/A
6.4.2	ENCLOSURES or PROTECTIVE BARRIERS		P
	– meet rigidity requirements of 8.1		P
	– meet requirements for BASIC INSULATION, if protection is provided by insulation		P
	– meet requirements of 6.7 for CREEPAGE and – CLEARANCES between ACCESSIBLE parts and – HAZARDOUS live parts, if protection is provided by – limited access		P
6.4.3	BASIC INSULATION		P
	– meet CLEARANCE, CREEPAGE DISTANCE and solid insulation requirements of 6.7		P
6.4.4	Impedance	No impedance	N/A
	Impedance used as primary means of protection meets all the following requirements:		—
	a) limits current or voltage to level of 6.3.2		N/A
	b) RATED for maximum WORKING VOLTAGE and the amount of power it will dissipate		N/A
	c) CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of BASIC INSULATION of 6.7		N/A
6.5	**Additional means of protection in case of SINGLE FAULT CONDITION**		P
6.5.1	General		P
	ACCESSIBLE parts are prevented from becoming HAZARDOUS live by the primary means of protection and supplemented by one of:		—
	a) PROTECTIVE BONDING (see 6.5.2)	No PROTECTIVE BONDING	N/A
	b) SUPPLEMENTARY INSULATION (see 6.5.3)		P
	c) automatic disconnection of the supply (see 6.5.5)	No such devices	N/A
	d) current- or voltage-limiting device (see 6.5.6)	No such devices	N/A
	Alternatively one of the single means of protection is used:		—
	e) REINFORCED INSULATION (see 6.5.3)		P
	f) PROTECTIVE IMPEDANCE (see 6.5.4)	No PROTECTIVE IMPEDANCE	N/A
6.5.2	NOT USED		—
6.5.3	SUPPLEMENTARY and REINFORCED INSULATION		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	Meet CLEARANCE, CREEPAGE DISTANCE and solid insulation requirements of 6.7		P
6.5.4	PROTECTIVE IMPEDANCE	NO PROTECTIVE IMPEDANCE	N/A
	Limits current or voltage to level of 6.3.1 in NORMAL and to level of 6.3.2 in SINGLE FAULT CONDITION		N/A
	CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of DOUBLE or REINFORCED INSULATION of 6.7		N/A
	The PROTECTIVE IMPEDANCE consists of one or more of the following:		—
	a) appropriate single component suitable for safety and reliability for protection, it is:		—
	1) RATED twice the maximum WORKING VOLTAGE		N/A
	2) resistor RATED for twice the power dissipation for maximum WORKING VOLTAGE		N/A
	b) combination of components		N/A
	Single electronic device not used as PROTECTIVE IMPEDANCE		N/A
6.5.5	Automatic disconnection of the supply	No such parts	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
6.5.6	Current- or voltage-limiting devices	No such devices	N/A
	Device complies with all of:		—
	a) RATED to limit the current or voltage to the level of 6.3.2		N/A
	b) RATED for the maximum WORKING VOLTAGE; and		N/A
	RATED for the maximum operational current if applicable		N/A
	c) CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of SUPPLEMENTARY INSULATION of 6.7		N/A
6.6	**Connections to external circuits**		P
6.6.1	General		P
	Connections do not cause ACCESSIBLE parts of the following to become HAZARDOUS LIVE in NORMAL CONDITION or SINGLE FAULT CONDITION:		—
	– the external circuits		P
	– the equipment		P
	Protection achieved by separation of circuits; or		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	short circuit of separation does not cause a HAZARD		N/A
	Instructions or markings for each terminal include:		—
	a) RATED conditions for TERMINAL		N/A
	b) Required RATING of external circuit insulation		N/A
6.6.2	TERMINALS for external circuits	No such terminals	N/A
	TERMINALS which receive a charge from an internal capacitor are not HAZARDOUS LIVE after 10 s of interrupting supply connection		N/A
6.6.3	Circuits with terminals which are HAZARDOUS LIVE	No such terminals	N/A
	These circuits are:		—
	Not connected to ACCESSIBLE conductive parts; or		N/A
	Connected to ACCESSIBLE conductive parts, but are not MAINS CIRCUITS and have one TERMINAL contact at earth potential		N/A
	No ACCESSIBLE conductive parts are HAZARDOUS LIVE		N/A
6.6.4	Terminals for stranded conductors	No such terminal	N/A
	No RISK of accidental contact because:		—
	– Located or shielded		N/A
	– Self-evident or marked whether or not connected to ACCESSIBLE conductive parts		N/A
	Complies as applicable:		—
	a) Manufacturer's specified maximum length of removed insulation, or		N/A
	b) 8 mm length of insulation removed		N/A
6.6.101	*Measuring circuit TERMINALS*		P
	Unmated measuring circuit terminals which could become hazardous live are separated from other measuring circuit terminals on current sensor.	Measure value for clearance and creepage distance: 5,7mm Limit: 1.0mm	P
	Determination of ACCESSIBLE parts		P
	CLEARANCE and CREEPAGE DISTANCE		P
6.6.102	*Specialized measuring circuit TERMINALS*	No such terminal	N/A
	Levels of 6.3.1 and 6.3.2 were not exceeded when each of the following voltages was applied to each other measuring circuit TERMINAL, if applicable:		—
	a) highest RATED a.c. voltage at any RATED MAINS frequency		N/A
	b)highest RATED d.c. voltage		N/A
	c)highest RATED a.c. voltage at the related maximum RATED measurement frequency		N/A
6.7	**Insulation requirements**		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
6.7.1	The nature of insulation		P
6.7.1.1	General		P
	Insulation between ACCESSIBLE parts or between separate circuits consist of CLEARANCES, CREEPAGE DISTANCES and solid insulation if provided as protection against a HAZARD		P
6.7.1.2	CLEARANCES		P
	Required CLEARANCES reflecting factors of 6.7.1.1		P
	Equipment rated for operating altitude greater than 2000 m correction factor of Table 3 of 61010-1 applied		P
6.7.1.3	CREEPAGE DISTANCES		P
	Required CREEPAGE DISTANCES reflecting factors of 6.7.1.1 a) to d)		P
	CTI material group reflected by requirements	Group I	P
	CTI test performed		N/A
	HAND-HELD EQUIPMENT not powered by mains or the measuring circuit, material group I selected	Hand-held equipment and Battery operated, material group I selected	P
	TERMINALS of HAND-HELD EQUIPMENT connected only to a HAND-HELD probe complying with 61010-031, material group I selected		N/A
6.7.1.4	Solid insulation		P
	Required solid insulation reflecting factors of 6.7.1.1 a) to d)		P
6.7.1.5	*Requirements for insulation according to type of circuit*	All of internal circuits are considered to be RATED of CAT III 300V, CAT II 600V	P
	6.7.2 MAINS circuits of OVERVOLTAGE CATEGORY II up to nominal supply voltage of 300 V	No MAINS circuits	N/A
	6.7.3 secondary circuits separated from circuits defined in a) by transformer	No MAINS circuits	N/A
	K.1 MAINS circuits of OVERVOLTAGE CATEGORY III and IV or OVERVOLTAGE CATEGORY II over 300 V	No MAINS circuits	N/A
	K.2 secondary circuits separated from circuits defined in c) by transformer	No MAINS circuits	N/A
	K.3 circuits having one or more of:		—
	1) .. maximum TRANSIENT OVERVOLTAGE is limited to .....known level below the level of MAINS CIRCUIT	All of internal circuits are considered to be RATED of CAT III 300V, CAT II 600V	N/A
	2) .... maximum TRANSIENT OVERVOLTAGE above the .....level of MAINS CIRCUIT	All of internal circuits are considered to be RATED of CAT III 300V, CAT II 600V	N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	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) ..... the circuit is a measuring circuit where ..... MEASUREMENT CATEGORIES do not apply		N/A
	IN K.101 FOR MEASURING CIRCUITS RATED FOR MEASUREMENT CATEGORIES	All of internal circuits are considered to be RATED of CAT III 300V, CAT II 600V	P
6.7.2	Insulation for MAINS CIRCUITS of OVERVOLTAGE CATEGORY II with a nominal supply voltage up to 300 V	Powered by battery	N/A
6.7.2.1	CLEARANCES and CREEPAGE DISTANCES		—
	Values for MAINS CIRCUITS of Table 4 are met		N/A
	Coatings to achieve reduction to POLLUTION DEGREE 1 comply with requirements of Annex H		N/A
6.7.2.2	Solid insulation		N/A
6.7.2.2.1	General		N/A
	Withstands electrical and mechanical stresses in normal use and all RATED environmental conditions of 1.4		N/A
	Equipment passed voltage tests of 6.8.3 with values of Table 5		N/A
	Complies as applicable:		—
	a) ENCLOSURE or PROTECTIVE BARRIER of Clause 8		N/A
	b) moulded and potted parts requirements of 6.7.2.2.2		N/A
	c) inner layers of printed wiring boards requirements of 6.7.2.2.3		N/A
	d) thin-film insulation requirements of 6.7.2.2.4		N/A
6.7.2.2.2	Moulded and potted parts		—
	Conductors between same two layers are separated by at least 0,4 mm after moulding is completed		N/A
6.7.2.2.3	Inner insulating layers of printed wiring boards		—
	Separated by at least 0,4 mm between same two layers		N/A
	REINFORCED INSULATION has adequate electric strength; one of following methods used:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	a) thickness of insulation is at least 0,4 mm		N/A
	b) insulation is assembled of minimum two separate layers, each RATED for test voltage of Table 5 for BASIC INSULATION		N/A
	c) insulation is assembled of minimum two separate layers, where the combination is rated for test voltage of Table 5 for REINFORCED INSULATION		N/A
6.7.2.2.4	Thin-film insulation		—
	Conductors between same two layers are separated by applicable CLEARANCES and CREEPAGE DISTANCE of 6.7.2.1		N/A
	REINFORCED INSULATION have adequate electric strength; one of the following methods used:		—
	a) thickness through the insulation at least 0,4 mm		N/A
	b) insulation is assembled of min. two separate layers, each RATED for test voltage of Table 5 for BASIC INSULATION		N/A
	c) insulation is assembled of min. three separate layers, where the combination of two layers passed voltage tests of 6.8.3 with values of Table 5 for REINFORCED INSULATION		N/A
6.7.3	Insulation for secondary circuits derived from MAINS CIRCUITS of OVERVOLTAGE CATEGORY II up to 300 V	Powered by AAA battery	N/A
6.7.3.1	General		N/A
	Secondary circuits where separation from MAINS CIRCUITS is achieved by a transformer providing:		—
	– REINFORCED INSULATION		N/A
	– DOUBLE INSULATION		N/A
	– screen connected to the PROTECTIVE CONDUCTOR TERMINAL		N/A
6.7.3.2	CLEARANCES		N/A
	a) meet the values of Table 6 for BASIC INSULATION and SUPPLEMENTARY INSULATION; or		N/A
	twice the values of Table 6 for REINFORCED INSULATION; or		N/A
	b) pass the voltage tests of 6.8 with values of Table 6;		N/A
	with following adjustments:		—
	1) values for reinforced insulation are 1,6 times the values for basic insulation		N/A
	2) if operating altitude is greater than 2000 m values of CLEARANCES multiplied with factor of Table 3		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	3) minimum CLEARANCE is 0,2 mm for POLLUTION DEGREE 2 and 0,8 mm for POLLUTION DEGREE 3		N/A
6.7.3.3	CREEPAGE DISTANCES		N/A
	Based on WORKING VOLTAGE meets the values of Table 7 for BASIC and SUPPLEMENTARY INSULATION		N/A
	Values for REINFORCED INSULATION are twice the values of BASIC INSULATION		N/A
	Coatings to achieve reduction to POLLUTION DEGREE 1 comply with requirements of Annex H		N/A
6.7.3.4	Solid insulation		N/A
6.7.3.4.1	General		N/A
	Withstands electrical and mechanical stresses in normal use and all RATED environmental conditions of 1.4		—
	a) Equipment passed voltage test of 6.8.3.1 for 5 s with VALUES of Table 6 for BASIC and SUPPLEMENTARY INSULATION		N/A
	values for REINFORCED INSULATION are 1,6 times the values of BASIC INSULATION		N/A
	b) if WORKING VOLTAGE exceeds 300 V, equipment passed voltage test of 6.8.3.1 for 1 min with a test voltage of 1,5 times working voltage for BASIC or SUPPLEMENTARY INSULATION		N/A
	value for REINFORCED INSULATION are twice the WORKING VOLTAGE		N/A
	Complies as applicable:		—
	1) ENCLOSURE or PROTECTIVE BARRIER of Clause 8		N/A
	2) moulded and potted parts requirements of 6.7.3.4.2		N/A
	3) inner layers of printed wiring boards requirements of 6.7.3.4.3		N/A
	4) thin-film insulation requirements of 6.7.3.4.4		N/A
6.7.3.4.2	Moulded and potted parts		—
	Conductors between same two layers are separated by applicable distances of Table 8		N/A
6.7.3.4.3	Inner insulation layers of printed wiring boards		—
	Separated by at least the applicable distances of Table 8 between same two layers		N/A
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		—
	a) thickness at least applicable distance of Table 8		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	b) insulation is assembled of minimum two separate layers, each RATED for test voltage of Table 6 for BASIC INSULATION		N/A
	c) insulation is assembled of min. two separate layers, where the combination is RATED for 1,6 times the test voltage of Table 6		N/A
6.7.3.4.4	Thin-film insulation		—
	Conductors between same two layers are separated by applicable CLEARANCES and CREEPAGE DISTANCE of 6.7.3.2 and 6.7.3.3		N/A
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		—
	a) thickness at least applicable distance of Table 8		N/A
	b) insulation is assembled of min. two separate layers, each RATED for test voltage of Table 6 for BASIC INSULATION		N/A
	c) insulation is assembled of min. three separate layers, where the combination of two layers passed voltage tests with 1,6 time values of Table 6:		—
	a.c. test of 6.8.3.1; or		N/A
	d.c. test of 6.8.3.2 for circuits stressed only by d.c. voltages		N/A
6.8	**Procedure for voltage tests**		P
6.9	**Constructional requirements for protection against electric shock**		P
6.9.1	General		P
	If a failure could cause a HAZARD:		—
	a) security of wiring connections		P
	b) screws securing removable covers		P
	c) accidental loosening		P
	d) CLEARANCES and CREEPAGE DISTANCES not reduced below the values of basic insulation by loosening of parts or wires		P
6.9.2	Insulating materials		P
	Material not to be used for safety relevant insulation:		—
	a) easily damaged materials not used		P
	b) non-impregnated hygroscopic materials not used		P
6.9.3	Colour coding		N/A
	Green-and-yellow insulation shall not be used except:		—
	a) protective earth conductors;	No protective earth conductors	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	b) PROTECTIVE BONDING conductors;	No PROTECTIVE BONDING conductors	N/A
	c) potential equalization conductors;	No potential equalization conductors	N/A
	d) functional earth conductors	No functional earth conductors	N/A
6.9.101	*Protection against the HAZARDOUS LIVE conductor*		P
6.9.101.1	*Protection by a PROTECTIVE BARRIER*		P
	Type A CURRENT SENSORS provided with a PROTECTIVE BARRIER		P
	It covers at least 50% of the perimeter, and	100% used	P
	Extends along two opposite sides of the HAND-HELD part		P
	CLEARANCE and CREEPAGE DISTANCE between HAZARDOUS LIVE parts and the PROTECTIVE BARRIER meets the requirements for REINFORCED INSULATION		P
6.9.101.2	*HAND-HELD or hand-manipulated parts*		P
	HAND-HELD or hand-manipulated parts of Type A current sensors separated by DOUBLE or REINFORCED INSULATION from parts of the JAWS		—
	Determination of touchable parts of the JAWS in open and closed position conducted using of metal pin of 6.3.2, as well as accessible hand-held or hand-manipulated parts, and		P
	a) current sensor RATED for MEASUREMENT CATEGORIES, Annex K.101.2, K.101.3 and K.101.4 applied as applicable		P
	b) current sensor not RATED for MEASUREMENT CATEGORIES, Annex K.3.2, K.3.3 and K.3.4 applied as applicable	Rated for CAT III 300V, CAT II 600V	N/A
	Outer surface of the ENCLOSURE of the JAWS were covered with metal foil during test		P
	JAW ENDS of Type A CURRENT SENSORS RATED for MEASUREMENT CATEGORIES III and IV with wear indicator, measurement and tests performed before and after abrasion test of 8.101 and impact test of 8.102	Without wear indicator	N/A
	JAW ENDS of Type A CURRENT SENSORS RATED for MEASUREMENT CATEGORIES III and IV without wear indicator, measurement and tests performed after abrasion test of 8.101 and impact test of 8.102		P
6.9.102	*Input / output circuits*	The input circuits of this product will be connected a probe assembly that comply with EN 61010-031:2015; and is separated from JAWS by DI/RI.	P
	Input / output circuits of Type A, Type B and Type C CURRENT SENSORS separated by DOUBLE or REINFORCED INSULATION from parts of the JAWS		—
	Determination of touchable parts of the JAWS in open and closed position conducted by using metal pin of 6.2.3, and		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	a) current sensor RATED for MEASUREMENT CATEGORIES, CLEARANCES and CREEPAGE DISTANCES in acc. to K.101.2, K.101.3 and K.101.4 applied as applicable	Rated for CAT III 300V, CAT II 600V	P
	b) current sensor not RATED for MEASUREMENT CATEGORIES, CLEARANCES and CREEPAGE DISTANCES in acc. to K.3.2, K.3.3, K.3.4 and K.3.5 applied as applicable	See above	N/A
	Outer surface of the ENCLOSURE of the JAWS were covered with metal foil during test		P
	JAW ENDS with wear indicator, measurement and tests performed before and after abrasion test of 8.101 and impact test of 8.102	Without wear indicator	N/A
	JAW ENDS without wear indicator, measurement and tests performed after abrasion test of 8.101 and impact test of 8.102		P
6.101	*Output circuit leads*	No output circuit leads	N/A
6.101.1	*General*		N/A
6.101.2	*Connection to the current sensor ENCLOSURE body*		N/A
	The mated TERMINALS located at the current sensor ENCLOSURE body has DOUBLE or REINFORCED INSULATION between their outer surfaces and their conductors		N/A
	For Type A, Type B and Type C current sensors, insulation of output leads and mated TERMINALS based on the requirements of K.101 for the higher of the voltage RATING and the MEASUREMENT CATEGORY RATING of the JAWS or this RATING of the output circuit but not less than 300 V in MEASUREMENT CATEGORY II.		N/A
	For Type D current sensors, insulation of output circuit leads and of mated TERMINALS based on the requirements of Clause K.101 for 300 V in MEASUREMENT CATEGORY II.		N/A
	CLEARANCE and CREEPAGE distances measured in acc. to K.101.2		N/A
	Dielectric strength test in acc. to K.101.4 for solid insulation		N/A
6.101.3	*Connection to measuring or control equipment*	No such parts	N/A
	Assigned voltage value :		—
	RATED MEASUREMENT CATEGORY :		—
	Unmated TERMINALS comply with the requirements of 101.2		N/A
	Current sensor designed for use only with a specific model of equipment, the current sensor TERMINAL RATING is consistent with the TERMINAL RATING of this specific measuring or control equipment.		N/A
	Conformity is checked as specified in 101.2 by inspection, and		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	a) current sensor RATED for MEASUREMENT CATEGORIES, CLEARANCES and CREEPAGE DISTANCES in acc. to K.101.2, K.101.3 and K.101.4 applied		N/A
	b) current sensor not RATED for MEASUREMENT CATEGORIES, CLEARANCES and CREEPAGE DISTANCES in acc. to K.3.2, K.3.3, K.3.4 and K.3.5 applied		N/A
6.10	Connection to MAINS supply source and connections between parts of equipment	Battery operated	N/A
6.10.1	MAINS supply cords	Powered by battery, no mains supply cord	N/A
	RATED for maximum equipment current (see 5.1.3 c)		N/A
	Cable complies with IEC 60227 or IEC 60245		N/A
	Heat-resistant if likely to contact hot parts		N/A
	Temperature RATING (cord and inlet) ..... :		—
	Green/yellow used only for connection to PROTECTIVE CONDUCTOR TERMINALS		N/A
	Detachable cords with IEC 60320 MAINS connectors:		—
	Conform to IEC 60799; or		N/A
	Have the current RATING of the MAINS connector		N/A
6.10.2	Fitting of non-detachable MAINS supply cords		N/A
6.10.2.1	Cord entry		—
	a) inlet or bushing with a smoothly rounded opening; or		N/A
	b) insulated cord guard protruding >5 D (diameter)		N/A
6.10.2.2	Cord anchorage		—
	Protective earth conductor is the last to take the strain		N/A
	a) cord is not clamped by direct pressure from a screw		N/A
	b) knots are not used		N/A
	c) cannot push the cord into the equipment to cause a HAZARD		N/A
	d) no failure of cord insulation in anchorage with metal parts		N/A
	e) not to be loosened without a tool		N/A
	f) cord replacement does not cause a HAZARD and method of strain relief is clear		N/A
	Push-pull and or torque test		N/A
6.10.3	Plugs and connectors		N/A
	MAINS supply plugs, connectors etc., conform with relevant specifications		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	If equipment supplied at voltages below 6.3.2.a) or from a sole source:		—
	Plugs of supply cords do not fit MAINS sockets above rated SUPPLY voltage		N/A
	MAINS type plugs used only for connection to MAINS supply		N/A
	Plug pins which receive a charge from an internal capacitor		N/A
	Accessory MAINS socket outlets:		—
	a) marking if accepts a standard MAINS supply plug (see 5.1.3e)		N/A
	b) input has a protective earth conductor if outlet has EARTH TERMINAL CONTACT		N/A
6.11	**Disconnection from supply source**	Powered by battery	N/A
6.11.1	Disconnects all current-carrying conductors		N/A
6.11.2	Exceptions		N/A
6.11.3	Requirements according to type of equipment		N/A
6.11.3.1	PERMANENTLY CONNECTED EQUIPMENT and multi-phase equipment		N/A
	Employs switch or circuit-breaker		N/A
	If switch or circuit-breaker is not part of the equipment, documentation requires:		—
	a) switch or circuit-breaker to be included in building installation		N/A
	b) suitable location easily reached		N/A
	c) marking as disconnecting for the equipment		N/A
6.11.3.2	Single-phase cord-connected equipment		N/A
	Equipment is provided with one of the following:		—
	a) switch or circuit-breaker		N/A
	b) appliance coupler (disconnectable without tool)		N/A
	c) separable plug (without locking device)		N/A
6.11.4	Disconnecting devices		N/A
6.11.4.1	General		N/A
	Disconnecting device part of equipment		N/A
	Electrically close to the SUPPLY		N/A
	Power-consuming components not electrically located between the supply source and the disconnecting device		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	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	No such parts	N/A
	When used as disconnection device:		—
	Circuit breaker meets the relevant requirements IEC 60947-2 and is suitable for the application		N/A
	Switch meets the relevant requirements IEC 60947-3 and is suitable for the application		
	Marked to indicate function ..... :		—
	Not incorporated in MAINS cord		N/A
	Does not interrupt PROTECTIVE EARTH CONDUCTOR		N/A
6.11.4.3	Appliance couplers and plugs	No such parts	N/A
	Where an appliance coupler or separable plug is used as the disconnecting device (see 6.11.3.2):		—
	Readily identifiable and easily reached by the operator		N/A
	Single-phase portable equipment cord length not more than 3 m		N/A
	PROTECTIVE EARTH CONDUCTOR connected first and disconnected last		N/A
7	**PROTECTION AGAINST MECHANICAL HAZARDS**		P
7.1	**General**		P
	Equipment does not cause a mechanical HAZARD in NORMAL nor in SINGLE FAULT CONDITION		P
	Conformity is checked by 7.2 to 7.7		P
7.2	**Sharp edges**		P
	Easily-touched parts are smooth and rounded		P
	Do not cause injury during NORMAL USE and		P
	Do not cause injury during SINGLE FAULT CONDITION		P
7.3	**Moving parts**	No moving parts	N/A
7.3.1	General		N/A
	HAZARDS from moving parts limited to a tolerable level with the conditions specified in 7.3.2 and 7.3.5		N/A
	RISK assessment in accordance with 7.3.3 carried out		N/A
7.3.2	Exceptions		N/A
	Access to HAZARDOUS moving parts permitted under following circumstances:		—
	a) obviously intended to operate on parts or materials external of the equipment		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
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:		—
	1) access requires TOOL		N/A
	2) statement about training in the instructions		N/A
	3) warning markings on covers prohibiting access by untrained OPERATORS		N/A
	or symbol 14 with full details in documentation		N/A
7.3.3	RISK assessment for mechanical HAZARDS to body parts		N/A
	RISK is reduced to a tolerable level by protective measures as specified in Table 12		N/A
	Minimum protective measures:		—
	A. Low level measures		N/A
	B. Moderate measures		N/A
	C. Stringent measures		N/A
7.3.4	Limitation of force and pressure		N/A
	Following levels are met in NORMAL and SINGLE FAULT CONDITION:		—
	Continuous contact pressure below 50 N / cm² with force below 150 N		N/A
	Temporary force below 250 N for an area at least of 3 cm² for a maximum duration of 0,75 s		N/A
7.3.5	Gap limitations between moving parts		N/A
7.3.5.1	Access normally allowed		—
	If levels of 7.3.4 exceeded and a body part may be inserted minimum gap as specified in Table 13 assured in NORMAL and in SINGLE FAULT CONDITION		N/A
7.3.5.2	Access normally prevented		—
	Maximum gap as specified in Table 14 assured in NORMAL and in SINGLE FAULT CONDITION		N/A
7.4	**Stability**	Hand-held equipment	N/A
	Equipment not secured to building structure is physical stable		N/A
	Stability maintained after opening of drawers etc. by automatic means, or		N/A
	warning marking requires the application of means		N/A
	Compliance checked by following tests as applicable:		—
	a) 10° tilt test for other than handheld equipment		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	b) multi-directional force test for equipment exceeds height of 1 m and mass of 25 kg		N/A
	c) downward force test for floor-standing equipment		N/A
	d) overload test with 4 times maximum load for castor or support foot that supports greatest load, or		N/A
	e) castor or support foot that supports greatest load removed from equipment		N/A
7.5	**Provisions for lifting and carrying**	Hand-held equipment	N/A
7.5.1	General		N/A
	Equipment more than 18 kg ..... :		N/A
	Has means for lifting or carrying; or		N/A
	Directions are given in documentation		N/A
7.5.2	Handles and grips		N/A
	Handles or grips withstand four times weight		N/A
7.5.3	Lifting devices and supporting parts		N/A
	RATED for maximum load; or		N/A
	Tested with four times maximum static load		N/A
7.6	**Wall mounting**	Hand-held equipment	N/A
	Mounting brackets withstand four times weight		N/A
	One fastener removed and test repeated with two times weight		N/A
7.7	**Expelled parts**	No 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	**General**		P
	Equipment does not cause a HAZARD when subjected to mechanical stresses in NORMAL USE		P
	Normal protection level is 5 J	Hand-held equipment No impact test required	N/A
	Levels below 5 J but not less than 1 J are acceptable if all of the following criteria are met:		—
	a) Lower level justified by RISK assessment of manufacturer		N/A
	b) Equipment installed in its intended application is not easily touched		N/A
	c) Only occasional access during NORMAL USE		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	d) IK code in accordance to IEC 62262 marked or symbol 14 used with full information in the documentation		N/A
	for non-metallic ENCLOSURES rated below 2 °C ambient temperature value chosen for minimum RATED temperature		N/A
	impact energies between IK values, the IK code marked for nearest lower value		N/A
	Conformity is checked by performing following tests:		—
	1) Static test of 8.2.1		P
	2) Impact test of 8.2.2 with 5 J except for HAND-HELD EQUIPMENT	Hand-held equipment, no impact test required	N/A
	if specified impact energy is not 5 J alternate method of IEC 62262 used		N/A
	3) Drop test of 8.3.1 or 8.3.2 except for FIXED EQUIPMENT and equipment with mass over 100 kg		P
	Equipment RATED with an impact rating of IK 08 that obviously meets the criteria		N/A
	After the tests inspection with following results:		—
	– HAZARDOUS LIVE parts above the limits of 6.3.2 not ACCESSIBLE		P
	– insulation pass the voltage tests of 6.8		P
	i) No leaks of corrosive and harmful substances		P
	ii) ENCLOSURE shows no cracks resulting in a HAZARD		P
	iii) CLEARANCES not less than their permitted values		P
	iv) Insulation of internal wiring remains undamaged	No such parts	N/A
	v) PROTECTIVE BARRIERS not damaged or loosened		P
	vi) No moving parts exposed, except permitted by 7.3	No moving parts	N/A
	vii) No damage which could cause spread of fire		P
8.2	**ENCLOSURE rigidity test**		P
8.2.1	Static test		P
	– 30 N with 12 mm rod applied to each part of ENCLOSURE		P
	– in case of doubt test conducted at maximum RATED ambient temperature	40℃	P
8.2.2	Impact test	Hand-held equipment, no such requirement	N/A
	Impact applied to any part of ENCLOSURE causing a HAZARD if damaged		N/A
	Impact energy level and corresponding IK code ..... :		—

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	Non-metallic ENCLOSURES cooled to minimum RATED ambient temperature if below 2 °C		N/A
8.3	**Drop test**		P
8.3.1	Other than HAND-HELD and DIRECT-PLUG-IN EQUIPMENT		N/A
	Tests conducted with a drop height or angle of..... :		—
8.3.2	HAND-HELD and DIRECT-PLUG-IN EQUIPMENT		P
	Non-metallic ENCLOSURES cooled to minimum RATED ambient temperature if below 2 °C	0°C	P
	Drop test conducted with an height of 1 m		P
8.101	***JAW ENDS abrasion test***		P
	Requirements applied only for Type A and Type B current sensors RATED for MEASUREMENT CATEGORIES III and IV. Current sensors with a sliding JAW, with fork-style JAWS and flexible current sensors not concerned.		P
	Tests performed with one unconditioned sample in NORMAL CONDITION and one preconditioned sample of CURRENT SENSOR in acc. to 10.5.2 a)		P
	The samples of current sensor are submitted to the conformity statement of 6.9.101.2 and 6.9.102 after abrasion test.		P
8.102	***JAW impact test***		P
	Test performed with one sample of Type A current sensor		P
	After impact test, the sample of current sensor returned to reference test temperature in acc. to 4.3.1 and submitted to the conformity statement of 6.9.101.2 and 6.9.102 after impact test.		P
8.103	***Pressure test at high temperature for insulation of flexible current sensors***	Not flexible current sensors	N/A
	Flexible cords are provided at least DOUBLE INSULATION or REINFORCED INSULATION when new. Additionally they meet the following:		—
	a)Flexible cords without wear indicator, provided at least DOUBLE INSULATION or REINFORCED INSULATION after typical lifetime wear.		N/A
	b)Flexible cords with wear indicator, provided at least BASIC INSULATION when the wear indicator becomes visible.		N/A
	Indentation device shown in Figure 105. The force is applied in a direction perpendicular to the axis of the sample; the blade is also perpendicular to the axis of the sample.		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	After treatment dielectric strength test conducted with each sample of flexible cord, in acc. to K.101.4 rated for MEASUREMENT CATEGORIES or in acc. to K.3.5 not rated for MEASUREMENT CATEGORIES.....		N/A
8.104	***Pull test for endcaps of flexible current sensors***	Not flexible current sensors	N/A
	MEASUREMENT CATEGORY of current sensor.....:		—
	After the first pull the insulation has itself not more than 2 mm displaced		N/A
	After the last pull:		—
	a)Insulation not moved more than 1 mm above the displacement from the first pull		N/A
	b)CLEARANCE and CREEPAGE DISTANCES not reduced below the limits of K.101.2 and K.101.3 for REINFORCED INSULATION for current sensors with rated MEASUREMENT CATEGORIES		N/A
	CLEARANCE and CREEPAGE DISTANCES not .reduced below the limits of K.3.2, K.3.3 and K.3.4 for REINFORCED INSULATION for current sensors without rated MEASUREMENT CATEGORIES; and		N/A
	c)Dielectric strength test acc. to K.101.4 for REINFORCED INSULATION for current sensors with rated MEASUREMENT CATEGORIES or acc. to K.3.5 for current sensors without rated MEASUREMENT CATEGORIES..		N/A
9	**PROTECTION AGAINST THE SPREAD OF FIRE**		P
9.1	**General**		P
	No spread of fire in NORMAL and SINGLE FAULT CONDITION		P
	MAINS supplied equipment meets requirements of 9.6 additionally	Powered by battery	N/A
	Conformity is checked by minimum one or a combination of the following (see Figure 11):		—
	a) SINGLE FAULT test of 4.4; or		P
	b) Application of 9.2 (eliminating or reducing the sources of ignition); or		N/A
	c) Application of 9.3 (containment of fire within the equipment)	Plastic enclosure flammability classification UL 94 V-0	P
9.2	**Eliminating or reducing the sources of ignition within the equipment**		N/A
	a) 1) Limited-energy circuit (see 9.4); or		N/A
	2) BASIC INSULATION provided for parts of different potential; or		N/A
	Bridging the insulation does not cause ignition		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	b) Surface temperature of liquids and parts (see 9.5)		N/A
	c) No ignition in circuits designed to produce heat		N/A
9.3	**Containment of the fire within the equipment, should it occur**		P
9.3.1	General		P
	Spread of fire outside equipment reduced to a tolerable level if:		—
	a) Energizing of the equipment is controlled by an OPERATOR held switch	No such parts	N/A
	b) ENCLOSURE is conform with constructional requirements of 9.3.2; and	Plastic enclosure flammability classification UL 94 V-0	P
	Requirements of 9.5 are met	No flammable liquids	N/A
9.3.2	Constructional requirements		P
	a) Connectors and insulating material have flammability classification V-2 or better	V-0	P
	b) Insulated wires and cables are flame retardant (VW-1 or equivalent)		N/A
	c) ENCLOSURE meets following requirements:		—
	1) Bottom and sides in arc of 5 ° (see Figure 13) to non-limited circuits (9.4) meets:		—
	i) no openings; or	No openings	P
	ii) perforated as specified in Table 16; or		N/A
	iii) metal screen with a mesh; or		N/A
	iv) baffles as specified in Figure 12		N/A
	2) Material of ENCLOSURE and any baffle or flame barrier is made of:		—
	Metal (except magnesium); or		N/A
	Non-metallic materials have flammability classification V-1 or better	V-0	P
	3) ENCLOSURE and any baffle or flame barrier have adequate rigidity		P
9.4	**Limited-energy circuit**		N/A
	a) Potential not more than 30 r.m.s. and 42,4 V peak, or 60 V d.c.		N/A
	b) Current limited by one of following means:		—
	1) Inherently or by impedance (see Table 17); or		N/A
	2) Overcurrent protective device (see Table 18); or		N/A
	3) A regulating network limits also in SINGLE FAULT CONDITION (see Table 17)		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	c) Is separated by at least BASIC INSULATION		N/A
	Fuse or a nonadjustable electromechanical device is used		N/A
9.5	**Requirements for equipment containing or using flammable liquids**	No flammable liquids	N/A
	Flammable liquids contained in or specified for use with equipment do not cause spread of fire		N/A
	RISK is reduced to a tolerable level:		—
	a) The temperature of surface or parts in contact with flammable liquids is 25 °C below fire point		N/A
	b) The quantity of liquid is limited		N/A
	c) Flames are contained within the equipment		N/A
	Detailed instructions for RISK-reduction provided		N/A
9.6	**Overcurrent protection**	Battery operated	N/A
9.6.1	General		N/A
	MAINS supplied equipment protected		N/A
	BASIC INSULATION between MAINS parts of opposite polarity provided		N/A
	Overcurrent protection devices not fitted in the protective conductor		N/A
	Fuses or single-pole circuit-breakers not fitted in neutral (multi-phase equipment)		N/A
9.6.2	PERMANENTLY CONNECTED EQUIPMENT		N/A
	Overcurrent protection device:		—
	Fitted within the equipment; or		N/A
	Specified in manufacturer's instructions		N/A
9.6.3	Other equipment		N/A
	Protection within the equipment		N/A

10	**EQUIPMENT TEMPERATURE LIMITS AND RESISTANCE TO HEAT**		P
10.1	**Surface temperature limits for protection against burns**		P
	Easily touched surfaces within the limits in NORMAL and in SINGLE FAULT CONDITION:		—
	– at an specified ambient temperature of 40 °C		P
	– for equipment rated above 40 °C ambient temperature limits not exceeded raised by the difference to 40 °C		N/A
	Heated surfaces necessary for functional reasons exceeding specified values:	No heated surfaces	—

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	– Are recognizable as such by appearance or function; or		N/A
	– Are marked with symbol 13		N/A
	– Guards are not removable without tool		N/A
10.2	**Temperatures of windings**	No windings	N/A
	Limits not exceeded in:		—
	NORMAL CONDITION		N/A
	SINGLE FAULT CONDITION		N/A
10.3	**Other temperature measurements**		P
	Following measurements conducted if applicable:		—
	a) Value of 60 °C of field-wiring terminal box not exceeded	No field-wiring terminal box	N/A
	b) Surface of flammable liquids and parts in contact with this liquids	No flammable liquids	N/A
	c) Surface of non-metallic ENCLOSURES		P
	d) Parts made of insulating material supporting parts connected to MAINS supply	No such insulating material	N/A
	e) Terminals carrying a current more than 0,5 A	No such terminals	N/A
10.4	**Conduct of temperature tests**		P
10.4.1	General		P
	Tests conducted under reference test conditions and manufacturer's instructions		P
	Tests alternatively conducted at the least favourable ambient temperature within the RATED ambient temperature..... :		—
10.4.2	Temperature measurement of heating equipment	Not a heating equipment	N/A
	Tests conducted in test corner		N/A
10.4.3	Equipment intended for installation in a cabinet or wall		N/A
	Equipment built in as specified in installation instructions		N/A
10.5	**Resistance to heat**		P
10.5.1	Integrity of CLEARANCE and CREEPAGE DISTANCES		P
10.5.2	Non-metallic ENCLOSURES		P
	Within 10 min after treatment:		—
	Equipment subjected to suitable stresses of 8.2 and 8.3 complying with criteria of 8.1		P
10.5.3	Insulating material	No such Insulating material	N/A
	a) Parts supporting parts connected to MAINS supply		N/A
	b) TERMINALS carrying a current more than 0,5 A		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	Examination of material data; or		N/A
	in case of doubt:		N/A
	1) Ball pressure test; or		N/A
	2) Vicat softening test of ISO 306		N/A
10.5.101	*Resistance to heat of current sensors*		P
	Insulating material of JAWS surrounding a magnetic material which can overheat has adequate resistance to heat		P
	Examination of material data, one of the following tests performed:		—
	a) Ball-pressure test		P
	b) The Vicat softening test of ISO 306, method A120		N/A
10.101	***Other temperatures of current sensors***		P
	Easily touched surfaces did not exceed the values of Table 19 depending on frequency of circulating currents		P
	Temperature of the insulating material of windings did not exceed the values of Table 20		P
11	**PROTECTION AGAINST HAZARDS FROM FLUIDS AND SOLID FOREIGN OBJECTS**		P
11.1	**General**		P
	Protection to OPERATORS and surrounding area provided by EQUIPMENT		P
	All fluids specified by manufacturer considered	No specified fluids	N/A
11.2	**Cleaning**		N/A
11.3	**Spillage**		N/A
11.4	**Overflow**		N/A
11.5	**Battery electrolyte**		P
	Battery electrolyte leakage presents no HAZARD		P
11.6	**Equipment RATED with a degree of ingress protection (IP code)**	Not such protections	N/A
11.6.1	General		N/A
	Equipment marked with IP code .....:		—
	Conditions specified in the documentation		N/A
11.6.2	Conditions for testing		N/A
	Equipment in clean and new condition, all parts in place and mounted as specified by manufacturer		N/A
	Complete equipment tested, or		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	representative parts tested		N/A
	HAND-HELD EQUIPMENT and PORTABLE EQUIPMENT placed in least favourable position of NORMAL use		N/A
	Other equipment positioned or installed as specified		N/A
	TERMINALS provided with protective cap or cover, are installed as specified by manufacturer		N/A
	The equipment is operating (energized) during the treatment except:		—
	a) If manufacturer specifies degrees of protection for non-operating (de-energized) equipment, or		N/A
	b) Equipment is operating or non-operating during the treatment with does not affect the test results		N/A
11.6.3	Protection against solid foreign objects (including dust)		N/A
	Applicable test of IEC 60529 for protection against solid foreign objects conducted		N/A
	Additionally inspection of equipment resulted:		—
	a) No deposit on insulation parts that could lead to a HAZARD		N/A
	b) No created accumulations that have the potential to cause spread of fire		N/A
11.6.4	Protection against water		N/A
	Applicable test of IEC 60529 for protection against water conducted		N/A
	If any water has entered, safety is not impaired, inspection of equipment resulted:		—
	a) No deposit on insulation parts that could lead to a HAZARD		N/A
	b) Water has not reached hazardous live parts or windings which are not designed to operate when wet		N/A
	c) No accumulations near the end of cable nor enter the cable where it could cause a HAZARD		N/A
	d) No accumulations where it could lead to a HAZARD taking in consideration movement of the equipment		N/A
11.7	**Fluid pressure and leakage**	No Fluid pressure and leakage	N/A
11.7.1	Maximum pressure.....:		—
	Maximum pressure of any part does not exceed P_{RATED}		N/A
11.7.2	Leakage and rupture at high pressure		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	Fluid-containing parts checked by inspection or if a HAZARD could arise subjected to hydraulic test, if:		—
	a) product of pressure and volume > 200 kPa·l; and		N/A
	b) pressure > 50 kPa		N/A
	Safety evidence established by calculation in acc. to national authorities (e.g. Pressure Equipment Directive 2014/68/EU)		N/A
	Parts of refrigerating systems meets pressure-related requirements of EN 378-2 or IEC 60335-2-89 as applicable		N/A
11.7.3	Leakage from low-pressure parts		N/A
11.7.4	Overpressure safety device	No such devices	N/A
	Does not operate in NORMAL USE		N/A
	a) Connected as close as possible to parts intended to be protected		N/A
	b) Easy access for inspection, maintenance and repair		N/A
	c) Adjustment only with TOOL		N/A
	d) No discharge towards person		N/A
	e) No HAZARD from deposit of discharged material		N/A
	f) Adequate discharge capacity		N/A
	No shut-off valve between overpressure safety device and protected parts		N/A
12	**PROTECTION AGAINST RADIATION, INCLUDING LASER SOURCES, AND AGAINST SONIC AND ULTRASONIC PRESSURE**		P
12.1	**General**		P
	Equipment provides protection		P
12.2	**Equipment producing ionizing radiation**	No ionizing radiation	N/A
12.2.1	Ionizing radiation		N/A
12.2.1.1	General		N/A
	Equipment meets the following requirements:		—
	a) if intended to emit radiation meets requirements of 12.2.1.2; or		N/A
	tested, classified and marked in accordance to IEC 62598		N/A
	b) if only emits stray radiation meets requirements of 12.2.1.3		N/A
12.2.1.2	Equipment intended to emit radiation	No radiation	—
	Effective dose rate of radiation measured ..... :		—

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	If dose rate exceeds 5 µSv/h marked with the following:		—
	a) symbol 17 (ISO 361)		N/A
	b) abbreviations of the radionuclides .....:		—
	c) with maximum dose at 1 m; or.....:		—
	with dose rate value between 1 µSv/h and 5 µSv/h in m ..... :		—
12.2.1.3	Equipment not intended to emit radiation	No radiation	—
	Limit for unintended stray radiation of 1 µSv/h at any easily reached point kept ..... :		N/A
12.2.2	Accelerated electrons		N/A
	Compartments opened only by the use of a TOOL		N/A
12.3	**Optical radiation**		P
	No unintentional HAZARDOUS escape of optical radiation as ultraviolet, visible or infrared radiation, including light emitting diodes:		—
	– Checked by inspection; and		P
	– Radiation sources assessed in acc. to the requirements of IEC 62471, except for sources considered to be safe (Table 22) or conditionally safe (Table 23).	LCD screens is considered to be safe (Table 22)	P
	– Lamp and lamp systems assessed to Risk Groups 1, 2, or 3 of IEC 62471 are labelled in acc. to IEC 62471-2		N/A
	– If labelling impractical, lamp or lamp systems marked with symbol 14		N/A
	– Protective measures, restrictions on use, and operating instructions that may be necessary are provided, including the applicable conditions of use of Table 23.		N/A
12.4	**Microwave radiation**	No microwave radiation	N/A
	Power density does not exceed 10 W/m^2 .....:		N/A
12.5	**Sonic and ultrasonic pressure**	No such hazard	N/A
12.5.1	Sound level		N/A
	No HAZARDOUS sound emission		N/A
	Maximum sound pressure level measured and calculated for maximum sound power level as specified in ISO 3746 or ISO 9614-1		N/A
	Instruction describes measures for protection		N/A
12.5.2	Ultrasonic pressure		N/A
	Equipment not intended to emit ultrasound does not exceed limit of 110 dB between 20 kHz and 100 kHz		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	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:		—
	Marked with Symbol 14 of Table 1		N/A
	and following information in the documentation:		—
	a) dimensions of useful beam		N/A
	b) area where ultrasonic pressure exceed 110 dB		N/A
	c) maximum sound pressure inside beam area		N/A
12.6	**Laser sources**	No laser sources	N/A
	Equipment meets requirements of IEC 60825-1		N/A
13	**PROTECTION AGAINST LIBERATED GASES AND SUBSTANCES, EXPLOSION AND IMPLOSION**		P
13.1	**Poisonous and injurious gases and substances**		P
	No hazardous substances liberated in NORMAL CONDITION and in SINGLE FAULT CONDITION		P
	If potentially-hazardous substances are liberated:		—
	Operator is not directly exposed to a quantity of the substance that could cause harm		N/A
	Requirements to discharge of hazardous substances during NORMAL operation in accordance to manufacturer's instructions not considered as liberation		N/A
	Attached data/test reports demonstrate conformity		N/A
13.2	**Explosion and implosion**	No Explosion and implosion	N/A
13.2.1	Components		N/A
	Components liable to explode:		—
	Pressure release device provided; or		N/A
	Apparatus incorporates operator protection (see also 7.7)		N/A
	Pressure release device:		—
	Discharge without danger		N/A
	Cannot be obstructed		N/A
13.2.2	Batteries and battery charging		P
	If explosion or fire HAZARD could occur:		—
	Protection incorporated in the equipment; or		N/A
	Instructions specify batteries with built-in protection		N/A
	In case of wrong type of battery used:		—

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	No HAZARD; or		P
	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		P
	Single component failure		P
	Polarity reversal test		P
13.2.3	Implosion of cathode ray tubes	No cathode ray tubes	N/A
	If maximum face dimensions > 160 mm ..... :		—
	Intrinsically protected and correctly mounted; or		N/A
	ENCLOSURE provides protection:		N/A
	If non-intrinsically protected:		—
	Screen not removable without TOOL		N/A
	If glass screen, not in contact with surface of tube		N/A
14	**COMPONENTS AND SUBASSEMBLIES**		P
14.1	**General**		P
	Where safety is involved, components and subassemblies meet relevant requirements		P
14.2	**Motors**	No motors	N/A
14.2.1	Motor temperatures		N/A
	Does not present a HAZARD when stopped or prevented from starting; or		N/A
	Protected by over-temperature or thermal protection device conform with 14.3		N/A
14.2.2	Series excitation motors		N/A
	Connected direct to device, if overspeeding causes a HAZARD		N/A
14.3	**Overtemperature protection devices**	No such devices	N/A
	Devices operating in a SINGLE FAULT CONDITION		N/A
	a) Reliable function is ensured		N/A
	b) RATED to interrupt maximum current and voltage		N/A
	c) Does not operate in NORMAL USE		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	If self-resetting device used to prevent a HAZARD, protected part requires intervention before restarting		N/A
14.4	**Fuse holders**	No fuse holder	N/A
	No access to HAZARDOUS LIVE parts		N/A
14.5	**MAINS voltage selecting devices**	No such devices	N/A
	Accidental change not possible		N/A
14.6	**MAINS transformers tested outside equipment**	No mains transformers	N/A
14.7	**Printed wiring boards**		P
	Data shows conformity with V-1 of IEC 60695-11-10 or better; or	PCB have flammability classification: V-0	P
	Test shows conformity with V-1 of IEC 60695-11-10 or better		N/A
	Not applicable for printed wiring boards with limited-energy circuits (9.4)		N/A
14.8	**Circuits used to limit TRANSIENT OVERVOLTAGES**	No such parts	N/A
	Test conducted between each pair of MAINS SUPPLY TERMINALS		N/A
	No ignition or overheating of other materials:		—
	– no ignition		N/A
	– no heat to other parts above the self-ignition points		N/A
	Safely suppressing and properly functional after applied tests		N/A
14.101	*Circuits used to limit TRANSIENT OVERVOLTAGE in measuring circuits are used to measure MAINS*	No such parts	N/A
	If control of TRANSIENT OVERVOLTAGE is employed in a measuring circuit used to measure MAINS, the overvoltage limiting component or circuit has adequate strength to limit TRANSIENT OVERVOLTAGES		N/A
14.102	*Probe assemblies and accessories*		P
	Probe assemblies and accessories within the scope of IEC 61010-031, and current sensors within the scope of IEC 61010-2-032 shall meet the requirements thereof.		P

15	**PROTECTION BY INTERLOCKS**		N/A
15.1	**General**	No interlocks	N/A
	Interlocks are designed to remove a HAZARD before OPERATOR exposed		N/A
15.2	**Prevention of reactivation**		N/A
15.3	**Reliability**		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	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**	No such hazard	N/A
	Factors giving rise to a HAZARD the RISK assessment is reflecting those aspects:		—
	a) limitation of body dimensions		N/A
	b) displays and indicators		N/A
	c) accessibility and conventions of controls		N/A
	d) arrangement of TERMINALS		N/A
17	**RISK ASSESSMENT**		N/A
	RISK assessment conducted, if HAZARD might arise and not covered by Clauses 6 to 16	All hazard has covered by clause 6 to 16	N/A
	TOLERABLE RISK achieved by iterative documented process covering the following:		—
	a) RISK analysis		N/A
	Identifies HAZARDS and estimates RISK		N/A
	b) RISK evaluation		N/A
	Plan to judge acceptability of resulting RISK level based on the estimated severity and likelihood of a RISK		N/A
	c) RISK reduction		N/A
	Initial RISK reduced by counter measures;		N/A
	Repeated RISK evaluation without new RISKS introduced		N/A
	RISKS remaining after RISK assessment addressed in instructions to RESPONSIBLE BODY:		—
	Information contained how to mitigate these RISKS		N/A
	Following principles in methods of RISK reduction applied by manufacturer in given order:		—
	1) RISKS eliminated or reduced as far as possible		N/A
	2) Protective measures taken for RISKS that cannot be eliminated		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	3) User information about residual RISK due to any defect of the protective measures		N/A
	Indication of particular training is required		N/A
	Specification of the need for personal protective equipment		N/A
	Conformity checked by evaluation of the RISK assessment documentation		N/A
101	***Measuring circuits***		P
101.1	***General***		P
	The current sensor provides protection against HAZARDS resulting from normal use and REASONABLY FORESEEABLXE MISUSE of measuring circuits, as specified:		—
	a)Current measuring circuit did not interrupt the circuit being measured during range changing, or	No such hazard	N/A
	during the use of current sensors with an internal current transformer		N/A
	b)Electrical quantity within specification for any TERMINAL did not cause a HAZARD when it was applied to that TERMINAL or any other compatible TERMINAL, with the range and function settings ..... set in any possible manner		P
	c)Any interconnection between the current sensor and other devices or accessories did not cause a HAZARD while the current sensor is used for measurement purposes		P
	d)TEMPORARY OVERVOLTAGE or TRANSIENT OVERVOLTAGE applied on the measuring circuits TERMINALS in voltage measurement function did not cause a HAZARD		P
	e)Other HAZARDS that could result from REASONABLY FORESEEABLE MISUSE were ..... addressed by RISK assessment		N/A
101.2	***Current sensor with an internal current transformer***	No such hazard	N/A
	Any voltage above the levels of 6.3.2 not ACCESSIBLE in an open circuit condition of the output circuit		N/A
101.3	***Protection against mismatches of inputs and ranges***		P
101.3.1	*General*		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	In NORMAL CONDITION and for REASONABLY FORESEEABLE MISUSE no HAZARD occurred when the highest RATED voltage or current of a measuring circuit TERMINAL is applied to that terminal or to any other compatible TERMINAL, with any combination of function and range settings		P
	TERMINALS are clearly marked and do not retain the connectors of probe or accessory, therefore do not need to be tested. Terminals only accessible by use of a tool do not need to meet the requirement of 101.3.1		—
	The current sensor must provide protection against these HAZARDS. One of the following techniques used:		—
	a)Certified overcurrent protection device to interrupt short-circuit currents before a HAZARD arises used	No Certified overcurrent protection device	N/A
	Tests and requirements of 101.3.2 applied.		N/A
	b)Uncertified current limitation device, an impedance or a combination of both used		P
	Requirements and tests of 101.3.3 applied		P
101.3.2	*Protection by a certified overcurrent protection device*		N/A
	Certified overcurrent protection device used .....:		—
	Overcurrent protection device suitable if it is certified by an independent laboratory and if all of the following requirements are met:		—
	a)The a.c. and d.c. RATED voltages of the overcurrent protection device are at least as high as, respectively, the highest a.c. and d.c. RATED voltages of any measuring circuit TERMINAL on the current sensor.		N/A
	RATED a.c. / d.c. voltages of overcurrent protection device.....:		—
	Highest RATED a.c. / d.c. voltages of measuring circuit TERMINAL.....:		—
	b)The RATED time-current characteristic (speed) of the overcurrent protection device was such that .....no HAZARD will result from any possible combination of RATED input voltages, TERMINALS, and range selection:		N/A
	c)The a.c. and d.c. RATED breaking capacities of the overcurrent protection device exceed, respectively, the possible a.c. and d.c. short-.... circuit currents.		N/A
	RATED a.c. / d.c. breaking capacities.....:		—
	Calculated short-circuit currents a.c. / d.c.....:		—
	Impedance of measuring circuit incl. leads.....:		—
	For measurement categories II and III, the possible a.c. short-circuit current does not exceed the applicable values of Table AA.1.....:		—

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	Spacings surrounding the overcurrent protection device in the current sensor and following the protection device in the measuring circuit are sufficiently large to prevent arcing after the protection device opens.		N/A
	No damage to the equipment occurred during and after the test		N/A
101.3.3	*Protection by uncertified current limitation devices or by impedances*		P
	Uncertified overcurrent protection device used.....:		—
	Impedance used for limitation of current by one or more of the following:		—
	a)An appropriate single component which is constructed, selected, and tested so that safety and reliability for protection against relevant HAZARDS are assured:		—
	1)RATED for the maximum voltage that may be present in NORMAL CONDITION or during the REASONABLY FORESEEABLE MISUSE event.....:		N/A
	2) a resistor, be RATED for twice the power or energy dissipation that may result in NORMAL CONDITION or from the REASONABLY FORESEEABLE MISUSE event.....:		N/A
	3) applicable CLEARANCE and CREEPAGE AND DISTANCE requirements of Annex K for BASIC INSULATION between its terminations		N/A
	b)A combination of components which:		—
	1)withstand the maximum voltage that may be present in NORMAL CONDITION or during the REASONABLY FORESEEABLE MISUSE event;	600V	P
	2)able to dissipate the power or energy that may result in NORMAL CONDITION or from the REASONABLY FORESEEABLE MISUSE event;		P
	3) ..meet the applicable CLEARANCE and CREEPAGE DISTANCE requirements of Annex K for BASIC INSULATION between the terminations of the combination of components		P
	No HAZARD occurred during and after the test		P
	No evidence of fire, arcing, explosion or damage to impedance limitation devices or any component intended to provide protection against electric shock, heat, arc or fire, including the ENCLOSURE and traces on the printed wiring board, during and after the test		P
	The source voltage did not decrease by more than 20 % for more than 10 ms		P
101.3.4	*Test leads for the tests of 101.3.2 and 101.3.3*		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	Test of 101.3.2 and 101.3.3 were performed with all tests leads which were specified or supplied by manufacturer with the current sensor or were performed with tests leads that meet the following specifications:		—
	a)length = 1,0 m;		P
	b)cross section of the conductor = 1.5 mm², stranded copper wire;		P
	c) connector compatible with the measuring circuit TERMINALS;		P
	d)connection to the test voltage source via bare wire into suitable screw TERMINALS or		P
	Thimble connectors (twist-on wire connectors) or		N/A
	Equivalent means of providing a low impedance connection;		N/A
	e)arranged as straight as possible		P
	For the purposes of calculation of possible fault current in 101.3.2 and 101.3.3, the value of 30 mΩ can be used for these test leads.		—
	Test leads supplied by manufacturer used without modification		N/A
101.4	***Protection against MAINS overvoltages***		P
	To ensure protection against arc flash or fire, measuring circuits RATED for measuring MAINS voltages have minimum CLEARANCES and CREEPAGE DISTANCES equivalent to BASIC INSULATION between MAINS-connected conductive parts of opposite polarity.	(see Forms A.14 and A.15))	P
	Measuring circuit TERMINALS of voltage measuring circuit rated for:		—
	MEASUREMENT CATEGORIES .....:	CAT III 300V, CAT II 600V	—
	Applicable TRANSIENT OVERVOLTAGES .....:		N/A
	Impulse voltage of Table 104 applied .....:	6000V	P
	Resistance added to adjust the impedance depending of CAT III or IV .....:		—
	Applied mains voltage of source .....:	400Vac	—
	Test impulse applied in combination with the MAINS voltage under NORMAL use		P
	Wave shape of each impulse observed and no influence of overvoltage limiting device occurred		P
	Circuit breaker of the MAINS installation has being triggered		P
	No HAZARD arose in the event that the component ruptured or overheated		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
102	***Prevention of HAZARD from arc flash and short-circuits***		P
102.1	***General***		P
	The current sensor is constructed to mitigate the RISK of arc flash and short-circuits		P
	Measurements and tests of 102.2 and 102.3 conducted after the JAW ENDS abrasion test of 8.101		P
102.2	***Protection against short-circuits during clamping***		P
	Type A and Type B current sensors have additional protection against short circuit caused by JAWS		P
	Dielectric strength test acc. to 6.8.3.1 or 6.8.3.2 conducted, applicable voltages of Table 105 applied in conjunction with each specified test probe		P
102.3	***Protection against short-circuits in closed position***		P
	Passed the test of K.101.4		P
	JAW ENDS were not ACCESSIBLE in closed position in accordance with 6.2		P
	JAW ENDS of Type A, B and C current sensors have basic insulation between outer surface of JAW ENCLOSURE and all conductive parts		P
Annex K.3	**Insulation in circuits not addressed in 6.7, K.1 or K.2, and in measuring circuits where MEASUREMENTS CATEGORIES do not apply**		N/A
K.3.1	General	Rated for CAT III 300V, CAT II 600V	N/A
	These circuits have one or more of the following characteristics:		N/A
	a) the maximum possible TRANSIENT OVERVOLTAGE is limited by the supply source or within the equipment (see Clause K.4.) to a known level below the level assumed for the MAINS CIRCUIT;		N/A
	b) the maximum possible TRANSIENT OVERVOLTAGE is above the level assumed for the MAINS CIRCUIT;		N/A
	c) the WORKING VOLTAGE is the sum of voltages from more than one circuit, or is a mixed voltage;		N/A
	d) the WORKING VOLTAGE includes a recurring peak voltage that may include a periodic non-sinusoidal waveform or a non-periodic waveform that occurs with some regularity;		N/A
	e) the WORKING VOLTAGE has a frequency above 30 kHz;		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	f) the circuit is a measuring circuit where MEASUREMENT CATEGORIES do not apply.		N/A
	In cases a) to c) and f), CLEARANCES for BASIC INSULATION and SUPPLEMENTARY INSULATION are determined according to K.3.2.		N/A
	In cases d) and e) CLEARANCES are determined according to K.3.3.		N/A
	In all cases K.3.4 addresses CREEPAGE DISTANCE and K.3.5 solid insulation.		N/A
K.101	**Insulation requirements for measuring circuits of MEASUREMENT CATEGORIES II, III, IV**		P
K.101.1	General		P
	Precautions to reduce hazards related to shock and burn from arc flash is described in the user documentation		P
K.101.2	CLEARANCES		P
	For equipment intended to be powered from the circuit being measured, CLEARANCES of the MAINS CIRCUIT are designed according to the requirements of the RATED MEASUREMENT CATEGORIES	Powered by battery	N/A
	Overvoltage limiting devices may be used to reduce the transient Overvoltages to a level consistent with a lower MEASUREMENT CATEGORIES (see K.102)	No such devices	N/A
	Additional marking requirements in 5.1.5.2 and 5.1.5.101		P
	CLEARANCES for measuring circuits of MEASUREMENT CATEGORIES II, III, IV meet Table K.101	CAT III 300V, CAT II 600V	P
	Equipment rated to operate at an altitude greater than 2000 m, correction factor of Table K.1 of 61010-1 applied	Up to 2000m	N/A
	Voltage tests of 6.8.3.1 or 6.8.3.3 of 61010-1		P
K.101.3	CREEPAGE DISTANCES		P
	The requirements of K.2.3 of 61010-1 applied		P
K.101.4	Solid insulation		P
K.101.4.1	General		P
	Solid insulation withstands the electrical and mechanical stresses that may occur in NORMAL USE in all RATED environmental conditions (see 1.4) during the intended life of the equipment		P
	The manufacturer should take the expected life of the equipment into account when selecting insulating materials.		P

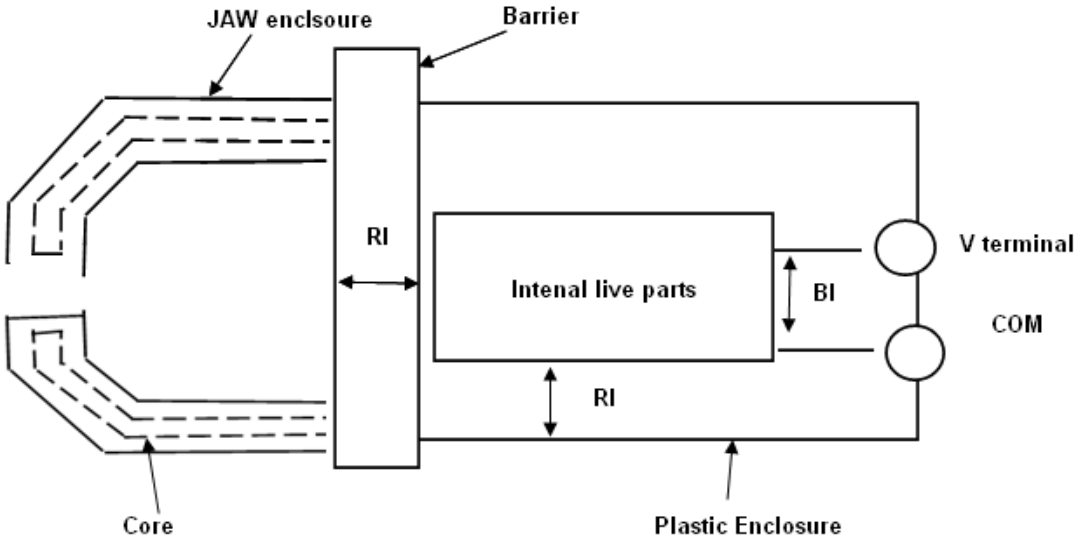
IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	Solid insulation also meets the following requirements as applicable		P
	solid insulation used as an ENCLOSURE or PROTECTIVE BARRIER, the requirements of Clause 8		P
	moulded and potted parts, the requirements of K.101.4.2	No such insulation	N/A
	insulating layers of printed wiring boards, the requirements of K.101.4.3	No such insulation	N/A
	thin-film insulations, the requirements of K.101.4.4	No such insulation	N/A
K.101.4.2	Moulded and potted parts	No such insulation	N/A
	Conductors located between same two layers moulded together are separated by at least the applicable minimum distance of Table K.9 of 61010-1		N/A
K.101.4.3	Insulating layers of printed wiring boards	No such insulation	N/A
	For BASIC INSULATION, SUPPLEMENTARY INSULATION and REINFORCED INSULATION, conductors located between the same two layers shall be separated by at least the applicable minimum distance of Table K.9.		N/A
	REINFORCED INSULATION have adequate electric strength; one of the following methods are used:		N/A
	thickness at least the applicable value of Table K.9 of 61010-1		N/A
	insulation is assembled from at least two separate layers, each RATED for test voltage of Table K.102 to K.104 for BASIC INSULATION		N/A
	insulation is assembled from at least two separate layers, where the combination is RATED for test voltage of Table K.102 to K.104 for REINFORCED INSULATION		N/A
K.101.4.4	Thin-film insulation	No such insulation	N/A
	Conductors between same layers are separated by at least the applicable CLEARANCES and CREEPAGE DISTANCE of K.101.2 and K.101.3		N/A
	REINFORECD INSULATION have adequate electric strength; one of the following methods are used:		N/A
	thickness at least the applicable value of Table K.9 of 61010-1		N/A
	insulation consists of at least two separate layers, each RATED for test voltage of Table K.102 to Table K.104 for BASIC INSULATION		N/A

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	insulation consists of at least three separate layers, where the combination of two layers passed voltage tests of Table K.102 to K.104 for REINFORCED INSULATION		N/A
	a.c. Voltage tests of 6.8.3.1 of 61010-1		N/A
K.102	**Reduction of TRANSIEN OVERVOLTAGES by the use of overvoltage limiting devices**		N/A
	If the overvoltage limiting device or circuit is intended to reduce TRANSIENT OVERVOLTAGES, a RISK ASSESSMENT (see Clause 17) is performed taking into account both of the followings	No such devices	N/A
	Even under SINGLE FAULT CONDITIONS, the circuit shall reduce TRANSIENT OVERVOLTAGES to a lower voltage value which depends on the design		N/A
	SINGLE FAULT CONDITION includes a short and open circuit of MOV (metal oxide varistor)		N/A
	the circuit operates as intended even after withstanding repeated TRANSIENT OVERVOLTAGES		N/A
ANNEX F	**ROUTINE TESTS**		N/A
	Manufacturer ´s declaration		N/A
ANNEX EE	**CLAMP MULTIMETER**		P
EE.1	**GENERAL**		P
	HAND-HELD clamp meters such as watt metres, clamps for process control or clamps falling within the scope of IEC 61557-1 to IEC 61557-12 are not considered as CLAMP MULTIMETRES		—
EE.2	**CLAMP MULTIMETRE RATING**		P
	TERMINALS of measuring circuits used for mains voltage measurements and jaws rated for minimum AC 300 V rms to earth and minimum “CAT III”:		P
	RATED voltages of TERMINALS.....:	600V	P
	RATED voltages to earth.....:	600V	P
	RATED MEASUREMENT CATEGORY .....:	CAT III, CAT II	P
	RATED voltage for TERMINALS equal to or higher than RATED voltage to earth		P
EE.3	**Marking of measuring circuit TERMINALS and JAWS**		P
	Terminals of measuring circuits used for mains voltage measurements and JAWS marked with “CAT III” and / or “CAT IV” and their RATED voltage to earth:		—

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement + Test	Result - Remark	Verdict
	Marked MEASUREMENT CATEGORIES .....:	CAT III, CAT II	P
	Marked RATED voltages to earth.....:	600V	P
EE.4	**Probe assemblies and accessories**		N/A
	One set of test leads of CLAMP MULTIMETER RATED according to IEC 61010-031, at least the highest voltage and MEASUREMENT CATEGORY of CLAMP MULTIMETER.		N/A
	RATED voltages .....:		N/A
	RATED MEASUREMENT CATEGORY .....:		N/A
EE.5	**Indicating devices**		P
EE.5.1	General		P
	No HAZARD occurred from reading a voltage value when the CLAMP MULTIMETER is operated for measuring voltages as RATED and in case of REASONABLE FORESEEABLE MISUSE		P
	Related tests of EE.5.2, EE.5.3 and EE.5.4 conducted.		P
EE.5.2	Battery level		P
	A voltage value displayed by the CLAMP MULTIMETER is not affected by the expected variation of its battery voltage.		P
	The display indicates an unambiguous voltage value during the test		P
EE.5.3	Over-range voltages		P
	Whenever the measured value is above the maximum absolute value of the range to which the CLAMP MULTIMETER is set, the display must indicate an unambiguously over-range voltage value.		P
	The display indicates an unambiguous voltage value during the test		P
EE.5.4	Permanent overvoltages		P
	The CLAMP MULTIMETER is able to withstand permanent overvoltages and continues to give an unambiguous indication of any HAZARDOUS LIVE voltages up to the maximum CLAMP MULTIMETER voltage.		P

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement — Test	Result — Remark	Verdict

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



Pollution degree..... : 2	Overvoltage category..... : CAT III 300V CAT II 600V

Area	Location	Insulation type	WORKING VOLTAGE			Test voltage	Comments (NOTE 3)
		(NOTE 1)	RMS V	Peak V	Frequency kHz	(NOTE 2) V	
A	Between live parts and accessible parts near battery cover	RI	600	-	-	4293Vrms	
B	Between live parts inside meter and accessible parts	RI	600	-	-	4293Vrms	
C	Between Live part and accessible button	RI	600	-	-	4293Vrms	
D	Between live parts and accessible parts near LCD	RI	600	-	-	4293Vrms	
E	Between JAW enclosure and Handheld part across the barrier	RI	600	-	-	4293Vrms	
F	Between terminals V and COM	BI	600	-	-	2564Vrms	
G	Between magnetic circuit of JAW and JAW enclosure	BI	600	-	-	2564Vrms	

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

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

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

Supplementary Information:

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement — Test	Result — Remark	Verdict

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

Area	Location (See Form A.14)	Insulation type (NOTE 1)	WORKING VOLTAGE (NOTE 2)			CLEARANCE		CREEPAGE DISTANCE		CTI	Verdict	Comments
			RMS [V]	Peak [V]	Frequency [kHz]	Required [mm]	Measured [mm]	Required [mm]	Measured [mm]			
For UT210A, UT210B												
A	Live part along soft key to accessible part	RI	600V	--	--	6.0	16.5	6.0	16.5	I	P	
B	Live part along LCD to accessible part	RI	600V	--	--	6.0	11.1	6.0	11.1	I	P	
C	Magnetic circuit to JAW enclosure	BI	600V	--	--	3.0	6.0	3.0	6.0	I	P	
D	Magnetic circuit along JAW end to JAW enclosure	BI	600V	--	--	3.0	4.5	3.0	4.5	I	P	
For UT210E, C, D												
E	Live part along the PCB to accessible enclosure	RI	600V	-	-	6.0	11.5	6.0	11.5	I	P	

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement — Test	Result — Remark	Verdict

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

Area	Location (See Form A.14)	Insulation type (NOTE 1)	WORKING VOLTAGE (NOTE 2)			CLEARANCE		CREEPAGE DISTANCE		CTI	Verdict	Comments
			RMS [V]	Peak [V]	Frequency [kHz]	Required [mm]	Measured [mm]	Required [mm]	Measured [mm]			
F	V to COM terminal before protective component on PCB	BI	600V	-	-	3.0	14.0	6.0	14.0	I	P	
G	Magnetic circuit to JAW enclosure	BI	600V	-	-	3.0	4.4	3.0	4.4	I	P	
H	Magnetic circuit along JAW end to JAW enclosure	BI	600V	-	-	3.0	4.3	3.0	4.3	I	P	

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

Input supply voltage…….:	-	V	-	Hz

Supplementary information:

CAT II 600V, pollution degree 2, material group I, limit:

Cl=Cr=3.0mm(BI) 6.0mm(RI)

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement — Test	Result — Remark	Verdict

6.8	**TABLE: Dielectric strength tests**	**Form A.18**	P
4.4.4.1 b)	Conformity after application of SINGLE FAULT CONDITIONS[1]		P
6.4	Primary means of protection[2]		P
6.6	Connections to external circuits		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 .....:	0m	—
	Test voltage correction factor (see table 10) .....:	1.16/1.22	—

Location or references from Forms A.1 and A.14	Clause or sub-clause	Humidity Yes/No	Working voltage [r.m.s./d.c.]	Test voltage [r.m.s./peak/d.c.]	Comments (NOTE)	Verdict
Internal live parts to outer accessible parts	6.4, 6.5.3	Yes	600	4293 V r.m.s.	1 min.	P
	4.4.4.1 b)	No	600	4293 V r.m.s.	1 min.	P
Core in the JAW to outer surface of JAW enclosure	6.4, 6.5.3	Yes	600	4293 V r.m.s.	1 min.	P
	4.4.4.1 b)	No	600	4293 V r.m.s.	1 min.	P
V to COM	6.4, 6.5.3	Yes	600	2564 V r.m.s.	1 min.	P
	4.4.4.1 b)	No	600	2564 V r.m.s..	1 min.	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/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement — Test	Result — Remark	Verdict

10.	**TABLE: Temperature Measurements** **Form A.26A**	P
10.1	Surface temperature limits – NORMAL CONDITION and / or SINGLE FAULT CONDITION	P
10.2	Temperature of windings – NORMAL CONDITION and / or SINGLE FAULT CONDITION	N/A
10.3	Other temperature measurements	P

Operating conditions:	Normal operation (UT210E)		
Frequency ..... :	60 Hz	Test room ambient temperature (ta) .. :	22.6- 22.8 °C
Voltage ..... :	600 V	Test duration ..... :	1 h 20 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
PCB near V terminal	23.2	40.4	130	P	
LCD display	23.2	40.4	85	P	
Knob	23.0	40.2	70	P	
Surface of Battery cover	22.9	40.1	85	P	
Surface of clamp jaw	23.0	40.2	85	P	

Operating conditions:	Short battery (UT210E)		
Frequency ..... :	60 Hz	Test room ambient temperature (ta) ...	22.7 °C
Voltage ..... :	600 V	Test duration	1 h 22 min

Part / Location	dT K	t_c °C	t_{max} °C	Verdict	Comments
PCB near V terminal	26.5	43.7	For ref.	-	
LCD display	28.8	46.0	105	P	
Knob	25.1	42.3	105	P	
Surface of Battery cover	70.0	87.2	105	P	
Surface of clamp jaw	22.9	40.1	105	P	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **40 °C** or max. RATED ambient)
t_{max} = maximum permitted temperature
NOTE 2 - see also 14.1 with reference to component operating conditions
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary
NOTE 4 - see Form A.26B for details of winding temperature measurements

Supplementary information:
Corrected to Rated max temperature 40℃

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement — Test	Result — Remark	Verdict

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

Operating conditions..:								
Frequency.....:	Hz	Test room ambient temperature (ta1/ta2)..:					/	°C (initial / final)
Voltage.....:	V	Test duration.....:					h	min
Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments

NOTE 1- R_{cold} = initial resistance; R_{warm} = final resistance
t_r = temperature rise; t_c = t_r corrected (t_c= t_r + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:
No transformers

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement — Test	Result — Remark	Verdict

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

Unique component reference or location	Application/function	Manufacturer / trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Standard	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
PCB	-	SHENZHEN BEN CHUANG ELECTRONIC CO LTD	BC-2	V-0, 130℃	UL 94	UL E257130
Alternative	-	Interchangeable	Interchangeable	V-0, 130℃	UL 94	UL
Enclosure	-	LG Chem Huizhou Petrochemical Co Ltd	AF312A	85℃, V-0, material group II, min thickness 1.5mm	ANSI/UL 746A	UL E476284
Clamp Case	-	SILVER AGE ENGINEERING PLASTICS (DONGGUAN) CO LTD	2540	60℃, flammability of V-0, material group II	ANSI/UL 746A	UL E225348
Varistor	DT1、DT2、DT3 on PCB	CENTRA SCIENCE CORP	CNR-07V561K	Varistor Voltage 504～616Vdc Withstand surge Current 1750A	ANSI/UL 1449 IEC/EN 61051	UL E316325
Alternative	-	CENTRA SCIENCE CORP	CNR-07D561K	Varistor Voltage 504～616Vdc Withstand surge Current 1200A	ANSI/UL 1449 IEC/EN 61051	UL E316325

IEC/EN 61010-1 & IEC/EN IEC 61010-2-032			
Clause	Requirement — Test	Result — Remark	Verdict

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

Unique component reference or location	Application/function	Manufacturer / trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Standard	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
Alternative	-	SHENZHEN YUHE ELECTRONIC CO LTD	07D561K	Varistor Voltage 504～616Vdc Withstand surge Current 1200A	ANSI/UL 1449 IEC/EN 61051	UL E483148
Alternative	-	DONG GUAN CITY JIANKUN ELECTRONICS TECHNOLOGY CO LTD	07D561K	Varistor Voltage 504～616Vdc Withstand surge Current 1200A	ANSI/UL 1449 IEC/EN 61051	UL E489693
PTC	PTC1, PTC2	Shen Zhen Weilin electronics Co. LTD	WMZ12A-152M003	1.5KΩ±20% Withstand 600V	UL 1434	UL E232204

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

Appendix 1 – Product Photos

Photo 1 - Front view of UT210A, UT210B, UT210E

Photo 2 - Rear view of UT210A, UT210B, UT210E

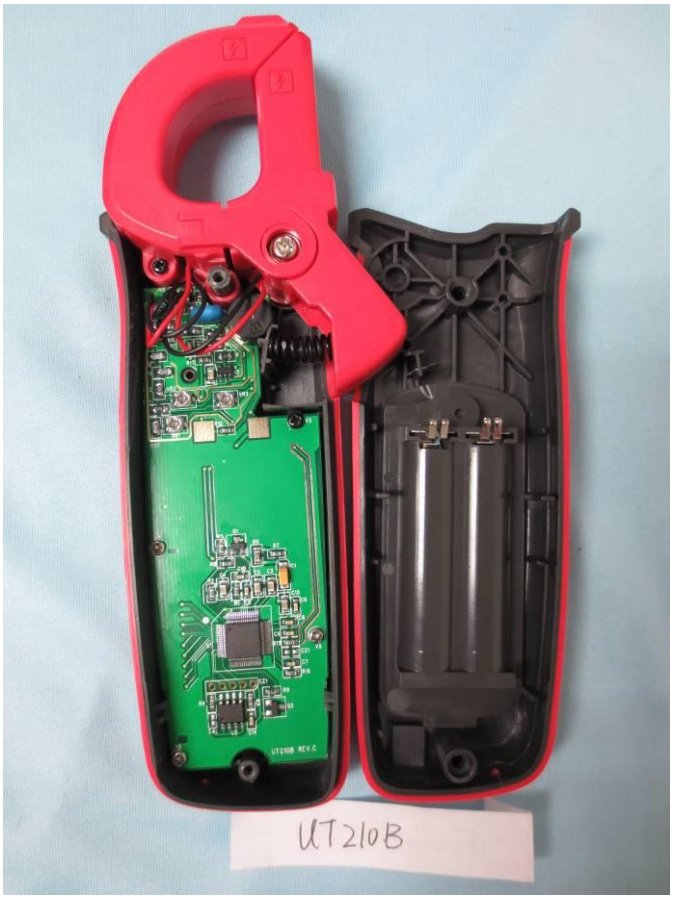


Photo 3 - Internal view (UT210B)

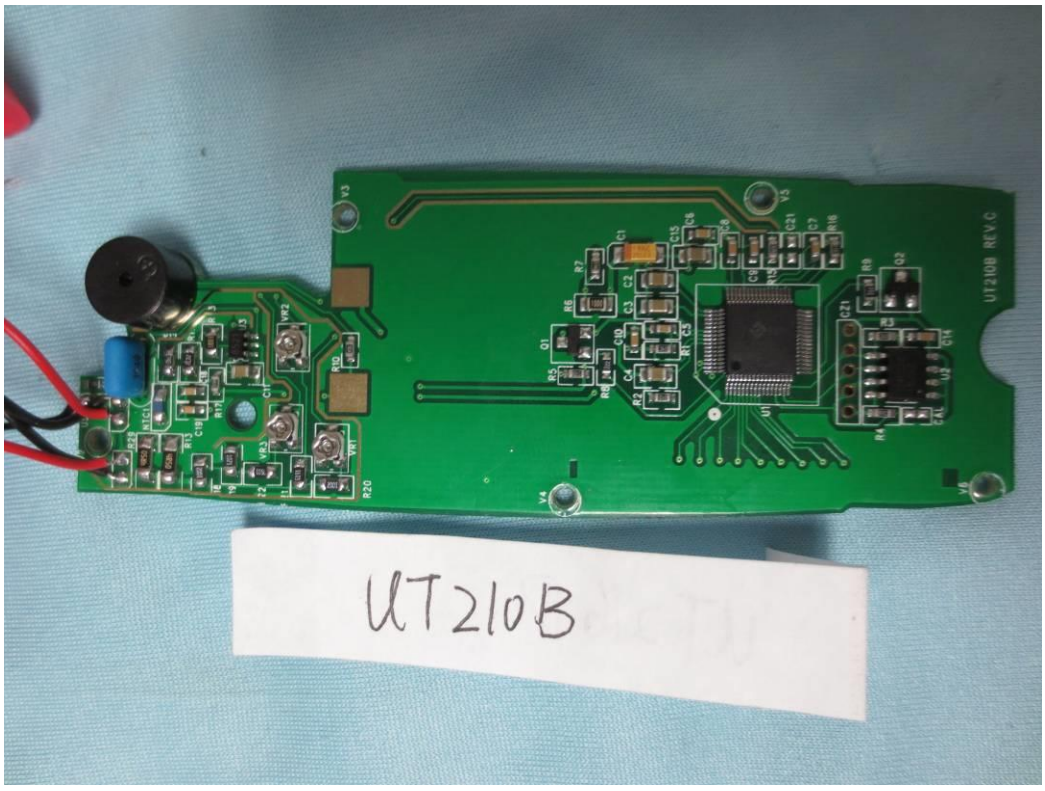


Photo 4 - PCB view (UT210B)

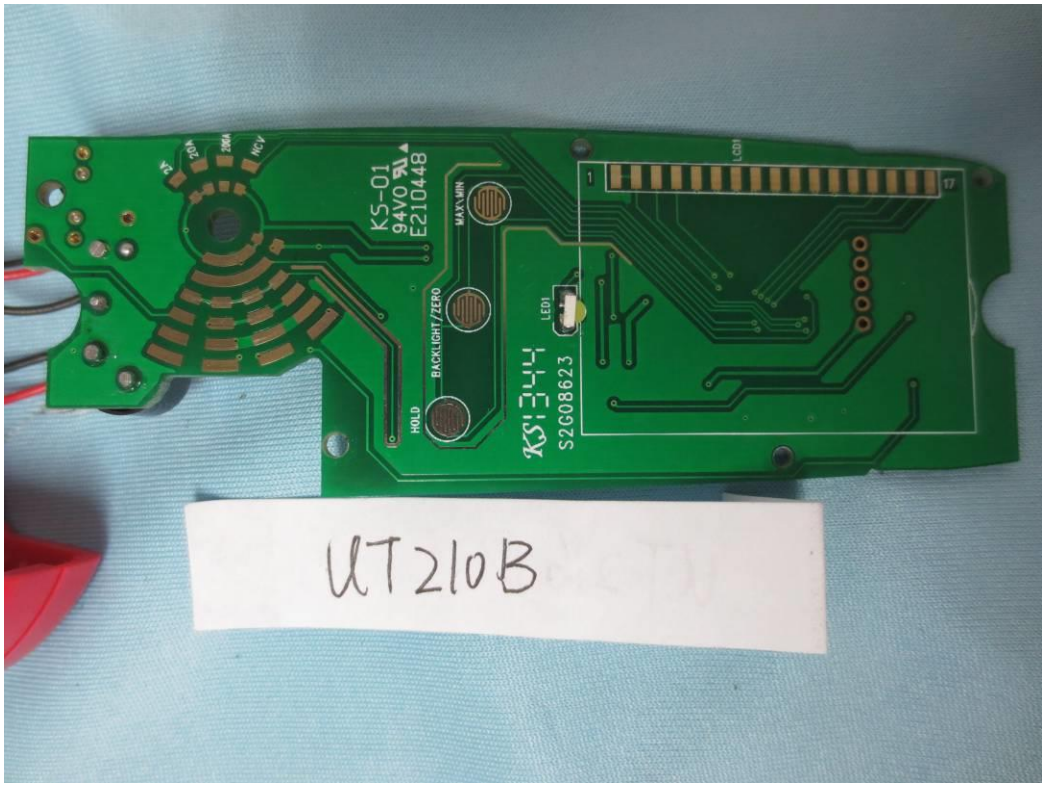


Photo 5 - PCB view (UT210B)

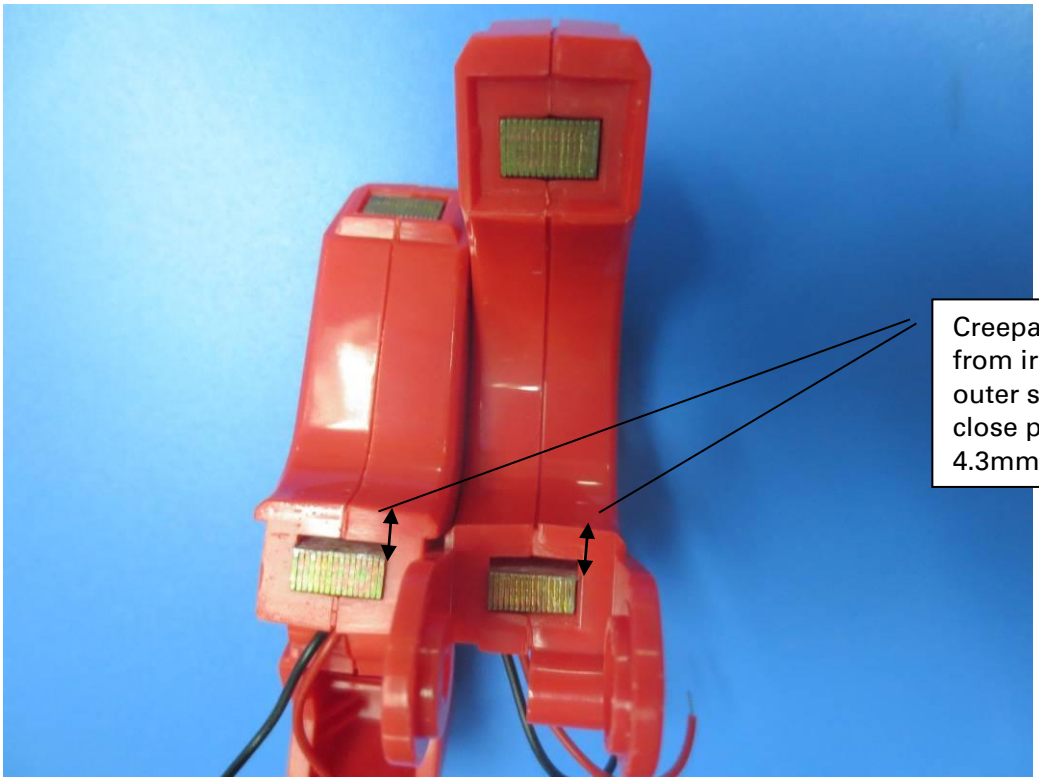


Photo 6 - JAW (UT210B)

Photo 7 - JAW internal view (UT210B)

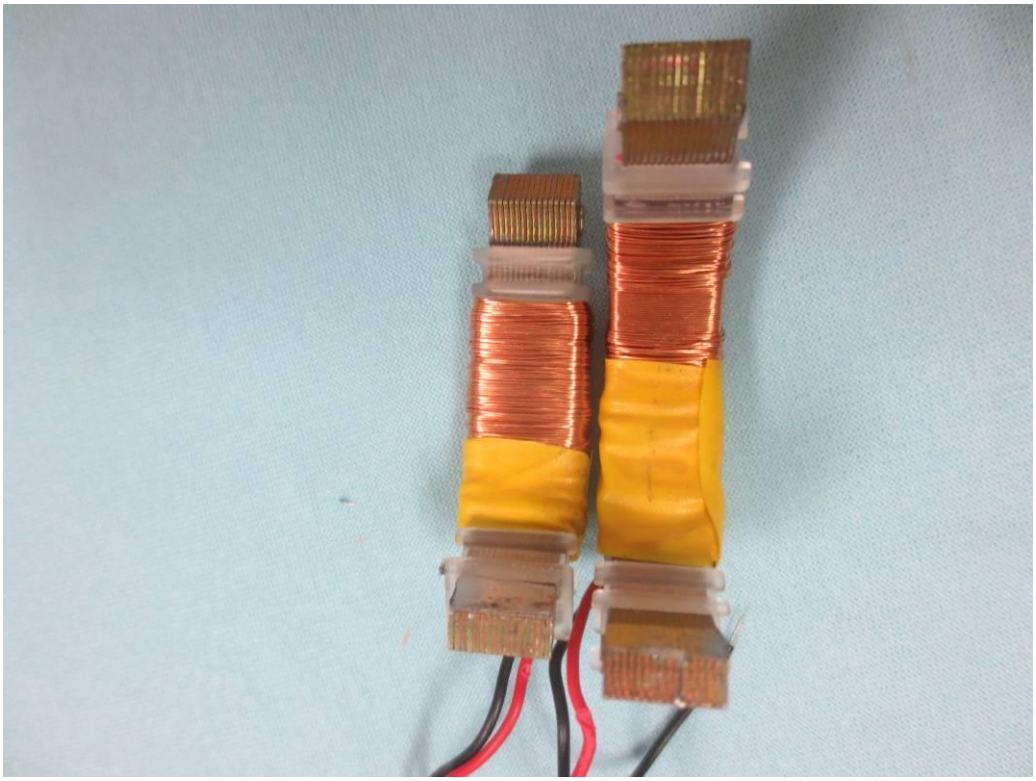


Photo 8 - Iron core of JAW (UT210B)

Remark:
For the appearance, construction and internal circuit of UT210A are almost identical with UT210B.
Photo of UT210B is shown as a representative.

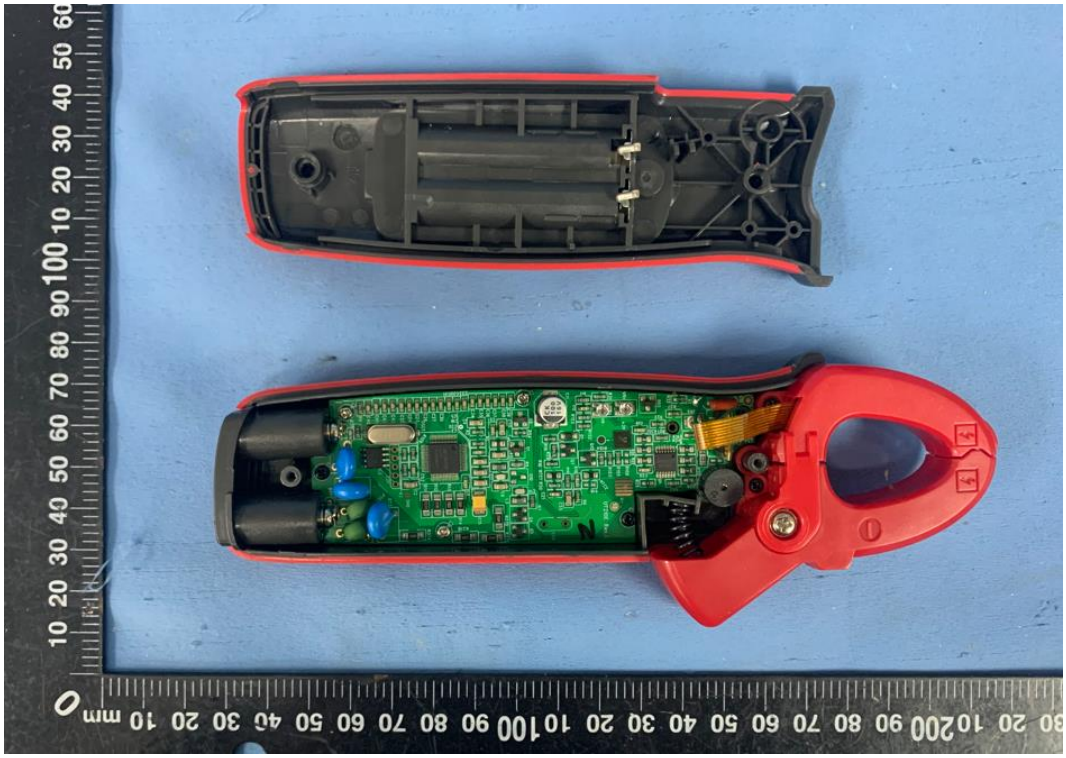


Photo 9 - Internal view of UT210E

Photo 10 - PCB top view of UT210E

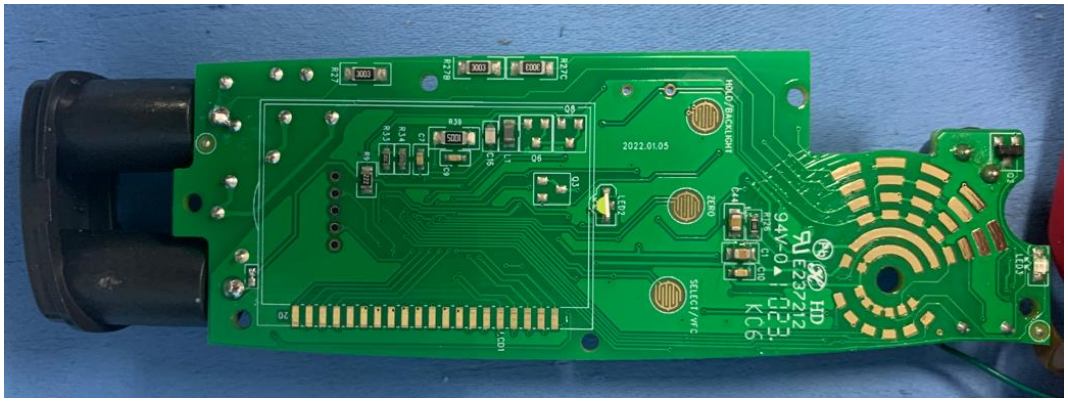


Photo 11 - PCB bottom view of UT210E

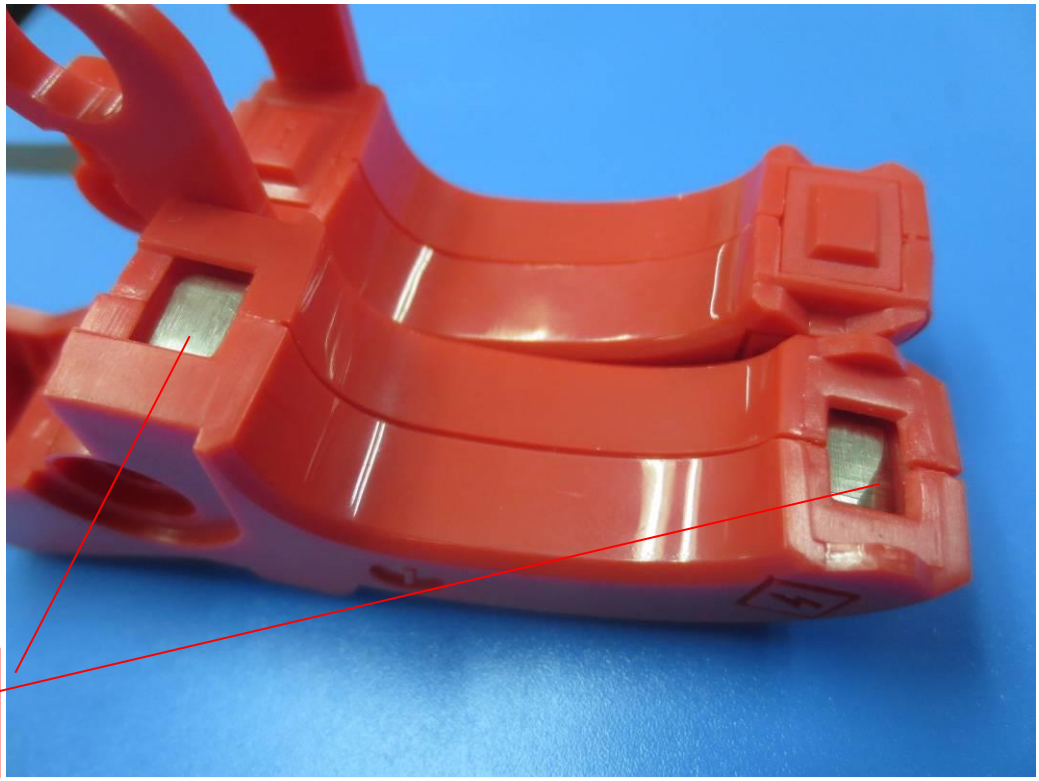


Photo 12 - JAW for UT210E

Photo 13 - JAW internal view of UT210E and UT210D

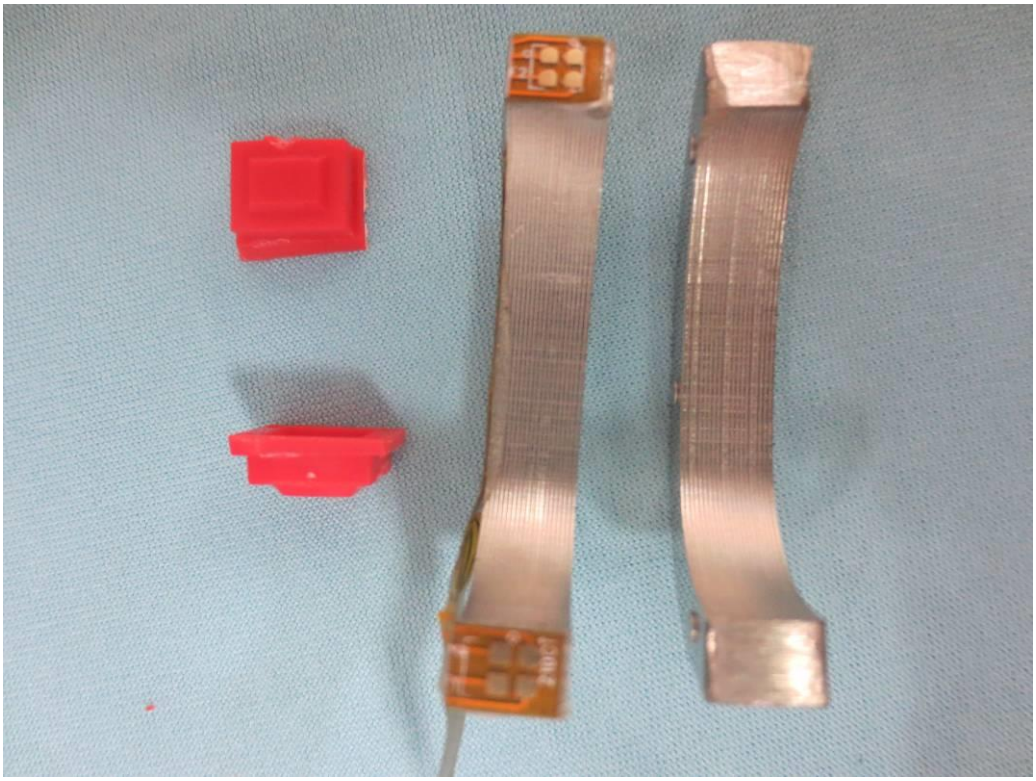


Photo 14 - Iron core of JAW of UT210E and UT210D

Remark: The construction of JAW of UT210D is the same as UT210E as shown above.

Photo 15 - front view of UT210C and UT210D

Photo 16 - rear view of UT210C and UT210D

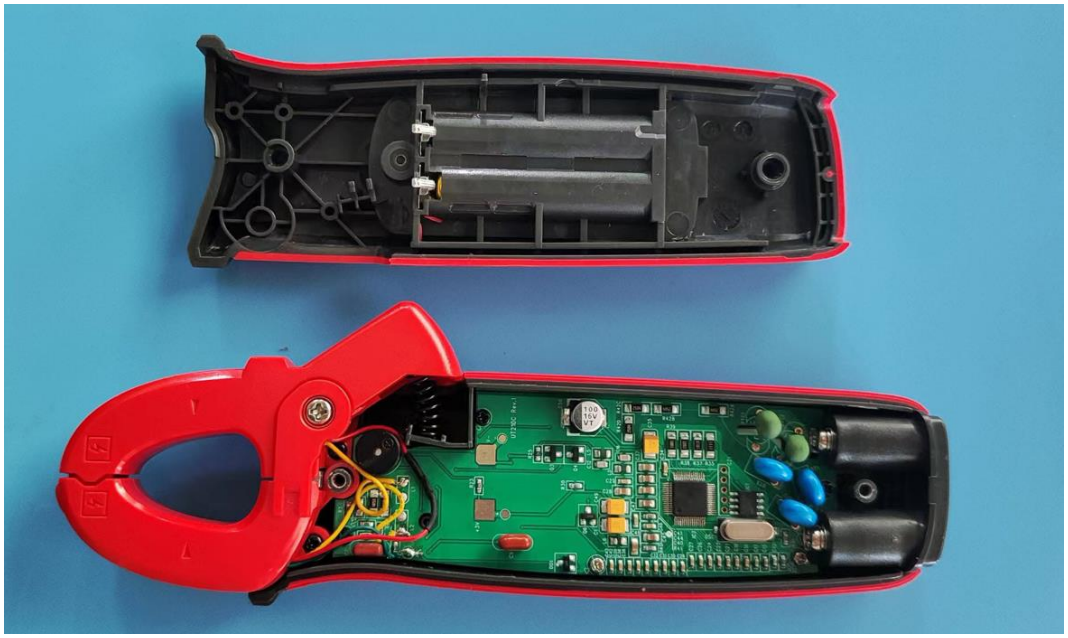


Photo 17 - Internal view of UT210C

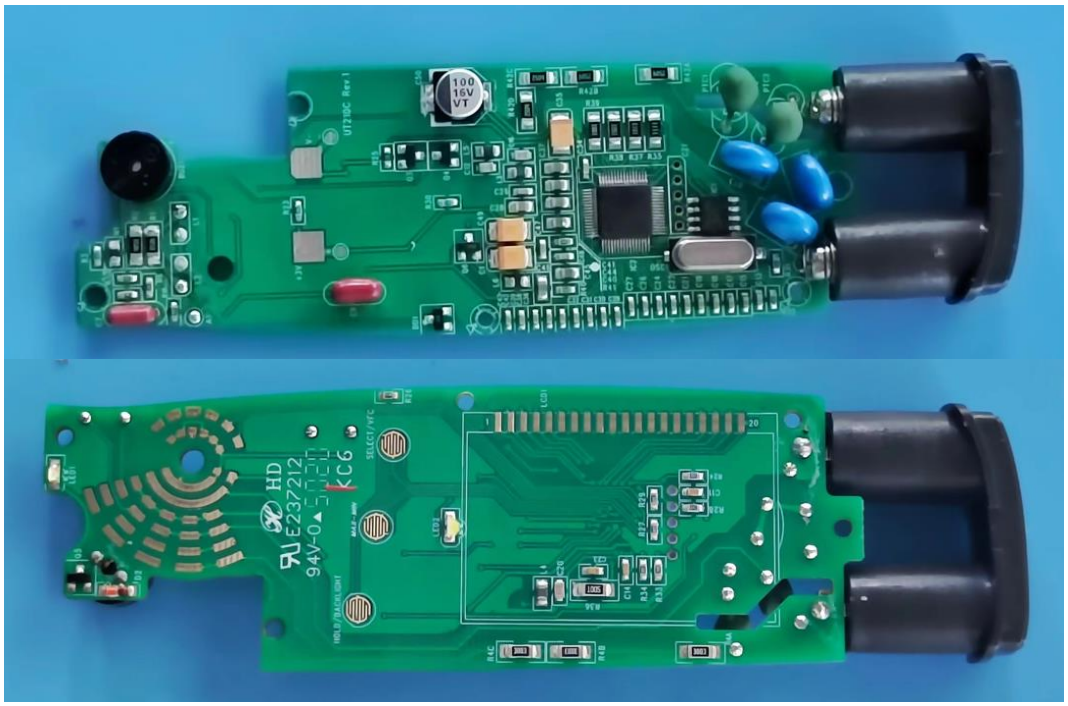


Photo 18 - PCB layout of UT210C

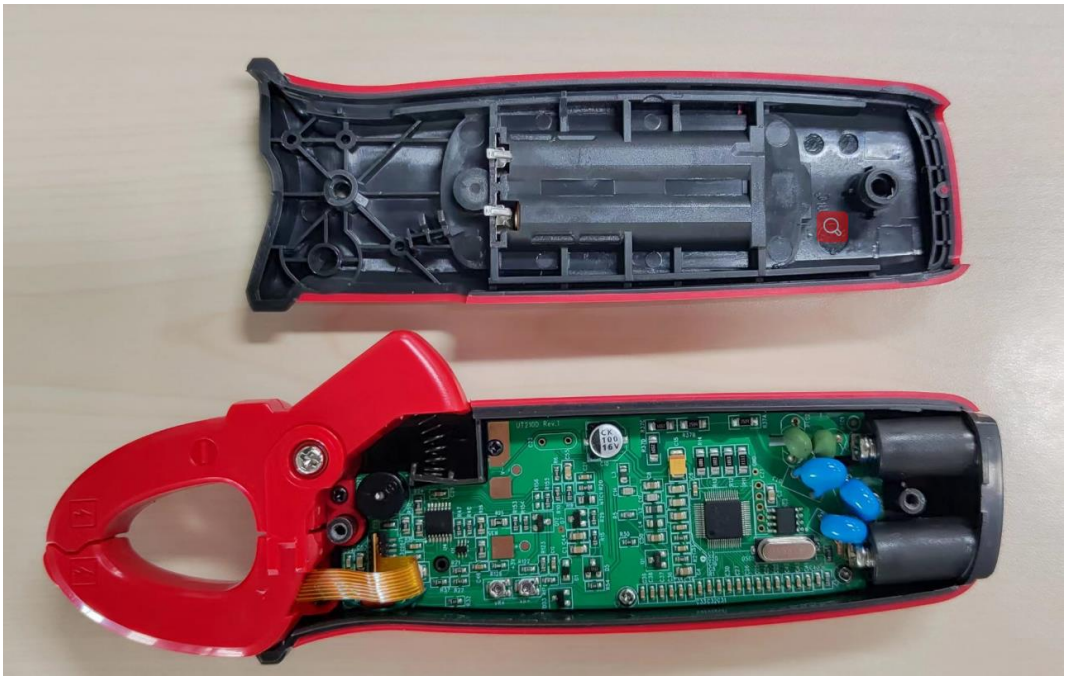


Photo 19 - Internal view of UT210D

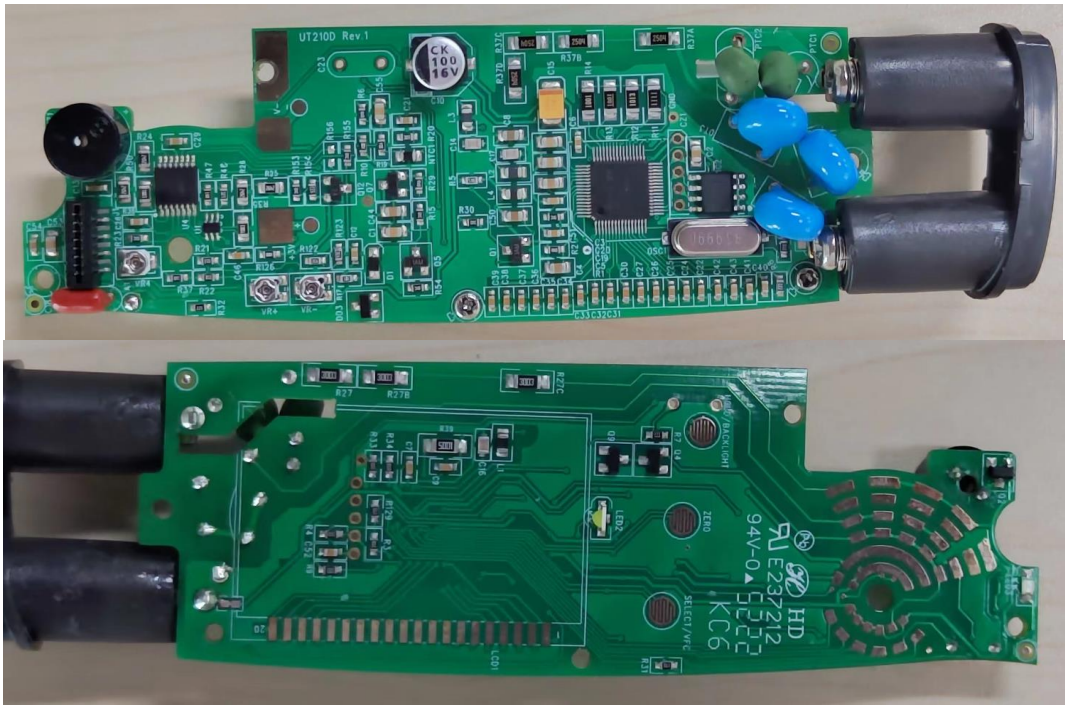


Photo 20 - PCB layout of UT210D

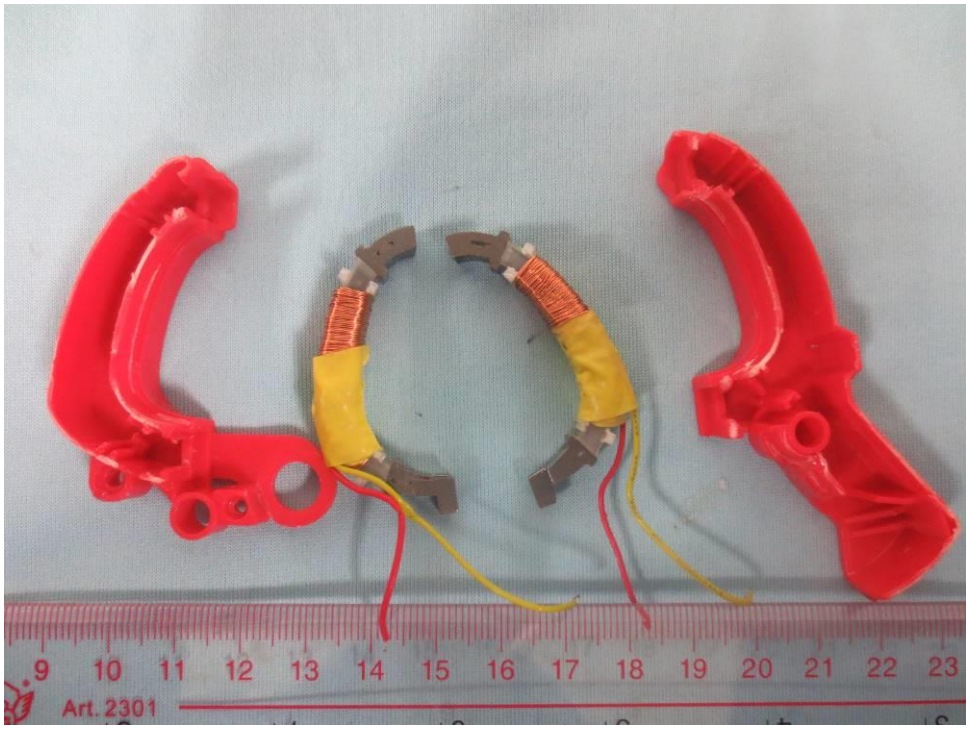


Photo 21 - Internal view of JAW for UT210C

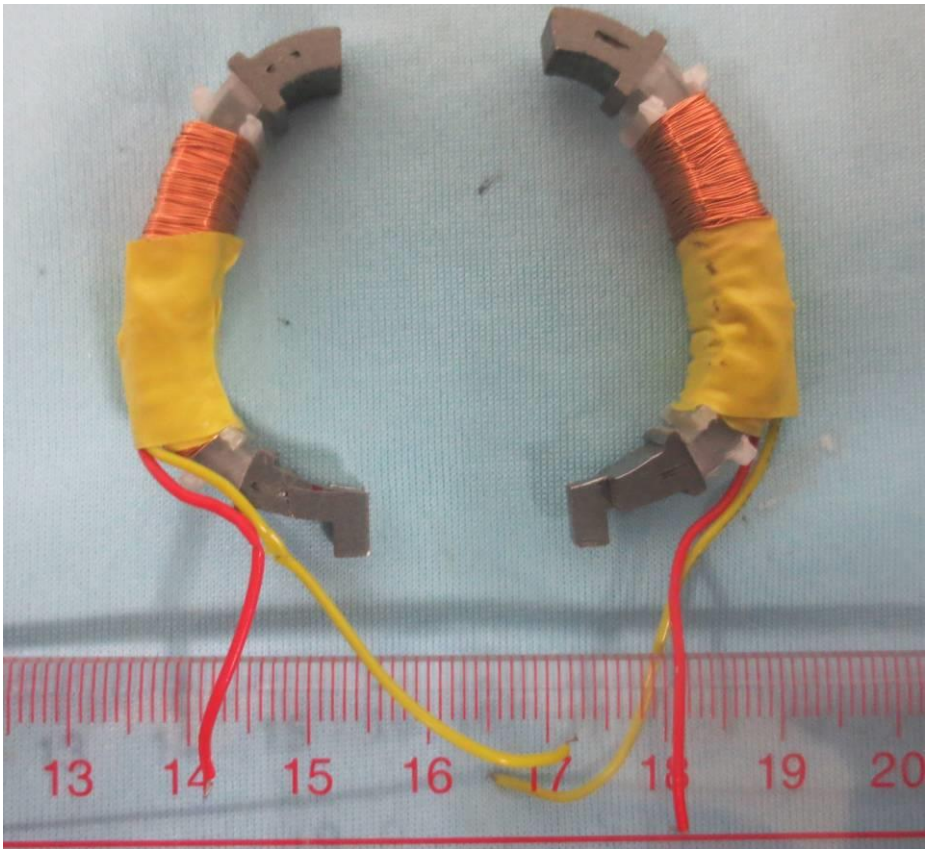


Photo 22 - Internal core view of JAW for UT210C

END OF REPORT