Test Report issued under the responsibility of:

TEST REPORT
IEC 60335-1
Safety of household and similar electrical appliances

Report Number. .....:	180601213SHA-001
Date of issue .....:	2019-03-20
Total number of pages.....:	177
Name of Testing Laboratory preparing the Report.....:	Intertek Testing Services Shanghai
Applicant's name.....:	GlobTek, Inc.
Address .....:	186 Veterans Dr. Northvale, NJ 07647 USA
Test specification:	
Standard .....:	IEC 60335-1:2010/COR1:2010/COR2:2010 /AMD1:2013/COR1:2014/AMD2:2016/COR1:2016
Test procedure .....:	CB Scheme
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC60335_1X
Test Report Form(s) Originator.....:	Nemko AS
Master TRF.....:	Dated 2016-10

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description .....:	Power supply (Limited use for House Hold products only)
Trade Mark .....:	GlobTek, Inc.
Manufacturer.....:	Same as applicant
Model/Type reference .....:	GT*86100-**-W2** The 1st "*" part can be 'M' or '-' or 'H' for market identification and not related to safety. The 2nd "*" denotes the rated output wattage designation, which can be "01" to "10", "01" means 1W, "10" means 10W, with interval of 1W. The 3rd "*" denotes the rated output voltage designation, which can be "5.0", "5.1", "5.2" or "05", "05.1", "05.2", "05" means 5.0V, "5.2" and "05.2" means 5.2V. The 4th "*" designates type of plug and can be E for European plug , U for British plug, blank for North American /Japan plug/Taiwan plug, C for China plug, A for Australia plug, K for Korea plug. The 5th "*" can be "-USB" or blank, -USB denote the power supplies use USB port, when it is blank, denote the power supplies use DC output wires.
Ratings .....:	Class II, IPX0, ta:40°C Input: 100-240V~, 50-60Hz, 0.3A Output: 5.0-5.2VDC, Max. 2A, Max. 10W.

Model List:

Model	Input	Output Voltage	Max. output current	Max. output power
GT*86100-**-W2**	100-240V~, 50-60Hz, 0.3A	5.0-5.2VDC	2A	10W

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ **CB Testing Laboratory:**	Intertek Testing Services Shanghai.	
Testing location/ address ..... :	Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China	
Tested by (name, function, signature) ..... :	Albert Zhou (Engineer)	Albert Zhou
Approved by (name, function, signature) .. :	Will Wang (Mandated reviewer)	Will Wang
☐ **Testing procedure: CTF Stage 1:**		
Testing location/ address ..... :		
Tested by (name, function, signature) ..... :		
Approved by (name, function, signature) .. :		
☐ **Testing procedure: CTF Stage 2:**		
Testing location/ address ..... :		
Tested by (name + signature) ..... :		
Witnessed by (name, function, signature). :		
Approved by (name, function, signature) .. :		
☐ **Testing procedure: CTF Stage 3:**		
☐ **Testing procedure: CTF Stage 4:**		
Testing location/ address ..... :		
Tested by (name, function, signature) ..... :		
Witnessed by (name, function, signature). :		
Approved by (name, function, signature) .. :		
Supervised by (name, function, signature) :		

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

Appendix no. 1: COMMON MODIFICATIONS FOR EN60335-1: 2012 + A11: 2014 + A13: 2017 (Group differences for CENELEC and national differences for United Kingdom), from page 109 to page 117, total 9 pages.

Appendix no. 2: Annex BB of IEC 61558-2-16:2009 + A1:2013, from page 118 to page 143, total 26 pages.

Appendix no. 3: National differences for Australia and New Zealand, from page 144 to page 147, total 4 pages.

Appendix no. 4: Photos, from page 148 to page 166, total 19 pages.

Appendix 5 to 9: Supplementary tests on plug portion (Page 167 to page 177, total 11 pages)

Summary of testing:

The test results presented in this report relate only to the item tested. The results indicates that the specimen complies with standard "IEC 60335-1:2010/COR1:2010/COR2:2010/AMD1:2013/COR1:2014 /AMD2:2016/COR1:2016".

Tests performed (name of test and test clause):

Marking Durability Test	7.14
Protection against Access to Live Parts	8.1.1 & 8.1.2
User Accessible Voltage and Current Test, Working voltage test	8.1.4& 22.42
Power Input	10.2
Heating Test	11.8
Leakage Current Test	13.2
Electric Strength Test	13.3
Humidity Test	15.3
Leakage Current Test	16.2
Electric Strength Test	16.3
Overload/ Short-Circuit Test	17
Abnormal Operation –Fault Conditions of Electronic Circuit	19.11& 19.12
Mechanical Strength	21.1
Strength of Accessible Parts of Solid Insulation	21.2
Undue Strain Test on Socket-Outlet	22.3
Plug Discharge Test	22.5
Creepage Distance and Clearance	29
Ball Pressure Test	30.1
Glow Wire Test	30.2.1 & 30.2.3

Testing location:

Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China

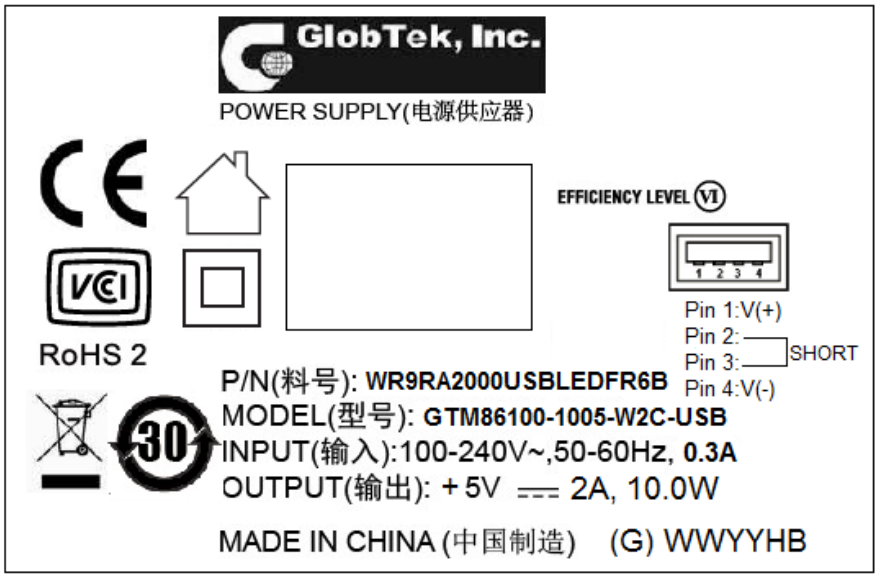
Summary of compliance with National Differences (List of countries addressed):

Group differences for CENELEC countries and national differences United Kingdom are considered according to EN60335-1: 2012 + A11: 2014 + A13: 2017.

The national differences for Australia and New Zealand have been checked according to IEC 60335-1: 2010 + A1: 2013 + A2: 2016.

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.



Note: Other models are with similar label as corresponding above models except different model name and output ratings.

When the equipment is vended to EU, then name and address of the importer or authorized representative within the EEA shall be added on the equipment.

Test item particulars ..... :	
Classification of installation and use ..... :	Class II and for indoor use only
Supply Connection ..... :	Direct plug-in
..... :	
Possible test case verdicts:	
- test case does not apply to the test object .....:	N/A
- test object does meet the requirement .....:	P (Pass)
- test object does not meet the requirement .....:	F (Fail)
Testing .....:	
Date of receipt of test item .....:	2018-06-14
Date (s) of performance of tests .....:	2018-06-14 to 2018-09-20

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 appended table)" refers to a table appended to the report.
Throughout this report a ☐ comma / ☒ point is used as the decimal separator.
Through the report, models GTM86100-1005-W2C and GTM86100-1005-W2E-USB are tested as typical models.
Once the relevant part 2 is published, the original certificate and test report needs to be recalled and retesting done for the part 2.

Engineering Judgement EJ-GLOB-E.SAF-46 was also considered.

Note for clause 25.8: It is acceptable that the cross-sectional area of the output wires is less than 0.5 mm^2, based on the following technical rationale: 1) The output of the transformer is a non-hazardous output voltage (describe the actual voltage). 2) The temperature test during normal and abnormal operation complies with the requirement of the standard.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :	☒ **Yes** ☐ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) .....:	1. GlobTek (Suzhou) Co., Ltd Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou, 215021,JiangSu, China 2. GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 USA

General product information:

The products are power supplies limited use for household only.
All models have the similar circuit schematic, components, critical components and also the similar construction. The difference is minor secondary circuit, plug type, output ratings and output wires.
Direct plug-in power supplies are provided with suitable external enclosure. The external enclosure and plug holder parts of the enclosure are ultrasonic welded.

The products are not intended to be used in maximum ambient temperature exceed of 40 °C.

The products are not intended to use in environment which altitude exceed 5000m.

For EU plug and AU plug see attached plug test reports. Other plugs are not evaluated, should be tested during national approval.

Abbreviations used in the report:

- normal conditions	**N.C**.	- single fault conditions	**S.F.C**
- functional insulation	**FI**	- basic insulation	**BI**
- double insulation	**DI**	- supplementary insulation	**SI**
- between parts of opposite polarity	**BOP**	- reinforced insulation	**RI**

Indicate used abbreviations (if any)

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

5	**GENERAL CONDITIONS FOR THE TESTS**		P
	Tests performed according to clause 5, e.g. nature of supply, sequence of testing, etc.		P
6	**CLASSIFICATION**		**P**
6.1	Protection against electric shock: Class 0, 0I, I, II, III .... :	Class II	P
	For a class III construction with a detachable power supply part the appliance is classified according to the detachable power supply part		N/A
6.2	Protection against harmful ingress of water	IPX0	N/A
7	**MARKING AND INSTRUCTIONS**		**P**
7.1	Rated voltage or voltage range (V) .... :	100-240VAC	P
	Symbol for nature of supply, or .... :		N/A
	Rated frequency (Hz) .... :	50-60Hz	P
	Rated power input (W), or .... :		N/A
	Rated current (A) .... :	0.3A	P
	Manufacturer's or responsible vendor's name, trademark or identification mark..... ..... :	GlobTek, Inc.	P
	Model or type reference .... :	GT*86100-**-W2**	P
	Symbol IEC 60417-5172, for class II appliances		P
	IP number, other than IPX0..... ..... :	IPX0	N/A
	Symbol IEC 60417-5180, for class III appliances, unless		N/A
	the appliance is operated by batteries only, or		N/A
	for appliances powered by rechargeable batteries recharged in the appliance		N/A
	Symbol IEC 60417-5018, for class II and class III appliances incorporating a functional earth		N/A
	Symbol IEC 60417-5036, for the enclosure of electrically-operated water valves in external hose-sets for connection of an appliance to the water mains, if the working voltage exceeds extra-low voltage		N/A
7.2	Warning for stationary appliances for multiple supply		N/A
	Warning placed in vicinity of terminal cover		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen	Supply voltage and frequency	P
	Different rated values marked with the values separated by an oblique stroke		N/A
7.4	Appliances adjustable for different rated voltages or rated frequencies, the voltage or the frequency setting is clearly discernible	Not adjustable	N/A
	Requirement met if frequent changes are not required and the rated voltage or rated frequency to which the appliance is to be adjusted is determined from a wiring diagram		N/A
7.5	Appliances with more than one rated voltage or one or more rated voltage ranges, marked with rated input or rated current for each rated voltage or range, unless	Only one rated voltage range	N/A
	the power input or current are related to the arithmetic mean value of the rated voltage range		N/A
	Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear		N/A
7.6	Correct symbols used		P
	Symbol for nature of supply placed next to rated voltage		P
	Symbol for class II appliances placed unlikely to be confused with other marking	Class II	P
	Units of physical quantities and their symbols according to international standardized system	No such symbols for physical quantities	N/A
7.7	Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply, unless	Not multiple supply	N/A
	correct mode of connection is obvious		N/A
7.8	Except for type Z attachment, terminals for connection to the supply mains indicated as follows:		N/A
	- marking of terminals exclusively for the neutral conductor (letter N)	No such terminals	N/A
	- marking of protective earthing terminals (symbol IEC 60417-5019)		N/A
	- marking of functional earthing terminals (symbol IEC 60417-5018)		N/A
	- marking not placed on removable parts		N/A
7.9	Marking or placing of switches which may cause a hazard	No switch	N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means .... :	No switch	N/A
	This applies also to switches which are part of a control		N/A
	If figures are used, the off position indicated by the figure 0		N/A
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		N/A
7.11	Indication for direction of adjustment of controls	No adjustment controls	N/A
7.12	Instructions for safe use provided		P
	Details concerning precautions during user maintenance	No maintenance required	N/A
	The instructions state that:		P
	- the appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction		P
	- children being supervised not to play with the appliance		P
	For a part of class III construction supplied from a detachable power supply unit, the instructions state that the appliance is only to be used with the unit provided	Class II	N/A
	Instructions for class III appliances state that it must only be supplied at SELV, unless	Class II	N/A
	it is a battery-operated appliance, the battery being charged outside the appliance	Not battery-operated appliance	N/A
	For appliances for altitudes exceeding 2000 m, the maximum altitude is stated..... ..... :	Up to 5000m	P
	The instructions for appliances incorporating a functional earth states that the appliance incorporates an earth connection for functional purposes only	No functional earth	N/A
7.12.1	Sufficient details for installation supplied	No requirement for installation	N/A
	For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated	Not for water mains	N/A
	If different rated voltages or different rated frequencies are marked, the instructions state what action to be taken to adjust the appliance	Self-adaption and no further adjustment required	N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
7.12.2	Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules	Portable appliances	N/A
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause 11; instructions state that the fixed wiring must be protected	Not for fixed wiring	N/A
7.12.4	Instructions for built-in appliances:		N/A
	- dimensions of space	Not for built-in use	N/A
	- dimensions and position of supporting and fixing		N/A
	- minimum distances between parts and surrounding structure		N/A
	- minimum dimensions of ventilating openings and arrangement		N/A
	- connection to supply mains and interconnection of separate components		N/A
	- allow disconnection of the appliance after installation, by accessible plug or a switch in the fixed wiring, unless		N/A
	a switch complying with 24.3		N/A
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord		N/A
	Replacement cord instructions, type Y attachment	For model with output wire	P
	Replacement cord instructions, type Z attachment		N/A
7.12.6	Caution in the instructions for appliances incorporating a non-self-resetting thermal cut-out that is reset by disconnection of the supply mains, if this cut-out is required to comply with the standard	No non-self-resetting thermal cut-out	N/A
7.12.7	Instructions for fixed appliances stating how the appliance is to be fixed	Not fixed appliances	N/A
7.12.8	Instructions for appliances connected to the water mains:		N/A
	- max. inlet water pressure (Pa) .... :	Not for connecting to water mains	N/A
	- min. inlet water pressure, if necessary (Pa)..... .... :		N/A
	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
7.12.9	Instructions specified in 7.12 and from 7.12.1 to 7.12.8 appear together before any other instructions supplied with the appliance		P
	These instructions may be supplied with the appliance separately from any functional use booklet		P
	They may follow the description of the appliance that identifies parts, or follow the drawings/sketches		P
	In addition, instructions are also available in an alternative format such as on a website or on request from the user in a format such as a DVD		P
	In addition, instructions are also available in an alternative format such as on a website or in a format such as a DVD .... :	Available on a website	P
7.13	Instructions and other texts in an official language	English	P
7.14	Markings clearly legible and durable:		P
	Signal words WARNING, CAUTION, DANGER in uppercase having a height as specified .... :	Min. 2.0mm	P
	Uppercase letter of the text explaining the signal word not smaller than 1,6 mm .... :	Min. 1.6mm	P
	Moulded in, engraved, or stamped markings either raised above or have a depth below the surface of at least 0,25 mm, unless	Not moulded in, engraved, or stamped markings.	N/A
	contrasting colours are used		N/A
	Markings checked by inspection, measurement and rubbing test as specified		P
7.15	Markings on a main part		P
	Marking clearly discernible from the outside, if necessary after removal of a cover		P
	For portable appliances, cover can be removed or opened without a tool	No removable cover without tools	N/A
	For stationary appliances, name, trademark or identification mark and model or type reference visible after installation	Portable appliances	N/A
	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions	Portable appliances	N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Indications for switches and controls placed on or near the components. Marking not on parts which can be positioned or repositioned in such a way that the marking is misleading	No switches and controls	N/A
	The symbol IEC 60417-5018 placed next to the symbol IEC 60417-5172 or IEC 60417-5180	No functional earth	N/A
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link	No replaceable thermal link or fuse link	N/A
8	**PROTECTION AGAINST ACCESS TO LIVE PARTS**		**P**
8.1	Adequate protection against accidental contact with live parts		P
8.1.1	Requirement applies for all positions, detachable parts removed		P
	Lamps behind a detachable cover not removed, if conditions met	No removable lamps	N/A
	Insertion or removal of lamps, protection against contact with live parts of the lamp cap		N/A
	Use of test probe B of IEC 61032, with a force not exceeding 1 N: no contact with live parts		P
	Use of test probe B of IEC 61032 through openings, with a force of 20N: no contact with live parts		P
8.1.2	Use of test probe 13 of IEC 61032, with a force not exceeding 1 N, through openings in class 0 appliances and class II appliances/constructions: no contact with live parts	Class II	P
	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts		N/A
8.1.3	For appliances other than class II, use of test probe 41 of IEC 61032, with a force not exceeding 1 N: no contact with live parts of visible glowing heating elements or supporting parts	Class II	N/A
	For a single switching action obtained by a switching device, requirements as specified	No switching device	N/A
	For appliances with a supply cord and without a switching device, the single switching action may be obtained by the withdrawal of the plug	Direct plug-in type	N/A
8.1.4	Accessible part not considered live if:		P
	- safety extra-low a.c. voltage: peak value not exceeding 42.4 V		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- safety extra-low d.c. voltage: not exceeding 42.4 V	Max output voltage:5.2 VDC	P
	- or separated from live parts by protective impedance		P
	If protective impedance: d.c. current not exceeding 2 mA, and		N/A
	a.c. peak value not exceeding 0.7 mA	Max. 0.132mA	P
	- for peak values over 42.4 V up to and including 450 V, capacitance not exceeding 0,1 μF	0.0011μF	P
	- for peak values over 450 V up to and including 15 kV, discharge not exceeding 45 μC		N/A
	- for peak values over 15kV, the energy in the discharge not exceeding 350 mJ		N/A
8.1.5	Live parts protected at least by basic insulation before installation or assembly:		N/A
	- built-in appliances	No installation or assembly required	N/A
	- fixed appliances		N/A
	- appliances delivered in separate units		N/A
8.2	Class II appliances and constructions constructed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only	Class II	P
	Only possible to touch parts separated from live parts by double or reinforced insulation		P
9	**STARTING OF MOTOR-OPERATED APPLIANCES**		**N/A**
	Requirements and tests are specified in part 2 when necessary		N/A
10	**POWER INPUT AND CURRENT**		**P**
10.1	Power input at normal operating temperature, rated voltage and normal operation not deviating from rated power input by more than shown in table 1 :	(see appended table)	N/A
	If the power input varies throughout the operating cycle and the maximum value of the power input exceeds, by a factor greater than two, the arithmetic mean value of the power input occurring during a representative period, the power input is the maximum value that is exceeded for more than 10 % of the representative period	No duty cycle	N/A
	Otherwise the power input is the arithmetic mean value		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		N/A
	the rated power input is related to the arithmetic mean value		N/A
10.2	Current at normal operating temperature, rated voltage and normal operation not deviating from rated current by more than shown in table 2 ..... :	(see appended table)	P
	If the current varies throughout the operating cycle and the maximum value of the current exceeds, by a factor greater than two, the arithmetic mean value of the current occurring during a representative period, the current is the maximum value that is exceeded for more than 10 % of the representative period	No duty cycle	N/A
	Otherwise the current is the arithmetic mean value		N/A
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless	100-240VAC	P
	the rated current is related to the arithmetic mean value of the range		N/A
11	**HEATING**		**P**
11.1	No excessive temperatures in normal use		P
11.2	The appliance is held, placed or fixed in position as described ..... :	Plugged into socket in wall	P
11.3	Temperature rises, other than of windings, determined by thermocouples		P
	Temperature rises of windings determined by resistance method, unless	Switching transformer	N/A
	the windings are non-uniform or it is difficult to make the necessary connections		P
11.4	Heating appliances operated under normal operation at 1.15 times rated power input (W) .... :		N/A
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V) ..... :	94V and 254.4V	P
11.6	Combined appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V) ..... :		N/A
11.7	Operation duration corresponding to the most unfavourable conditions of normal use		P
11.8	Temperature rises monitored continuously and not exceeding the values in table 3 ..... :	(see appended table)	P

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

	If the temperature rise of a motor winding exceeds the value of table 3, or	No motor	N/A
	if there is doubt with regard to classification of insulation,		N/A
	tests of Annex C are carried out		N/A
	Sealing compound does not flow out	No sealing compound	N/A
	Protective devices do not operate, except		P
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4		N/A
13	**LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE**		**P**
13.1	Leakage current not excessive and electric strength adequate		P
	Heating appliances operated at 1.15 times the rated power input (W) ..... :		N/A
	Motor-operated appliances and combined appliances supplied at 1.06 times the rated voltage (V) ..... :	254.4V	P
	Protective impedance and radio interference filters disconnected before carrying out the tests		P
13.2	The leakage current is measured by means of the circuit described in Figure 4 of IEC 60990:1999		P
	For class 0I appliances and class I appliances, except parts of class II construction, C may be replaced by a low impedance ammeter	Class II	N/A
	Leakage current measurements ..... :	(see appended table)	P
13.3	The appliance is disconnected from the supply		P
	Electric strength tests according to table 4 ..... :	(see appended table)	P
	No breakdown during the tests		P
14	**TRANSIENT OVERVOLTAGES**		**N/A**
	Appliances withstand the transient over-voltages to which they may be subjected	No transient overvoltage	N/A
	Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6 ..... :	(see appended table)	N/A
	No flashover during the test, unless		N/A
	of functional insulation if the appliance complies with clause 19 with the clearance short-circuited		N/A
15	**MOISTURE RESISTANCE**		**P**

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
15.1	Enclosure provides the degree of moisture protection according to classification of the appliance	IPX0	N/A
	Compliance checked as specified in 15.1.1, taking into account 15.1.2, followed by the electric strength test of 16.3		N/A
	No trace of water on insulation which can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A
15.1.1	Appliances, other than IPX0, subjected to tests as specified in IEC 60529 ..... :	IPX0	N/A
	Water valves containing live parts in external hoses for connection of an appliance to the water mains tested as specified for IPX7 appliances		N/A
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test	Not hand-held appliance	N/A
	Built-in appliances installed according to the instructions	Not built-in appliances	N/A
	Appliances placed or used on the floor or table placed on a horizontal unperforated support		N/A
	Appliances normally fixed to a wall and appliances with pins for insertion into socket-outlets are mounted on a wooden board		N/A
	For IPX3 appliances, the base of wall mounted appliances is placed at the same level as the pivot axis of the oscillating tube		N/A
	For IPX4 appliances, the horizontal centre line of the appliance is aligned with the pivot axis of the oscillating tube, and		N/A
	for appliances normally used on the floor or table, the movement is limited to two times 90° for a period of 5 min, the support being placed at the level of the pivot axis of the oscillating tube		N/A
	Wall-mounted appliances, take into account the distance to the floor stated in the instructions		N/A
	Appliances normally fixed to a ceiling are mounted underneath a horizontal unperforated support, the pivot axis of the oscillating tube located at the level of the underside of the support, and		N/A
	for IPX4 appliances, the movement of the tube is limited to two times 90° from the vertical for a period of 5 min		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Detachable parts subjected to the relevant treatment with the main part		N/A
	However, if a part has to be removed for user maintenance and a tool is needed, this part is not removed		N/A
15.2	Spillage of liquid does not affect the electrical insulation		N/A
	Spillage solution comprising water containing approximately 1 % NaCl and 0,6 % rinsing agent		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Appliances incorporating an appliance inlet tested with or without an connector, whichever is most unfavourable		N/A
	Detachable parts are removed		N/A
	Overfilling test with additional amount of the solution, over a period of 1 min (l)..... :		N/A
	The appliance withstands the electric strength test of 16.3		N/A
	No trace of water on insulation that can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A
15.3	Appliances proof against humid conditions		P
	Checked by test Cab: Damp heat steady state in IEC 60068-2-78		P
	Detachable parts removed and subjected, if necessary, to the humidity test with the main part	No detachable part	N/A
	Humidity test for 48 h in a humidity cabinet	Temp.: 22ºC, R.H.: 93%	P
	Reassembly of those parts that may have been removed		N/A
	The appliance withstands the tests of clause 16		P
16	**LEAKAGE CURRENT AND ELECTRIC STRENGTH**		**P**
16.1	Leakage current not excessive and electric strength adequate		P
	Protective impedance disconnected from live parts before carrying out the tests		P
	Tests carried out at room temperature and not connected to the supply		P
16.2	Single-phase appliances: test voltage 1.06 times rated voltage (V)..... :	254.4V	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Three-phase appliances: test voltage 1.06 times rated voltage divided by √3 (V)..... :		N/A
	Leakage current measurements ..... :	(see appended table)	P
	Limit values doubled if:		N/A
	- all controls have an off position in all poles, or		N/A
	- the appliance has no control other than a thermal cut-out, or		N/A
	- all thermostats, temperature limiters and energy regulators do not have an off position, or		N/A
	- the appliance has radio interference filters		N/A
	With the radio interference filters disconnected, the leakage current do not exceed limits specified .... :	(see appended table)	P
16.3	Electric strength tests according to table 7 ..... :	(see appended table)	P
	Test voltage applied between the supply cord and inlet bushing and cord guard and cord anchorage as specified..... :	(see appended table)	P
	No breakdown during the tests		N/A
17	**OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS**		**P**
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use ..... :	(see appended table)	P
	Appliance supplied with 1.06 or 0.94 times rated voltage under the most unfavourable short-circuit or overload likely to occur in normal use (V) ..... :	94V/254.4 V, maximum input: 14.0W, 0.118A	P
	Basic insulation is not short-circuited		P
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K	Max. Temperature rise of Output cord: 24.8K (GTM86100-1005-W2C)	P
	Temperature of the winding not exceeding the value specified in table 8	Max. Temperature of the winding: 107.4°C (GTM86100-1005-W2E-USB)	P
	However, limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1		N/A
18	**ENDURANCE**		**N/A**
	Requirements and tests are specified in part 2 when necessary		N/A
19	**ABNORMAL OPERATION**		**P**

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Clause	Requirement + Test	Result - Remark	Verdict
19.1	The risk of fire, mechanical damage or electric shock under abnormal or careless operation obviated		P
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe ..... :	(see appended table)	P
	Appliances incorporating heating elements subjected to the tests of 19.2 and 19.3, and	No heating elements	N/A
	if the appliance also has a control that limit the temperature during clause 11 it is subjected to the test of 19.4, and	No such control	N/A
	if applicable, to the test of 19.5		N/A
	Appliances incorporating PTC heating elements are also subjected to the test of 19.6	No PTC heating elements	N/A
	Appliances incorporating motors subjected to the tests of 19.7 to 19.10, as applicable	No motor	N/A
	Appliances incorporating electronic circuits subjected to the tests of 19.11 and 19.12, as applicable		P
	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11	No contactors or relays	N/A
	Appliances incorporating voltage selector switches subjected to the test of 19.15	No voltage selector switches	N/A
	Unless otherwise specified, the tests are continued until a non-self-resetting thermal cut-out operates, or		N/A
	until steady conditions are established		P
	If a heating element or intentionally weak part becomes open-circuited, the relevant test is repeated on a second sample	No heating element or intentionally weak part	N/A
19.2	Test of appliances with heating elements with restricted heat dissipation; test voltage (V), power input of 0.85 times rated power input (W) ..... :	No heating element	N/A
19.3	Test of 19.2 repeated; test voltage (V), power input of 1.24 times rated power input (W) ..... :		N/A
19.4	Test conditions as in clause 11, any control limiting the temperature during tests of clause 11 short-circuited		N/A
19.5	Test of 19.4 repeated on Class 0I and I appliances with tubular sheathed or embedded heating elements. No short-circuiting, but one end of the element connected to the sheath	No such component	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		N/A
	The test is not carried out on appliances intended to be permanently connected to fixed wiring and on appliances where an all-pole disconnection occurs during the test of 19.4		N/A
19.6	Appliances with PTC heating elements tested at rated voltage, establishing steady conditions	No PTC heating elements	N/A
	The working voltage of the PTC heating element is increased by 5% and the appliance is operated until steady conditions are re-established. The voltage is then increased in similar steps until 1.5 times working voltage or until the PTC heating element ruptures (V)..... :		N/A
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque, or	No rotor	N/A
	locking moving parts of other appliances		N/A
	Locked rotor, capacitors open-circuited one at a time		N/A
	Test repeated with capacitors short-circuited one at a time, unless		N/A
	the capacitor is of class S2 or S3 of IEC 60252-1		N/A
	Appliances with timer or programmer supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed..... :		N/A
	An electronic timer or programmer that operates to ensure compliance with the test before the maximum period under the conditions of Clause 11 is reached, is a protective electronic circuit		N/A
	Other appliances supplied with rated voltage for a period as specified ..... :		N/A
	Winding temperatures not exceeding values specified in table 8..... :	(see appended table)	N/A
19.8	Multi-phase motors operated at rated voltage with one phase disconnected	No motor	N/A
19.9	Running overload test on appliances incorporating motors intended to be remotely or automatically controlled or liable to be operated continuously	No motor	N/A
	Motor-operated and combined appliances for which 30.2.3 is applicable and that use overload protective devices relying on electronic circuits to protect the motor windings, are also subjected to the test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Winding temperatures not exceeding values as specified ..... :	(see appended table)	N/A
19.10	Series motor operated at 1.3 times rated voltage for 1 min (V) ..... :	No motor	N/A
	During the test, parts not being ejected from the appliance		N/A
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless		P
	they comply with the conditions specified in 19.11.1		P
	Appliances incorporating an electronic circuit that relies upon a programmable component to function correctly, subjected to the test of 19.11.4.8, unless	No such component	N/A
	restarting does not result in a hazard		N/A
	Appliances having a device with an off position obtained by electronic disconnection, or a device placing the appliance in a stand-by mode, subjected to the tests of 19.11.4	No such switch	N/A
	If the safety of the appliance under any of the fault conditions depends on the operation of a miniature fuse-link complying with IEC 60127, the test of 19.12 is carried out		P
	During and after each test the following is checked:		P
	- the temperature of the windings do not exceed the values specified in table 8	No higher temperature	P
	- the appliance complies with the conditions specified in 19.13		P
	- any current flowing through protective impedance not exceeding the limits specified in 8.1.4		P
	If a conductor of a printed board becomes open-circuited, the appliance is considered to have withstood the particular test, provided both of the following conditions are met:		N/A
	- the base material of the printed circuit board withstands the test of Annex E	No open of conductor of a printed board	N/A
	- any loosened conductor does not reduce clearance or creepage distances between live parts and accessible metal parts below the values specified in clause 29		N/A
19.11.1	Fault conditions a) to g) in 19.11.2 are not applied to circuits or parts of circuits meeting both of the following conditions:		P
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction of other parts of the appliance does not rely on the correct functioning of the electronic circuit		P
19.11.2	Fault conditions applied one at a time, the appliance operating under conditions specified in clause 11, but supplied at rated voltage, duration of the tests as specified:		P
	a) short circuit of functional insulation if clearances or creepage distances are less than the values specified in clause 29		P
	b) open circuit at the terminals of any component	Evaluated	P
	c) short circuit of capacitors, unless	Short-circuit C1	P
	they comply with IEC 60384-14	Y capacitors	P
	d) short circuit of any two terminals of an electronic component, other than integrated circuits	Short-circuit BD1, Q1	P
	This fault condition is not applied between the two circuits of an optocoupler		P
	e) failure of triacs in the diode mode		N/A
	f) failure of microprocessors and integrated circuits		P
	g) failure of an electronic power switching device		N/A
	Each low power circuit is short-circuited by connecting the low-power point to the pole of the supply source from which the measurements were made		N/A
19.11.3	If the appliance incorporates a protective electronic circuit that operates to ensure compliance with clause 19, the appliance is tested as specified		P
19.11.4	Appliances having a device with an off position obtained by electronic disconnection, or		N/A
	a device that can be placed in the stand-by mode,		N/A
	subjected to the tests of 19.11.4.1 to 19.11.4.7, the device being set in the off position or in the stand-by mode		N/A
	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, the tests being carried out after the protective electronic circuit has operated, except that		P
	appliances operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena.		N/A
	Surge protective devices disconnected, unless		P

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Clause	Requirement + Test	Result - Remark	Verdict

	They incorporate spark gaps		N/A
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4		P
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, at frequency ranges specified		P
19.11.4.3	The appliance is subjected to fast transient bursts in accordance with IEC 61000-4-4, test level 3 or 4 as specified		P
19.11.4.4	The power supply terminals of the appliance subjected to voltage surges in accordance with IEC 61000-4-5, test level 3 or 4 as specified		P
	An open circuit test voltage of 2 kV is applicable for the line-to-line coupling mode		P
	An open circuit test voltage of 4 kV is applicable for the line-to-earth coupling		P
	Earthed heating elements in class I appliances disconnected	No heating elements	N/A
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3		P
19.11.4.6	Appliances having a rated current not exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-11		P
	Appliances having a rated current exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-34		N/A
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2		P
19.11.4.8	The appliance is supplied at rated voltage and operated under normal operation. After 60s the power supply is reduced to a level such that the appliance ceases to respond or parts controlled by the programmable component cease to operate	No programmable component	N/A
	The appliance continues to operate normally, or		N/A
	requires a manual operation to restart		N/A
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 60127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A)..... :	Measured current: 8.3A min. Rated fuse current: 1A or 2A	P

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Clause	Requirement + Test	Result - Remark	Verdict
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		P
	Temperature rises not exceeding the values shown in table 9 ..... :	No higher temperature (see appended table)	P
	Compliance with clause 8 not impaired		P
	If the appliance can still be operated it complies with 20.2		P
	Insulation, other than of class III appliances or class III constructions that do not contain live parts, withstands the electric strength test of 16.3, the test voltage as specified in table 4:		P
	- basic insulation (V) ..... :	1032V	P
	- supplementary insulation (V)..... :	1782V	P
	- reinforced insulation (V) ..... :	3063V	P
	After operation or interruption of a control, clearances and creepage distances across the functional insulation withstand the electric strength test of 16.3, the test voltage being twice the working voltage		P
	The appliance does not undergo a dangerous malfunction, and		P
	no failure of protective electronic circuits, if the appliance is still operable		P
	Appliances tested with an electronic switch in the off position, or in the stand-by mode:		N/A
	- do not become operational, or	No electronic switch	N/A
	- if they become operational, do not result in a dangerous malfunction during or after the tests of 19.11.4		N/A
	If the appliance contains lids or doors that are controlled by one or more interlocks, one of the interlocks may be released provided that:		N/A
	- the lid or door does not move automatically to an open position when the interlock is released, and		N/A
	- the appliance does not start after the cycle in which the interlock was released		N/A
19.14	Appliances operated under the conditions of clause 11, any contactor or relay contact operating under the conditions of clause 11 being short-circuited	No contact or relay.	N/A
	For a relay or contactor with more than one contact, all contacts are short-circuited at the same time		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	A relay or contactor operating only to ensure the appliance is energized for normal use is not short-circuited		N/A
	If more than one relay or contactor operates in clause 11, they are short-circuited in turn		N/A
19.15	For appliances with a mains voltage selector switch, the switch is set to the lowest rated voltage position and the highest value of rated voltage is applied	No mains voltage selector switch	N/A
20	**STABILITY AND MECHANICAL HAZARDS**		**N/A**
20.1	Appliances having adequate stability	Direct plug-in type	N/A
	Tilting test through an angle of 10°, appliance placed on an inclined plane/horizontal support, not connected to the supply mains; appliance does not overturn		N/A
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°		N/A
	Possible heating test in overturned position; temperature rise does not exceed values shown in table 9		N/A
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury	No moving part	N/A
	Protective enclosures, guards and similar parts are non-detachable, and		N/A
	have adequate mechanical strength		N/A
	Enclosures that can be opened by overriding an interlock are considered to be detachable parts		N/A
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard by unexpected closure		N/A
	Not possible to touch dangerous moving parts with the test probe described		N/A
21	**MECHANICAL STRENGTH**		**P**
21.1	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		P
	Checked by applying 3 blows to every point of the enclosure like to be weak, in accordance with test Ehb of IEC 60068-2-75, spring hammer test, with an impact energy of 0,5 J		P
	The appliance shows no damage impairing compliance with this standard, and		P

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Clause	Requirement + Test	Result - Remark	Verdict
	compliance with 8.1, 15.1 and clause 29 not impaired		P
	If doubt, supplementary or reinforced insulation subjected to the electric strength test of 16.3		N/A
	If necessary, repetition of groups of three blows on a new sample		N/A
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements		P
	Test not applicable if the thickness of supplementary insulation is at least 1 mm and reinforced insulation at least 2 mm		P
	The insulation is tested as specified, and does withstand the electric strength test of 16.3		P
22	**CONSTRUCTION**		**P**
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled	IPX0	N/A
22.2	Stationary appliance: means to ensure all-pole disconnection from the supply being provided:		N/A
	- a supply cord fitted with a plug, or	Not stationary appliance	N/A
	- a switch complying with 24.3, or		N/A
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided, or		N/A
	- an appliance inlet		N/A
	Singe-pole switches and single-pole protective devices for the disconnection of heating elements in single-phase, permanently connected class 01 and class I appliances, connected to the phase conductor		N/A
22.3	Appliance provided with pins: no undue strain on socket-outlets		P
	Applied torque not exceeding 0.25 Nm	Max 0.061 Nm (GTM86100-1005-W2C)	P
	Pull force of 50N to each pin after the appliance has being placed in the heating cabinet; when cooled to room temperature the pins are not displaced by more than 1mm		P
	Each pin subjected to a torque of 0.4Nm; the pins are not rotating, unless		P
	rotating does not impair compliance with this standard		P

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Clause	Requirement + Test	Result - Remark	Verdict
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets	Not for heating liquids	N/A
22.5	No risk of electric shock when touching pins, for appliances having a capacitor with rated capacitance equal to or greater than 0,1μF, the appliance being disconnected from the supply at the instant of voltage peak	No X capacitor	N/A
	Voltage not exceeding 34 V (V)..... :		N/A
	If compliance relies on the operation of an electronic circuit, the electromagnetic phenomena tests of 19.11.4.3 and 19.11.4.4 are applied	No such electronic circuit	N/A
	The discharge test is then repeated three times, voltage not exceeding 34 V (V) ..... :		N/A
22.6	Electrical insulation not affected by condensing water or leaking liquid	No liquid	N/A
	Electrical insulation of Class II appliances not affected if a hose ruptures or seal leaks		N/A
	In case of doubt, test as described		N/A
22.7	Adequate safeguards against the risk of excessive pressure in appliances containing liquid or gases or having steam-producing devices		N/A
22.8	Electrical connections not subject to pulling during cleaning of compartments to which access can be gained without the aid of a tool, and that are likely to be cleaned in normal use		N/A
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances, unless	No such substances used	N/A
	the substance has adequate insulating properties		N/A
22.10	Not possible to reset voltage-maintained non-self-resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance, if:	No thermal cut-outs	N/A
	- a non-self-resetting thermal cut-out is required by the standard, and		N/A
	- a voltage maintained non-self-resetting thermal cut-out is used to meet it		N/A
	Non-self-resetting thermal motor protectors have a trip-free action, unless		N/A
	they are voltage maintained		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Reset buttons of non-self-resetting controls so located or protected that accidental resetting is unlikely		N/A
22.11	Reliable fixing of non-detachable parts that provide the necessary degree of protection against electric shock, moisture or contact with moving parts		P
	Obvious locked position of snap-in devices used for fixing such parts		N/A
	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing		N/A
	Tests as described		N/A
22.12	Handles, knobs etc. fixed in a reliable manner, if loosening result in a hazard	No handles and knobs	N/A
	Removing or fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible, if resulting in a hazard		N/A
	A choking hazard does not apply to appliances for commercial use		N/A
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied		N/A
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied		N/A
	If the part is removed and can be contained within the small parts cylinder, it is considered to be a choking hazard		N/A
22.13	Unlikely that handles, when gripped as in normal use, make the operator's hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only	No handles	N/A
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		P
	No exposed pointed ends of self-tapping screws or other fasteners, likely to be touched by the user in normal use or during user maintenance		P
22.15	Storage hooks and the like for flexible cords smooth and well rounded	No such hooks	N/A
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands and no undue wear of contacts	No cord reels	N/A
	Cord reel tested with 6000 operations, as specified		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test of 16.3, voltage of 1000 V applied		N/A
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner	No spacers	N/A
22.18	Current-carrying parts and other metal parts resistant to corrosion	Output connector are galvanized	P
22.19	Driving belts not relied upon to provide the required level of insulation, unless	No driving belts	N/A
	constructed to prevent inappropriate replacement		N/A
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless		P
	material used is non-corrosive, non-hygroscopic and non-combustible		P
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless	No such substances used	P
	impregnated		N/A
	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements		N/A
22.22	Appliances not containing asbestos		P
22.23	Oils containing polychlorinated biphenyl (PCB) not used	No oil used	P
22.24	Bare heating elements, except in class III appliances or class III constructions that do not contain live parts, adequately supported	No heating elements	N/A
	In case of rupture, the heating conductor is unlikely to come in contact with accessible metal parts		N/A
22.25	Sagging heating conductors, except in class III appliances or class III constructions that do not contain live parts, cannot come into contact with accessible metal parts		N/A
22.26	For class III constructions the insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation		N/A
22.27	Parts connected by protective impedance separated by double or reinforced insulation	Two Y capacitors connected in series	P
22.28	Metal parts of Class II appliances conductively connected to gas pipes or in contact with water, separated from live parts by double or reinforced insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of access to live parts is maintained after installation	Not for fixed wiring	N/A
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or		P
	so constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly incomplete		P
22.31	Neither clearances nor creepage distances over supplementary and reinforced insulation reduced below values specified in clause 29 as a result of wear		P
	Neither clearances nor creepage distances between live parts and accessible parts reduced below values for supplementary insulation if wires, screws etc. become loose		P
22.32	Supplementary and reinforced insulation constructed or protected against pollution so that clearances or creepage distances are not reduced below the values in clause 29		P
	Supplementary insulation of natural or synthetic rubber resistant to ageing, or arranged and dimensioned so that creepage distances are not reduced below values specified in 29.2		N/A
	Ceramic material not tightly sintered, similar materials or beads alone not used as supplementary or reinforced insulation	No ceramic or similar material or beads	N/A
	Ceramic and similar porous material in which heating conductors are embedded is considered to be basic insulation, not reinforced insulation	No heating conductor	N/A
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature		N/A
22.33	Conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts are not in direct contact with live parts, or	No conductive liquids	N/A
	unearthed metal parts separated from live parts by basic insulation only		N/A
	Electrodes not used for heating liquids		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	For class II constructions, conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts, not in direct contact with basic or reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	For class II constructions, conductive liquids which are in contact with live parts, not in direct contact with reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	An air layer not used as basic or supplementary insulation in a double insulation system if likely to be bridged by leaking liquid		N/A
22.34	Shafts of operating knobs, handles, levers etc. not live, unless	No knobs, handles, levers	N/A
	the shaft is not accessible when the part is removed		N/A
22.35	For other than class III constructions, handles, levers and knobs, held or actuated in normal use, not becoming live in the event of a failure of basic insulation	No knobs, handles, levers	N/A
	Such parts being of metal, and their shafts or fixings are likely to become live in the event of a failure of basic insulation, are either adequately covered by insulation material or their accessible parts are separated from their shafts or fixings by supplementary insulation		N/A
	This requirement does not apply to handles, levers and knobs on stationary appliances and cordless appliances, other than those of electrical components, provided they are reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal		N/A
	Insulating material covering metal handles, levers and knobs withstand the electric strength test of 16.3 for supplementary insulation		N/A
22.36	For appliances other than class III, handles continuously held in the hand in normal use so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless	No handles	N/A
	they are separated from live parts by double or reinforced insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.37	Capacitors in Class II appliances not connected to accessible metal parts and their casings, if of metal, separated from accessible metal parts by supplementary insulation, unless	No such capacitor	P
	the capacitors comply with 22.42		N/A
22.38	Capacitors not connected between the contacts of a thermal cut-out	No thermal cut-out	N/A
22.39	Lamp holders used only for the connection of lamps		N/A
22.40	Motor-operated appliances and combined appliances intended to be moved while in operation, or having accessible moving parts, fitted with a switch to control the motor. The actuating member of the switch being easily visible and accessible		N/A
	If the appliance cannot operate continuously, automatically or remotely without giving rise to a hazard, appliances for remote operation being fitted with a switch for stopping the operation. The actuating member of the switch being easily visible and accessible	Not for remote operation	N/A
22.41	No components, other than lamps, containing mercury		P
22.42	Protective impedance consisting of at least two separate components	Two Y-capacitors connected in series	P
	Values specified in 8.1.4 not exceeded if any one of the components are short-circuited or open-circuited	One Y-capacitor short-circuited: max 0.403mA peak	P
	Resistors checked by the test of 14.1 a) in IEC 60065		N/A
	Capacitors checked by the tests for class Y capacitors in IEC 60384-14	Approved Y capacitors	P
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur		N/A
22.44	Appliances not having an enclosure that is shaped or decorated like a toy		P
22.45	When air is used as reinforced insulation, clearances not reduced below the values specified in 29.1.3 due to deformation as a result of an external force applied to the enclosure		P
22.46	For programmable protective electronic circuits used to ensure compliance with the standard, the software contains measures to control the fault/error conditions in table R.1	No programmable protective electronic circuits	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Software that contains measures to control the fault/error conditions specified in table R.2 is to be specified in parts 2 for particular constructions or to address specific hazards		N/A
	These requirements are not applicable to software used for functional purpose or compliance with clause 11		N/A
22.47	Appliances connected to the water mains withstand the water pressure expected in normal use	Not for connecting to the water mains	N/A
	No leakage from any part, including any inlet water hose		N/A
22.48	Appliances connected to the water mains constructed to prevent backsiphonage of non-potable water	Not for connecting to the water mains	N/A
22.49	For remote operation, the duration of operation is to be set before the appliance can be started, unless	No remote operation function	N/A
	the appliance switches off automatically or can operate continuously without hazard		N/A
22.50	Controls incorporated in the appliance take priority over controls actuated by remote operation	No remote operation function	N/A
22.51	There is a control on the appliance manually adjusted to the setting for remote operation before the appliance can be operated in this mode	No remote operation function	N/A
	There is a visual indication showing that the appliance is adjusted for remote operation		N/A
	These requirements not necessary on appliances that can operate as follows, without giving rise to a hazard:		N/A
	- continuously, or		N/A
	- automatically, or		N/A
	- remotely		N/A
22.52	Socket-outlets on appliances accessible to the user in accordance with the socket-outlet system used in the country in which the appliance is sold	No socket-outlet on the appliance	N/A
22.53	Class II appliances and class III appliances that incorporate functionally earthed parts have at least double insulation or reinforced insulation between live parts and the functionally earthed parts	Class II	P
22.54	Button cells and batteries designated R1 not accessible without the aid of a tool, unless	No battery	N/A
	the cover of their compartment can only be opened after at least two independent movements have been applied simultaneously		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.55	Devices operated to stop the intended function of the appliance, if any, are be distinguished from other manual devices by means of shape, size, surface texture or position ..... :		N/A
	The requirement concerning position does not preclude use of a push on push off switch		N/A
	An indication when the device has been operated is given by:		N/A
	– tactile feedback from the actuator or from the appliance, or		N/A
	– reduction in heat output; or		N/A
	– audible and visible feedback		N/A
22.56	Detachable power supply part provided with the part of class III construction		N/A
22.57	The properties of non-metallic materials do not degrade from exposure to UV-C radiation, as specified in Annex T		N/A
	This requirement does not apply to glass, ceramics or similar materials		N/A
23	**INTERNAL WIRING**		**P**
23.1	Wireways smooth and free from sharp edges		P
	Wires protected against contact with burrs, cooling fins etc.		P
	Wire holes in metal well-rounded or provided with bushings		N/A
	Wiring effectively prevented from coming into contact with moving parts	No moving parts	N/A
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges	No beads	N/A
	Beads inside flexible metal conduits contained within an insulating sleeve		N/A
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress	No movable conductors	N/A
	Flexible metallic tubes not causing damage to insulation of conductors		N/A
	Open-coil springs not used		N/A
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N/A
	No damage after 10 000 flexings for conductors flexed during normal use, or		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	100 flexings for conductors flexed during user maintenance		N/A
	Electric strength test of 16.3, 1000 V between live parts and accessible metal parts		N/A
	Not more than 10% of the strands of any conductor broken, and		N/A
	not more than 30% for wiring supplying circuits that consume no more than 15W		N/A
23.4	Bare internal wiring sufficiently rigid and fixed	No bare internal wiring	N/A
23.5	The insulation of internal wiring subjected to the supply mains voltage withstanding the electrical stress likely to occur in normal use	No internal wiring	N/A
	Basic insulation electrically equivalent to the basic insulation of cords complying with IEC 60227 or IEC 60245, or		N/A
	no breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation		N/A
	For class II construction, the requirements for supplementary insulation and reinforced insulation apply,		N/A
	except that the sheath of a cord complying with IEC 60227 or IEC 60245 may provide supplementary insulation.		N/A
	A single layer of internal wiring insulation does not provide reinforced insulation		N/A
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by clamping at both ends, or		N/A
	be such that it can only be removed by breaking or cutting		N/A
23.7	The colour combination green/yellow only used for earthing conductors		N/A
23.8	Aluminium wires not used for internal wiring	No aluminium wires	P
23.9	Stranded conductors not consolidated by soldering where they are subjected to contact pressure, unless	No stranded conductors	N/A
	the contact pressure is provided by spring terminals		N/A
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

24	COMPONENTS		P
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components ..... :	(see appended table)	P
	Motors not required to comply with IEC 60034-1, they are tested as part of the appliance	No motor	N/A
	Relays tested as part of the appliance, or	No relay	N/A
	alternatively acc. to IEC 60730-1, and meeting the additional requirements in IEC 60335-1		N/A
	The requirements of Clause 29 apply between live parts of components and accessible parts of the appliance		P
	Components can comply with the requirements for clearances and creepage distances for functional insulation in the relevant component standard		N/A
	30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections	Bobbin of transformer	P
	Components that have not been previously tested to comply with the IEC standard for the relevant component are tested according to the requirements of 30.2		P
	Components that have been previously tested to comply with the resistance to fire requirements in the IEC standard for the relevant component need not be retested provided the specified conditions are met		P
	If these conditions are not satisfied, the component is tested as part of the appliance.		P
	Power electronic converter circuits not required to comply with IEC 62477-1, they are tested as part of the appliance		P
	If components have not been tested and found to comply with relevant IEC standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9		N/A
	For components mentioned in 24.1.1 to 24.1.9 no additional tests specified in the relevant component standard are necessary other than those specified in 24.1.1 to 24.1.9		P

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Clause	Requirement + Test	Result - Remark	Verdict

	Components not tested and found to comply with relevant IEC standard and components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance		N/A
	Lampholders and starterholders that have not being tested and found to comply with the relevant IEC standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant IEC standard	No lampholder or starterholder	N/A
	No additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of IEC 60320-1 and IEC 60309		P
24.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, comply with IEC 60384-14	Certified Y capacitor	P
	If the capacitors have to be tested, they are tested according to Annex F		N/A
24.1.2	Transformers in associated switch mode power supplies comply with Annex BB of IEC 61558-2-16		P
	Safety isolating transformers comply with IEC 61558-2-6		N/A
	If they have to be tested, they are tested according to Annex G		P
24.1.3	Switches comply with IEC 61058-1, the number of cycles of operation being at least 10 000	No switch	N/A
	If they have to be tested, they are tested according to Annex H		N/A
	If the switch operates a relay or contactor, the complete switching system is subjected to the test		N/A
	If the switch only operates a motor staring relay complying with IEC 60730-2-10 with the number of cycles of a least 10 000 as specified, the complete switching system need not be tested		N/A
24.1.4	Automatic controls comply with IEC 60730-1 with the relevant part 2. The number of cycles of operation being at least:		N/A
	- thermostats: 10 000	No automatic control	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	- temperature limiters:	1 000		N/A
	- self-resetting thermal cut-outs:	300		N/A
	- voltage maintained non-self-resetting thermal cut-outs:	1 000		N/A
	- other non-self-resetting thermal cut-outs:	30		N/A
	- timers:	3 000		N/A
	- energy regulators:	10 000		N/A
	The number of cycles for controls operating during clause 11 need not be declared, if the appliance meets the requirements of this standard when they are short-circuited			N/A
	Thermal motor protectors are tested in combination with their motor under the conditions specified in Annex D			N/A
	For water valves containing live parts and that are incorporated in external hoses for connection of an appliance to the water mains, the degree of protection declared for subclause 6.5.2 of IEC 60730-2-8 is IPX7			N/A
	Thermal cut-outs of the capillary type comply with the requirements for type 2.K controls in IEC 60730-2-9			N/A
24.1.5	Appliance couplers comply with IEC 60320-1		No appliance coupler	N/A
	However, for class II appliances classified higher than IPX0, the appliance couplers comply with IEC 60320-2-3			N/A
	Interconnection couplers comply with IEC 60320-2-2			N/A
24.1.6	Small lamp holders similar to E10 lampholders comply with IEC 60238, the requirements for E10 lampholders being applicable		No lamp holders	N/A
24.1.7	For remote operation of the appliance via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is IEC 62151		Not for remote operation	N/A
24.1.8	The relevant standard for thermal links is IEC 60691		No thermal links	N/A
	Thermal links not complying with IEC 60691 are considered to be an intentionally weak part for the purposes of Clause 19			N/A
24.1.9	Contactors and relays, other than motor starting relays, tested as part of the appliance		No contactors or relays	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	They are also tested in accordance with Clause 17 of IEC 60730-1, the number of cycles of operations in 24.1.4 selected according to the contactor or relay function in the appliance..... :		N/A
24.2	Appliances not fitted with:		P
	- switches, automatic controls or power supplies in flexible cords	No switch	P
	- devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance	No such device	P
	- thermal cut-outs that can be reset by soldering, unless	No thermal cut-out	P
	the solder has a melding point of at least 230 ˚C		N/A
24.3	Switches intended for all-pole disconnection of stationary appliances are directly connected to the supply terminals and have a contact separation in all poles, providing full disconnection under overvoltage category III conditions	No switch	N/A
24.4	Plugs and socket-outlets for extra-low voltage circuits and heating elements, not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1	No plug and socket-outlets for extra-low voltage circuits	N/A
24.5	Capacitors in auxiliary windings of motors marked with their rated voltage and capacitance, and used accordingly	No motor	N/A
	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load		N/A
24.6	Working voltage of motors connected to the supply mains and having basic insulation that is inadequate for the rated voltage of the appliance, not exceeding 42 V	No motor	N/A
	In addition, the motors comply with the requirements of Annex I		N/A
24.7	Detachable hose-sets for connection of appliances to the water mains comply with IEC 61770	No hose-sets	N/A
	They are supplied with the appliance		N/A
	Appliances intended to be permanently connected to the water mains not connected by a detachable hose-set		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
24.8	Motor running capacitors in appliances for which 30.2.3 is applicable and that are permanently connected in series with a motor winding, not causing a hazard in event of a failure	No motor running capacitors	N/A
	One or more of the following conditions are to be met:		N/A
	- the capacitors are of class S2 or S3 according to IEC 60252-1		N/A
	- the capacitors are housed within a metallic or ceramic enclosure		N/A
	- the distance of separation of the outer surface to adjacent non-metallic parts exceeds 50 mm		N/A
	- adjacent non-metallic parts within 50 mm withstand the needle-flame test of Annex E		N/A
	- adjacent non-metallic parts within 50 mm classified as at least V-1 according to IEC 60695-11-10		N/A
25	**SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS**		**P**
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		P
	- supply cord fitted with a plug, the current rating and voltage rating of the plug being not less than the corresponding ratings of its associated appliance		N/A
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance, or		N/A
	- pins for insertion into socket-outlets	Direct plug-in	P
25.2	Appliance not provided with more than one means of connection to the supply mains		P
	Stationary appliance for multiple supply may be provided with more than one means of connection, provided electric strength test of 1250 V for 1 min between each means of connection causes no breakdown	Portable appliance	N/A
25.3	Appliance intended to be permanently connected to fixed wiring provided with one of the following means for connection to the supply mains:		N/A
	- a set of terminals allowing the connection of a flexible cord		N/A
	- a fitted supply cord		N/A
	- a set of supply leads accommodated in a suitable compartment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- a set of terminals for the connection of cables of fixed wiring, cross-sectional areas specified in 26.6, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	- a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate types of cable or conduit, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	For a fixed appliance constructed so that parts can be removed to facilitate easy installation, this requirement is met if it is possible to connect the fixed wiring without difficulty after a part of the appliance has been fixed to its support		N/A
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimension according to table 10 (mm) ..... :	Not for permanently connecting to fixed wiring	N/A
	Introduction of conduit or cable does not reduce clearances or creepage distances below values specified in clause 29		N/A
25.5	Method for assembling the supply cord to the appliance:		N/A
	- type X attachment	Direct plug-in	N/A
	- type Y attachment		N/A
	- type Z attachment, if allowed in relevant part 2		N/A
	Type X attachment, other than those with a specially prepared cord, not used for flat twin tinsel cords		N/A
	For multi-phase appliances supplied with a supply cord and that are intended to be permanently connected to fixed wiring, the supply cord is assembled to the appliance by type Y attachment	Single-phase	N/A
25.6	Plugs fitted with only one flexible cord		N/A
25.7	Supply cords, other than for class III appliances, being one of the following types:		N/A
	- rubber sheathed (at least 60245 IEC 53)	Direct plug-in	N/A
	- polychloroprene sheathed (at least 60245 IEC 57)		N/A
	- polyvinyl chloride sheathed. Not used if they are likely to touch metal parts having a temperature rise exceeding 75 K during the test of clause 11		N/A
	• light polyvinyl chloride sheathed cord (60227 IEC 52), for appliances not exceeding 3 kg		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	• ordinary polyvinyl chloride sheathed cord (60227 IEC 53), for other appliances		N/A
	- heat resistant polyvinyl chloride sheathed. Not used for type X attachment other than specially prepared cords		N/A
	• heat-resistant light polyvinyl chloride sheathed cord (60227 IEC 56), for appliances not exceeding 3 kg		N/A
	• heat-resistant polyvinyl chloride sheathed cord (60227 IEC 57), for other appliances		N/A
	- halogen-free, low smoke, thermoplastic insulated and sheathed		N/A
	• light duty halogen-free low smoke flexible cable (62821 IEC 101) for circular cable and (62821 IEC 101f) for flat cable		N/A
	• Ordinary duty halogen-free low smoke flexible cable (62821 IEC 102) for circular cable and (62821 IEC 102f(for flat cable		N/A
	Supply cords for class III appliances adequately insulated		N/A
	Test with 500 V for 2 min for supply cords of class III appliances that contain live parts		N/A
25.8	Nominal cross-sectional area of supply cords not less than table 11; rated current (A); cross-sectional area (mm²)..... :		N/A
25.9	Supply cords not in contact with sharp points or edges		N/A
25.10	Supply cord of class I appliances have a green/yellow core for earthing		N/A
	In multi-phase appliances, the colour of the neutral conductor of the supply cord is blue		N/A
	Where additional neutral conductors are provided in the supply cord:		N/A
	– other colours may be used for these additional neutral conductors;		N/A
	– all of the neutral conductors and line conductors are identified by marking using the alpha numeric notation specified in IEC 60445		N/A
	– the supply cord is fitted to the appliance		N/A
25.11	Conductors of supply cords not consolidated by soldering where they are subject to contact pressure, unless	Not subject to contact pressure	N/A
	the contact pressure is provided by spring terminals		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
25.12	Insulation of the supply cord not damaged when moulding the cord to part of the enclosure	Not for moulding	N/A
25.13	Inlet openings so constructed as to prevent damage to the supply cord	No supply cord	N/A
	If it is not evident that the supply cord can be introduced without risk of damage, a non-detachable lining or bushing complying with 29.3 for supplementary insulation provided		N/A
	If unsheathed supply cord, a similar additional bushing or lining is required, unless the appliance is		N/A
	class 0, or		N/A
	a class III appliance not containing live parts		N/A
25.14	Supply cords moved while in operation adequately protected against excessive flexing		N/A
	Flexing test, as described:		N/A
	- applied force (N)..... :		N/A
	- number of flexings..... .... :		N/A
	The test does not result in:		N/A
	- short-circuit between the conductors, such that the current exceeds a value of twice the rated current		N/A
	- breakage of more than 10% of the strands of any conductor		N/A
	- separation of the conductor from its terminal		N/A
	- loosening of any cord guard		N/A
	- damage to the cord or the cord guard		N/A
	- broken strands piercing the insulation and becoming accessible		N/A
25.15	For appliances with supply cord and appliances to be permanently connected to fixed wiring by a flexible cord, conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorage	For output cord	P
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		P
	Pull and torque test of supply cord:		P
	- fixed appliances: pull 100 N; torque (not on automatic cord reel) (Nm)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- other appliances: values shown in table 12: mass (kg); pull (N); torque (not on automatic cord reel) (Nm)..... :	0.056kg, 30N, 0.1Nm	P
	Cord not damaged and max. 2 mm displacement of the cord	0.18mm	P
25.16	Cord anchorages for type X attachments constructed and located so that:		N/A
	- replacement of the cord is easily possible		N/A
	- it is clear how the relief from strain and the prevention of twisting are obtained		N/A
	- they are suitable for different types of supply cord		N/A
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless		N/A
	they are separated from accessible metal parts by supplementary insulation		N/A
	- the cord is not clamped by a metal screw which bears directly on the cord		N/A
	- at least one part of the cord anchorage securely fixed to the appliance, unless		N/A
	it is part of a specially prepared cord		N/A
	- screws which have to be operated when replacing the cord do not fix any other component, unless		N/A
	the appliance becomes inoperative or incomplete or the parts cannot be removed without a tool		N/A
	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood		N/A
	- for class 0, 0I and I appliances they are of insulating material or are provided with an insulating lining, unless		N/A
	failure of the insulation of the cord does not make accessible metal parts live		N/A
	- for class II appliances they are of insulating material, or		N/A
	if of metal, they are insulated from accessible metal parts by supplementary insulation		N/A
	After the test of 25.15, under the conditions specified, the conductors have not moved by more than 1 mm in the terminals		N/A
25.17	Adequate cord anchorages for type Y and Z attachment, test with the cord supplied with the appliance		P

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Clause	Requirement + Test	Result - Remark	Verdict
25.18	Cord anchorages only accessible with the aid of a tool, or		N/A
	Constructed so that the cord can only be fitted with the aid of a tool		N/A
25.19	Type X attachment, glands not used as cord anchorage in portable appliances		N/A
	Tying the cord into a knot or tying the cord with string not used		N/A
25.20	The conductors of the supply cord for type Y and Z attachment insulated from accessible metal parts		N/A
25.21	Space for supply cord for type X attachment or for connection of fixed wiring constructed:		N/A
	- to permit checking of conductors with respect to correct positioning and connection before fitting any cover		N/A
	- so there is no risk of damage to the conductors or their insulation when fitting the cover		N/A
	- for portable appliances, so that the uninsulated end of a conductor, if it becomes free from the terminal, prevented from contact with accessible metal parts		N/A
	2 N test to the conductor for portable appliances; no contact with accessible metal parts		N/A
25.22	Appliance inlets:		N/A
	- live parts not accessible during insertion or removal	No appliance inlet	N/A
	Requirement not applicable to appliance inlets complying with IEC 60320-1		N/A
	- connector can be inserted without difficulty		N/A
	- the appliance is not supported by the connector		N/A
	- not for cold conditions if temp. rise of external metal parts exceeds 75 K during clause 11, unless		N/A
	the supply cord is unlikely to touch such metal parts		N/A
25.23	Interconnection cords comply with the requirements for the supply cord, except that:		P
	- the cross-sectional area of the conductors is determined on the basis of the maximum current during clause 11	For output cord	P
	- the thickness of the insulation may be reduced		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- for class I or class II appliance with class III construction, the cross sectional areas of the conductors need not comply with 25.8 if specified conditions are met		P
	If necessary, electric strength test of 16.3		P
25.24	Interconnection cords not detachable without the aid of a tool if compliance with this standard is impaired when they are disconnected		P
25.25	Dimensions of pins that are inserted into socket-outlets compatible with the dimensions of the relevant socket-outlet.		P
	Dimensions of pins and engagement face in accordance with the dimensions of the relevant plug in IEC/TR 60083		P
26	**TERMINALS FOR EXTERNAL CONDUCTORS**		**N/A**
26.1	Appliances provided with terminals or equally effective devices for connection of external conductors	No terminal	N/A
	Terminals only accessible after removal of a non-detachable cover, except		N/A
	for class III appliances that do not contain live parts		N/A
	Earthing terminals may be accessible if a tool is required to make the connections and means are provided to clamp the wire independently from its connection		N/A
26.2	Appliances with type X attachment and appliances for the connection of cables of fixed wiring provided with terminals in which connections are made by means of screws, nuts or similar devices, unless		N/A
	the connections are soldered		N/A
	Screws and nuts not used to fix any other component, except		N/A
	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		N/A
	If soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone, unless		N/A
	barriers provided so that neither clearances nor creepage distances between live parts and other metal parts reduced below the values for supplementary insulation if the conductor becomes free at the soldered joint		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
26.3	Terminals for type X attachment and for connection of cables of fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure but without damaging the conductor		N/A
	Terminals fixed so that when the clamping means is tightened or loosened:		N/A
	- the terminal does not become loose		N/A
	- internal wiring is not subjected to stress		N/A
	- neither clearances nor creepage distances are reduced below the values in clause 29		N/A
	Compliance checked by inspection and by the test of subclause 9.6 of IEC 60999-1, the torque applied being equal to two-thirds of the torque specified (Nm)..... :		N/A
	No deep or sharp indentations of the conductors		N/A
26.4	Terminals for type X attachment, except those having a specially prepared cord and those for the connection of cables of fixed wiring, no special preparation of conductors such as by soldering, use of cable lugs, eyelets or similar, and		N/A
	so constructed or placed that conductors prevented from slipping out when clamping screws or nuts are tightened		N/A
26.5	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection to other parts that result in a hazard		N/A
	Stranded conductor test, 8 mm insulation removed		N/A
	No contact between live parts and accessible metal parts and,		N/A
	for class II constructions, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N/A
26.6	Terminals for type X attachment and for connection of cables of fixed wiring suitable for connection of conductors with cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm^2)..... :		N/A
	If a specially prepared cord is used, terminals need only be suitable for that cord		N/A
26.7	Terminals for type X attachment, except in class III appliances not containing live parts, accessible after removal of a cover or part of the enclosure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
26.8	Terminals for the connection of fixed wiring, including the earthing terminal, located close to each other		N/A
26.9	Terminals of the pillar type constructed and located as specified		N/A
26.10	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless		N/A
	conductors ends fitted with means suitable for screw terminals		N/A
	Pull test of 5 N to the connection		N/A
26.11	For type Y and Z attachment, soldered, welded, crimped or similar connections may be used		N/A
	For Class II appliances, the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		N/A
	If soldering, welding or crimping alone used, barriers provided so that clearances and creepage distances between live parts and other metal parts are not reduced below the values for supplementary insulation if the conductor becomes free		N/A
27	**PROVISION FOR EARTHING**		**P**
27.1	Accessible metal parts of Class 0I and I appliances permanently and reliably connected to an earthing terminal or earthing contact of the appliance inlet	Class II	N/A
	Earthing terminals and earthing contacts not connected to the neutral terminal		N/A
	Class 0, II and III appliances have no provision for protective earthing	Class II	P
	Class II appliances and class III appliances can incorporate an earth for functional purposes	No functional earth	N/A
	Safety extra-low voltage circuits not earthed, unless		P
	protective extra-low voltage circuits		N/A
27.2	Clamping means of earthing terminals adequately secured against accidental loosening		N/A
	Terminals for the connection of external equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm², and		N/A
	- do not provide earthing continuity between different parts of the appliance, and		N/A
	- conductors cannot be loosened without the aid of a tool		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	Class II	N/A
27.3	For a detachable part having an earth connection and being plugged into another part of the appliance, the earth connection is made before and separated after current-carrying connections when removing the part		N/A
	For appliances with supply cords, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	Class II	N/A
27.4	No risk of corrosion resulting from contact between parts of the earthing terminal and the copper of the earthing conductor or other metal		N/A
	Parts providing earthing continuity, other than parts of a metal frame or enclosure, have adequate resistance to corrosion		N/A
	If of steel, these parts provided with an electroplated coating with a thickness at least 5 µm		N/A
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		N/A
	In the body of the earthing terminal is a part of a frame or enclosure of aluminium or aluminium alloys, precautions taken to avoid risk of corrosion		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	Class II	N/A
27.5	Low resistance of connection between earthing terminal and earthed metal parts		N/A
	This requirement does not apply to connections providing earthing continuity in the protective extra-low voltage circuit, provided the clearances of basic insulation are based on the rated voltage of the appliance		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	Class II	N/A
	Resistance not exceeding 0,1 Ω at the specified low-resistance test (Ω)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
27.6	The printed conductors of printed circuit boards not used to provide earthing continuity in hand-held appliances.		N/A
	They may be used to provide earthing continuity in other appliances if at least two tracks are used with independent soldering points and the appliance complies with 27.5 for each circuit		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	Class II	N/A
28	**SCREWS AND CONNECTIONS**		**N/A**
28.1	Fixings, electrical connections and connections providing earthing continuity withstand mechanical stresses	No screws	N/A
	Screws not of soft metal liable to creep, such as zinc or aluminium		N/A
	Diameter of screws of insulating material min. 3 mm	No screws of insulating material	N/A
	Screws of insulating material not used for any electrical connections or connections providing earthing continuity	No screws of insulating material	N/A
	Screws used for electrical connections or connections providing earthing continuity screwed into metal	No such screws	N/A
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation	No screws of insulating material	N/A
	For type X attachment, screws to be removed for replacement of supply cord or for user maintenance, not of insulating material if their replacement by a metal screw impairs basic insulation		N/A
	For screws and nuts; torque-test as specified in table 14..... :	(see appended table)	N/A
28.2	Electrical connections and connections providing earthing continuity constructed so that contact pressure is not transmitted through non-ceramic insulating material liable to shrink or distort, unless	No such screws	N/A
	there is resiliency in the metallic parts to compensate for shrinkage or distortion of the insulating material		N/A
	This requirement does not apply to electrical connections in circuits of appliances for which:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	• 30.2.2 is applicable and that carry a current not exceeding 0,5 A	No electrical connections	N/A
	• 30.2.3 is applicable and that carry a current not exceeding 0,2 A		N/A
28.3	Space-threaded (sheet metal) screws only used for electrical connections if they clamp the parts together	No such screws	N/A
	Thread-cutting (self-tapping) screws and thread rolling screws only used for electrical connections if they generate a full form standard machine screw thread		N/A
	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer		N/A
	Thread-cutting, thread rolling and space threaded screws may be used in connections providing earthing continuity provided it is not necessary to disturb the connection:		N/A
	- in normal use,		N/A
	- during user maintenance,		N/A
	- when replacing a supply cord having a type X attachment, or		N/A
	- during installation		N/A
	At least two screws being used for each connection providing earthing continuity, unless		N/A
	the screw forms a thread having a length of at least half the diameter of the screw		N/A
28.4	Screws and nuts that make mechanical connection secured against loosening if they also make electrical connections or connections providing earthing continuity	No such screws	N/A
	This requirement does not apply to screws in the earthing circuit if at least two screws are used, or		N/A
	if an alternative earthing circuit is provided		N/A
	Rivets for electrical connections or connections providing earthing continuity secured against loosening if the connections are subjected to torsion		N/A
29	**CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION**		**P**
	Clearances, creepage distances and solid insulation withstand electrical stress		P

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Clause	Requirement + Test	Result - Remark	Verdict
	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (Type 2), Annex J applies..... :	No coating	N/A
	The microenvironment is pollution degree 1 under type 1 protection		N/A
	For type 2 protection, the spacing between the conductors before the protection is applied is not less than the values specified in Table 1 of IEC 60664-3		N/A
	These values apply to functional, basic, supplementary and reinforced insulation ..... :		N/A
29.1	Clearances not less than the values specified in table 16, taking into account the rated impulse voltage for the overvoltage categories of table 15, unless ..... :	(see appended table) Altitude 5000m is considered.	P
	for basic insulation and functional insulation they comply with the impulse voltage test of clause 14		N/A
	However, if the distances are affected by wear, distortion, movement of the parts or during assembly, the clearances for rated impulse voltages of 1500V and above are increased by 0,5 mm and the impulse voltage test is not applicable		N/A
	For appliances intended for use at altitudes exceeding 2 000 m, the clearances in Table 16 is increased according to the relevant multiplier values in Table A.2 of IEC 60664-1	Altitude 5000m is considered.	P
	Impulse voltage test is not applicable:		N/A
	- when the microenvironment is pollution degree 3, or		N/A
	- for basic insulation of class 0 and class 01 appliances, or		N/A
	- to appliances intended for use at altitudes exceeding 2 000 m	Altitude 5000m is considered.	P
	Appliances are in overvoltage category II		P
	A force of 2 N is applied to bare conductors, other than heating elements		P
	A force of 30 N is applied to accessible surfaces		P
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage		P
	The values of table 16 or the impulse voltage test of clause 14 are applicable..... :	(see appended table)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1,0 mm if the microenvironment is pollution degree 1		N/A
	Lacquered conductors of windings considered to be bare conductors		P
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16 ..... :	(see appended table)	P
29.1.3	Clearances of reinforced insulation not less than those specified for basic insulation in table 16, using the next higher step for rated impulse voltage ..... :	(see appended table)	P
	For double insulation, with no intermediate conductive part between basic and supplementary insulation, clearances are measured between live parts and the accessible surface, and the insulation system is treated as reinforced insulation		P
29.1.4	Clearances for functional insulation are the largest values determined from:		P
	- table 16 based on the rated impulse voltage ..... :	(see appended table)	P
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz	67 kHz	P
	If values of table 16 are largest, the impulse voltage test of clause 14 may be applied instead, unless	1.5 mm is the largest	P
	the microenvironment is pollution degree 3, or		N/A
	the distances can be affected by wear, distortion, movement of the parts or during assembly		N/A
	However, clearances are not specified if the appliance complies with clause 19 with the functional insulation short-circuited	The components and circuits after current fuse	P
	Lacquered conductors of windings considered to be bare conductors	Magnet wires is treated as bare conductors	P
	However, clearances at crossover points are not measured		P
	Clearance between surfaces of PTC heating elements may be reduced to 1mm	No PTC heating elements	N/A
29.1.5	Appliances having higher working voltages than rated voltage, clearances for basic insulation are the largest values determined from:		P
	- table 16 based on the rated impulse voltage ..... :	(see appended table)	P
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz	67kHz	P
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1 or Clause 4 of IEC 60664-4, the clearances of supplementary insulation are not less than those specified for basic insulation		P
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1, the clearances of reinforced insulation dimensioned as specified in Table F.7a are to withstand 160% of the withstand voltage required for basic insulation		N/A
	If clearances for basic insulation are selected from Clause 4 of IEC 60664-4, the clearances of reinforced insulation are twice the value required for basic insulation		P
	If the secondary winding of a step-down transformer is earthed, or if there is an earthed screen between the primary and secondary windings, clearances of basic insulation on the secondary side not less than those specified in table 16, but using the next lower step for rated impulse voltage		N/A
	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation are based on the working voltage used as the rated voltage in table 15		N/A
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree..... :	(see appended table)	P
	Pollution degree 2 applies, unless		P
	- precautions taken to protect the insulation; pollution degree 1		N/A
	- insulation subjected to conductive pollution; pollution degree 3		N/A
	A force of 2 N is applied to bare conductors, other than heating elements		P
	A force of 30 N is applied to accessible surfaces		P
	In a double insulation system, the working voltage for both the basic and supplementary insulation is taken as the working voltage across the complete double insulation system		P
29.2.1	Creepage distances of basic insulation not less than specified in table 17..... :	(see appended table)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 17 ..... :	Upeak: 420V 67kHz, 0.164mm according table 2 of IEC60664-4, not exceeding the values in table 17	P
	Except for pollution degree 1, corresponding creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14 ..... :	Creepage distance is bigger than clearance distance	P
29.2.2	Creepage distances of supplementary insulation at least those specified for basic insulation in table 17, or ..... :	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable ..... :	67kHz, 0.164mm according table 2 of IEC60664-4, not exceeding the values in table 17	N/A
29.2.3	Creepage distances of reinforced insulation at least double those specified for basic insulation in table 17, or ..... :	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable ..... :	67kHz, 0.328mm according table 2 of IEC60664-4, not exceeding the values in table 17	N/A
29.2.4	Creepage distances of functional insulation not less than specified in table 18..... :	(see appended table)	P
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 18 ..... :	67kHz, 0.328mm according table 2 of IEC60664-4, not exceeding the values in table 18	N/A
	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited		P
29.3	Supplementary and reinforced insulation have adequate thickness, or a sufficient number of layers, to withstand the electrical stresses		P
	Compliance checked:		P
	- by measurement, in accordance with 29.3.1, or		P
	- by an electric strength test in accordance with 29.3.2, or		N/A
	- for insulation, other than single layer internal wiring insulation, by an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3, and		P

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Clause	Requirement + Test	Result - Remark	Verdict
	for accessible parts of reinforced insulation consisting of a single layer, by measurement in accordance with 29.3.4, or		N/A
	- by an assessment of the thermal quality of the material according to 29.3.3 combined with an electric strength test in accordance with 23.5, for each single layer internal wiring insulation touching each other, or		N/A
	- as specified in subclause 6.3 of IEC 60664-4 for insulation that is subjected to any periodic voltage having a frequency exceeding 30 kHz		N/A
29.3.1	Supplementary insulation have a thickness of at least 1 mm		P
	Reinforced insulation have a thickness of at least 2 mm		P
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		N/A
	Supplementary insulation consist of at least 2 layers		N/A
	Reinforced insulation consist of at least 3 layers		N/A
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by		N/A
	the electric strength test of 16.3		P
	If the temperature rise during the tests of clause 19 does not exceed the value specified in table 3, the test of IEC 60068-2-2 is not carried out		P
29.3.4	Thickness of accessible parts of reinforced insulation consisting of a single layer not less than specified in table 19..... :		N/A
30	**RESISTANCE TO HEAT AND FIRE**		**P**
30.1	External parts of non-metallic material,	Enclosure	P
	parts supporting live parts, and	PCB and bobbin	P
	parts of thermoplastic material providing supplementary or reinforced insulation	Enclosure	P
	sufficiently resistant to heat		P
	Ball-pressure test according to IEC 60695-10-2		P
	External parts tested at 40 °C plus the maximum temperature rise determined during the test of clause 11, or at 75 °C, whichever is the higher; temperature (°C)..... :	Enclosure (see appended table 30.1)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Parts supporting live parts tested at 40°C plus the maximum temperature rise determined during the test of clause 11, or at 125 °C, whichever is the higher; temperature (°C)..... :	PCB and bobbin (see appended table 30.1)	P
	Parts of thermoplastic material providing supplementary or reinforced insulation tested at 25 °C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C) ..... :	No temperature higher than clause 11	N/A
30.2	Parts of non-metallic material resistant to ignition and spread of fire		P
	This requirement does not apply to:		P
	parts having a mass not exceeding 0,5 g, provided the cumulative effect is unlikely to propagate flames that originate inside the appliance by propagating flames from one part to another, or		P
	decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance		N/A
	Compliance checked by the test of 30.2.1, and in addition:		P
	- for attended appliances, 30.2.2 applies		N/A
	- for unattended appliances, 30.2.3 applies		P
	For appliances for remote operation, 30.2.3 applies	Not for remote operation	N/A
	For base material of printed circuit boards, 30.2.4 applies		P
30.2.1	Parts of non-metallic material subjected to the glow-wire test of IEC 60695-2-11 at 550°C	Enclosure: no ignition (see appended table 30.2)	P
	However, test not carried out if the material is classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 550 °C, or		N/A
	the material is classified at least HB40 according to IEC 60695-11-10		N/A
	Parts for which the glow-wire test cannot be carried out need to meet the requirements in ISO 9772 for material classified HBF		N/A
30.2.2	Appliances operated while attended, parts of non-metallic material supporting current-carrying connections, and		N/A
	parts of non-metallic material within a distance of 3mm of such connections,		N/A
	subjected to the glow-wire test of IEC 60695-2-11 with appropriate severity level:	(see appended table 30.2)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C, or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or	(see appended table 30.2/30.2.4)	N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10 ..... :		N/A
	Glow-wire test not applicable to conditions as specified ..... :		N/A
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2		P
	The tests are not applicable to conditions as specified ..... :	Connections on small components on printed circuit boards	P
30.2.3.1	Parts of non-metallic material supporting connections carrying a current exceeding 0,2 A during normal operation, and	Bobbin, output connector	P
	parts of non-metallic material, other than small parts, within a distance of 3 mm,		P
	subjected to the glow-wire test of IEC 60695-2-11 with a test severity of 850 °C	Bobbin and output connect 850 °C: no ignition. (see appended table 30.2)	P
	Glow-wire applied to an interposed shielding material, if relevant		P
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 850 °C		P
30.2.3.2	Parts of non-metallic material supporting connections, and	Bobbin, output connect	P

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Clause	Requirement + Test	Result - Remark	Verdict
	parts of non-metallic material within a distance of 3mm,		N/A
	subjected to the glow-wire test of IEC 60695-2-11 with appropriate severity level:		P
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation	Bobbin and output connect 850 °C: no ignition.	P
	- 650 °C, for other connections		N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	However, the glow-wire test of 750 °C or 650 °C as appropriate, is not carried out on parts of material fulfilling both or either of the following classifications:		N/A
	- a glow-wire ignition temperature according to IEC 60695-2-13 of at least:		N/A
	• 775 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	• 675 °C, for other connections		N/A
	- a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		N/A
	- comprise material having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or		N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
	The consequential needle-flame test of Annex E applied to non-metallic parts that encroach within the vertical cylinder placed above the centre of the connection zone and on top of the non-metallic parts supporting current-carrying connections, and parts of non-metallic material within a distance of 3 mm of such connections if these parts are those:		N/A
	- parts that withstood the glow-wire test of IEC 60695-2-11 of 750 °C or 650 °C as appropriate, but produce a flame that persist longer than 2 s, or		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- parts that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts, that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts for which the needle-flame test of Annex E was applied, or		N/A
	- small parts for which a material classification of V-0 or V-1 was applied		N/A
	However, the consequential needle-flame test is not carried out on non-metallic parts, including small parts, within the cylinder that are:		P
	- parts having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- parts comprising material classified as V-0 or V-1 according to IEC 60695-11-10, or	PCB: V-0	P
	- parts shielded by a flame barrier that meets the needle-flame test of Annex E or that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
30.2.4	Base material of printed circuit boards subjected to the needle-flame test of Annex E		N/A
	Test not applicable to conditions as specified..... :	V-0	P
31	**RESISTANCE TO RUSTING**		**P**
	Relevant ferrous parts adequately protected against rusting	Pins of connectors galvanized.	P
	Tests specified in part 2 when necessary		N/A
32	**RADIATION, TOXICITY AND SIMILAR HAZARDS**		**P**
	Appliance does not emit harmful radiation or present a toxic or similar hazard due to their operation in normal use		P
	Compliance is checked by the limits or tests specified in part 2, if relevant	Tested according EN62233, <10%	P
A	**ANNEX A (INFORMATIVE)** **ROUTINE TESTS**		N/A
	Description of routine tests to be carried out by the manufacturer		N/A
B	**ANNEX B (NORMATIVE)** **APPLIANCES POWERED BY RECHARGEABLE BATTERIES THAT ARE RECHARGED IN THE APPLIANCE**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The following modifications to this standard are applicable for appliances powered by batteries that are recharged in the appliance		N/A
	Three forms of construction covered:		N/A
	a) Appliance supplied directly from the supply mains or a renewable energy source, the battery charging circuitry and other supply unit circuitry incorporated within the appliance		N/A
	b) The part of the appliance incorporating the battery is supplied from the supply mains or a renewable energy source, via a detachable supply unit. The battery charging circuitry is incorporated within the part of the appliance containing the battery		N/A
	c) The part of the appliance incorporating the battery is supplied from the supply mains or a renewable energy source, via a detachable supply unit. The battery charging circuitry is incorporated within the detachable supply unit		N/A
3.1.9	Appliance operated under the following conditions:		N/A
	- the appliance, supplied by its fully charged battery, operated as specified in relevant part 2		N/A
	- the battery is charged, the battery being initially discharged to such an extent that the appliance cannot operate		N/A
	-if possible, the appliance is supplied from the supply mains through its battery charger, the battery being initially discharged to such an extent that the appliance cannot operate. The appliance is operated as specified in relevant part 2		N/A
	- if the appliance incorporates inductive coupling between two parts that are detachable from each other, the appliance is supplied from the supply mains with the detachable part removed		N/A
3.6.2	Part to be removed in order to discard the battery is not considered to be detachable		N/A
5.B.101	Appliances supplied from the supply mains tested as specified for motor-operated appliances		N/A
7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage (V) and polarity of the terminals .... :		N/A
	The positive terminal indicated by symbol IEC 60417-5005 and the negative terminal by symbol IEC 60417-5006		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Appliances intending to be supplied from a detachable supply unit marked with symbol IEC 60417-6181 and its type reference along with symbol ISO 7000-0790 (2004-01), or		N/A
	use only with <model designation> supply unit ... . :		N/A
7.6	Additional symbols		N/A
7.12	The instructions give information regarding charging		N/A
	Instructions for appliances incorporating batteries intended to be replaced by the user include required information		N/A
	Instructions for appliances containing non user-replaceable batteries state the substance of the following:		N/A
	This appliance contains batteries that are only replaceable by skilled persons		N/A
	Instructions for appliances containing non-replaceable batteries shall state the substance of the following:		N/A
	This appliance contains batteries that are non-replaceable		N/A
	For appliances intending to be supplied from a detachable supply unit for the purposes of recharging the battery, the type reference of the detachable supply unit is stated along with the following:		N/A
	WARNING: For the purposes of recharging the battery, only use the detachable supply unit provided with this appliance		N/A
	If the symbol for detachable supply unit is used, its meaning is explained		N/A
7.15	Markings placed on the part of the appliance connected to the supply mains		N/A
	The type reference of the detachable supply unit is placed in close proximity to the symbol		N/A
8.2	Appliances having batteries that according to the instruction may be replaced by the user need only have basic insulation between live parts and the inner surface of the battery compartment		N/A
	If the appliance can be operated without batteries, double or reinforced insulation required		N/A
11.7	The battery is charged for the period stated in the instructions or 24 h ..... :		N/A
11.8	Temperature rise of the battery surface does not exceed the limit in the battery manufacturer's specification; measured (K); limit (K) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If no limit specified, the temperature rise does not exceed 20 K; measured (K) ..... :		N/A
19.1	Appliances subjected to tests of 19.B.101, 19.B.102 and 19.B.103		N/A
19.10	Not applicable		N/A
19.B.101	Appliances supplied at rated voltage for 168 h, the battery being continually charged		N/A
19.B.102	For appliances having batteries that can be removed without the aid of a tool, short-circuit of the terminals of the battery, the battery being fully charged,		N/A
19.B.103	Appliances having batteries replaceable by the user supplied at rated voltage under normal operation with the battery removed or in any position allowed by the construction		N/A
19.13	The battery does not rupture or ignite		N/A
21.B.101	Appliances having pins for insertion into socket-outlets have adequate mechanical strength		N/A
	Part of the appliance incorporating the pins subjected to the free fall test, procedure 2, of IEC 60068-2-31, the number of falls being:		N/A
	- 100, if the mass of the part does not exceed 250 g (g) ..... :		N/A
	- 50, if the mass of the part exceeds 250 g ..... :		N/A
	After the test, the requirements of 8.1, 15.1.1, 16.3 and clause 29 are met		N/A
22.3	Appliances having pins for insertion into socket-outlets tested as fully assembled as possible		N/A
25.13	An additional lining or bushing not required for interconnection cords in class III appliances or class III constructions operating at safety extra-low voltage not containing live parts		N/A
30.2	For parts of the appliance connected to the supply mains during the charging period, 30.2.3 applies		N/A
	For other parts, 30.2.2 applies		N/A
C	**ANNEX C (NORMATIVE)** **AGEING TEST ON MOTORS**		N/A
	Tests, as described, carried out when doubt with regard to the temperature classification of the insulation of a motor winding		N/A
	Test conditions as specified		N/A
D	**ANNEX D (NORMATIVE)** **THERMAL MOTOR PROTECTORS**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Applicable to appliances having motors that incorporate thermal motor protectors necessary for compliance with the standard		N/A
	Test conditions as specified		N/A
E	**ANNEX E (NORMATIVE)** **NEEDLE-FLAME TEST**		N/A
	Needle-flame test carried out in accordance with IEC 60695-11-5, with the following modifications:		N/A
7	Severities		N/A
	The duration of application of the test flame is 30 s ± 1 s		N/A
9	Test procedure		N/A
9.1	The specimen so arranged that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1		N/A
9.2	The first paragraph does not apply		N/A
	If possible, the flame is applied at least 10 mm from a corner		N/A
9.3	The test is carried out on one specimen		N/A
	If the specimen does not withstand the test, the test may be repeated on two additional specimens, both withstanding the test		N/A
11	Evaluation of test results		N/A
	The duration of burning not exceeding 30 s		N/A
	However, for printed circuit boards, the duration of burning not exceeding 15 s		N/A
F	**ANNEX F (NORMATIVE)** **CAPACITORS**		N/A
	Capacitors likely to be permanently subjected to the supply voltage, and used for radio interference suppression or voltage dividing, comply with the following clauses of IEC 60384-14, with the following modifications:		N/A
1.5	Terms and definitions		N/A
1.5.3	Class X capacitors tested according to subclass X2		N/A
1.5.4	This subclause is applicable		N/A
1.6	Marking		N/A
	Items a) and b) are applicable		N/A
3.4	Approval testing		N/A
3.4.3.2	Table 3 is applicable as described		N/A
4.1	Visual examination and check of dimensions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	This subclause is applicable		N/A
4.2	Electrical tests		N/A
4.2.1	This subclause is applicable		N/A
4.2.5	This subclause is applicable		N/A
4.2.5.2	Only table 11 is applicable		N/A
	Values for test A apply		N/A
	However, for capacitors in heating appliances the values for test B or C apply		N/A
4.12	Damp heat, steady state		N/A
	This subclause is applicable		N/A
	Only insulation resistance and voltage proof are checked		N/A
4.13	Impulse voltage		N/A
	This subclause is applicable		N/A
4.14	Endurance		N/A
	Subclauses 4.14.1, 4.14.3, 4.14.4 and 4.14.7 are applicable		N/A
4.14.7	Only insulation resistance and voltage proof are checked		N/A
	No visible damage		N/A
4.17	Passive flammability test		N/A
	This subclause is applicable		N/A
4.18	Active flammability test		N/A
	This subclause is applicable		N/A
G	**ANNEX G (NORMATIVE)** **SAFETY ISOLATING TRANSFORMERS**		**P**
	The following modifications to this standard are applicable for safety isolating transformers:		P
7	Marking and instructions		N/A
7.1	Transformers for specific use marked with:		N/A
	-name, trademark or identification mark of the manufacturer or responsible vendor ..... :		N/A
	-model or type reference ..... :		N/A
17	Overload protection of transformers and associated circuits		N/A
	Fail-safe transformers comply with subclause 15.5 of IEC 61558-1		N/A
22	Construction		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Subclauses 19.1 and 19.1.2 of IEC 61558-2-6 are applicable		P
29	Clearances, creepage distances and solid insulation		P
29.1, 29.2, 29.3	The distances specified in items 2a, 2c and 3 in table 13 of IEC 61558-1 apply		P
	For insulated winding wires complying with subclause 19.12.3 of IEC 61558-1 there are no requirements for clearances or creepage distances		P
	For windings providing reinforced insulation, the distance specified in item 2c of table 13 of IEC 61558-1 is not assessed		P
	For safety isolating transformers subjected to periodic voltages with a frequency exceeding 30 kHz, the clearances, creepage distances and solid insulation values specified in IEC 60664-4 are applicable, if greater than the values specified in items 2a, 2c and 3 in table 13 of IEC 61558-1		P
H	**ANNEX H (NORMATIVE) SWITCHES**		N/A
	Switches comply with the following clauses of IEC 61058-1, as modified below:		N/A
	The tests of IEC 61058-1 carried out under the conditions occurring in the appliance		N/A
	Before being tested, switches are operated 20 times without load		N/A
8	Marking and documentation		N/A
	Switches are not required to be marked		N/A
	However, a switch that can be tested separately from the appliance marked with the manufacturer's name or trade mark and the type reference		N/A
13	Mechanism		N/A
	The tests may be carried out on a separate sample		N/A
15	Insulation resistance and dielectric strength		N/A
15.1	Not applicable		N/A
15.2	Not applicable		N/A
15.3	Applicable for full disconnection and micro-disconnection		N/A
17	Endurance		N/A
	Compliance is checked on three separate appliances or switches		N/A
	For 17.2.4.4, the number of cycles declared according to 7.1.4 is 10 000, unless		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	otherwise specified in 24.1.3 of the relevant part 2 of IEC 60335..... :		N/A
	Switches for operation under no load and which can be operated only by a tool, and		N/A
	switches operated by hand that are interlocked so that they cannot be operated under load,		N/A
	are not subjected to the tests		N/A
	However, switches without this interlock are subjected to the test of 17.2.4.4 for 100 cycles of operation		N/A
	Subclauses 17.2.2 and 17.2.5.2 not applicable		N/A
	The ambient temperature during the test is that occurring in the appliance during the test of Clause 11 in IEC 60335-1		N/A
	The temperature rise of the terminals not more than 30 K above the temperature rise measured in clause 11 of IEC 60335-1 (K) ..... :		N/A
20	Clearances, creepage distances, solid insulation and coatings of rigid printed board assemblies		N/A
	Clause 20 is applicable to clearances across full disconnection and micro-disconnection		N/A
	It is also applicable to creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in Table 24		N/A
I	**ANNEX I (NORMATIVE)** **MOTORS HAVING BASIC INSULATION THAT IS INADEQUATE FOR THE RATED VOLTAGE OF THE APPLIANCE**		N/A
	The following modifications to this standard are applicable for motors having basic insulation that is inadequate for the rated voltage of the appliance:		N/A
8	Protection against access to live parts		N/A
8.1	Metal parts of the motor are considered to be bare live parts		N/A
11	Heating		N/A
11.3	The temperature rise of the body of the motor is determined instead of the temperature rise of the windings		N/A
11.8	The temperature rise of the body of the motor, where in contact with insulating material, not exceeding values in table 3 for the relevant insulating material		N/A
16	Leakage current and electric strength		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
16.3	Insulation between live parts of the motor and its other metal parts is not subjected to the test		N/A
19	Abnormal operation		N/A
19.1	The tests of 19.7 to 19.9 are not carried out		N/A
19.I.101	Appliance operated at rated voltage with each of the following fault conditions:		N/A
	- short circuit of the terminals of the motor, including any capacitor incorporated in the motor circuit		N/A
	- short circuit of each diode of the rectifier		N/A
	- open circuit of the supply to the motor		N/A
	- open circuit of any parallel resistor, the motor being in operation		N/A
	Only one fault simulated at a time, the tests carried out consecutively		N/A
22	Construction		N/A
22.I.101	For class I appliances incorporating a motor supplied by a rectifier circuit, the d.c. circuit being insulated from accessible parts of the appliance by double or reinforced insulation		N/A
	Compliance checked by the tests specified for double and reinforced insulation		N/A
J	**ANNEX J (NORMATIVE) COATED PRINTED CIRCUIT BOARDS**		N/A
	Testing of protective coatings of printed circuit boards carried out in accordance with IEC 60664-3 with the following modifications:		N/A
5.7	Conditioning of the test specimens		N/A
	When production samples are used, three samples of the printed circuit board are tested		N/A
5.7.1	Cold		N/A
	The test is carried out at -25 °C		N/A
5.7.3	Rapid change of temperature		N/A
	Severity 1 is specified		N/A
5.9	Additional tests		N/A
	This subclause is not applicable		N/A
K	**ANNEX K (NORMATIVE) OVERVOLTAGE CATEGORIES**		**P**
	The information on overvoltage categories is extracted from IEC 60664-1		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Overvoltage category is a numeral defining a transient overvoltage condition		P
	Equipment of overvoltage category IV is for use at the origin of the installation		N/A
	Equipment of overvoltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements		N/A
	Equipment of overvoltage category II is energy consuming equipment to be supplied from the fixed installation		P
	If such equipment is subjected to special requirements with regard to reliability and availability, overvoltage category III applies		N/A
	Equipment of overvoltage category I is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an appropriate low level		N/A
L	**ANNEX L (INFORMATIVE) GUIDANCE FOR THE MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES**		**P**
	Information for the determination of clearances and creepage distances		P
M	**ANNEX M (NORMATIVE) POLLUTION DEGREE**		**P**
	The information on pollution degrees is extracted from IEC 60664-1		P
	Pollution		P
	The microenvironment determines the effect of pollution on the insulation, taking into account the macroenvironment		P
	Means may be provided to reduce pollution at the insulation by effective enclosures or similar		P
	Minimum clearances specified where pollution may be present in the microenvironment		P
	Degrees of pollution in the microenvironment		P
	For evaluating creepage distances, the following degrees of pollution in the microenvironment are established:		P
	- pollution degree 1: no pollution or only dry, non-conductive pollution occurs. The pollution has no influence		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- pollution degree 2: only non-conductive pollution occurs, except that occasionally a temporary conductivity caused by condensation is to be expected		P
	- pollution degree 3: conductive pollution occurs or dry non-conductive pollution occurs that becomes conductive due to condensation that is to be expected		N/A
	- pollution degree 4: the pollution generates persistent conductivity caused by conductive dust or by rain or snow		N/A
N	**ANNEX N (NORMATIVE)** **PROOF TRACKING TEST**		N/A
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications:		N/A
7	Test apparatus		N/A
7.3	Test solutions		N/A
	Test solution A is used		N/A
10	Determination of proof tracking index (PTI)		N/A
10.1	Procedure		N/A
	The proof voltage is 100V, 175V, 400V or 600V.. :		N/A
	The test is carried out on five specimens		N/A
	In case of doubt, additional test with proof voltage reduced by 25V, the number of drops increased to 100		N/A
10.2	Report		N/A
	The report states if the PTI value was based on a test using 100 drops with a test voltage of (PTI-25) V		N/A
O	**ANNEX O (INFORMATIVE)** **SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30**		**P**
	Description of tests for determination of resistance to heat and fire		P
P	**ANNEX P (INFORMATIVE)** **GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN TROPICAL CLIMATES**		N/A
	Modifications applicable for class 0 and 01 appliances having a rated voltage exceeding 150V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Modifications may also be applied to class 1 appliances having a rated voltage exceeding 150V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332, if liable to be connected to a supply mains that excludes the protective earthing conductor		N/A
5.7	The ambient temperature for the tests of clauses 11 and 13 is 40 +3/0 °C		N/A
7.1	The appliance marked with symbol IEC 60417-6332		N/A
7.12	The instructions state that the appliance is to be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30 mA		N/A
	The instructions state that the appliance is considered to be suitable for use in countries having a tropical climate, but may also be used in other countries		N/A
	If symbol IEC 60417-6332 is used, its meaning is explained		N/A
11.8	The values of Table 3 are reduced by 15 K		N/A
13.2	The leakage current for class I appliances not exceeding 0,5 mA		N/A
15.3	The value of t is 37 °C		N/A
16.2	The leakage current for class I appliances not exceeding 0,5 mA (mA):		N/A
19.13	The leakage current test of 16.2 is applied in addition to the electric strength test of 16.3		N/A
Q	**ANNEX Q (INFORMATIVE)** **SEQUENCE OF TESTS FOR THE EVALUATION OF ELECTRONIC CIRCUITS**		N/A
	Description of tests for appliances incorporating electronic circuits		N/A
R	**ANNEX R (NORMATIVE)** **SOFTWARE EVALUATION**		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 validated in accordance with the requirements of this annex		N/A
R.1	Programmable electronic circuits using software		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 constructed so that the software does not impair compliance with the requirements of this standard		N/A
R.2	Requirements for the architecture		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 use measures to control and avoid software-related faults/errors in safety-related data and safety-related segments of the software		N/A
R.2.1.1	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.2 have one of the following structures:		N/A
	- single channel with periodic self-test and monitoring		N/A
	- dual channel (homogenous) with comparison		N/A
	- dual channel (diverse) with comparison		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 have one of the following structures:		N/A
	- single channel with functional test		N/A
	- single channel with periodic self-test		N/A
	- dual channel without comparison		N/A
R.2.2	Measures to control faults/errors		N/A
R.2.2.1	When redundant memory with comparison is provided on two areas of the same component, the data in one area is stored in a different format from that in the other area		N/A
R.2.2.2	Programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.2 and that use dual channel structures with comparison, have additional fault/error detection means for any fault/errors not detected by the comparison		N/A
R.2.2.3	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, means are provided for the recognition and control of errors in transmissions to external safety-related data paths		N/A
R.2.2.4	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the programmable electronic circuits incorporate measures to address the fault/errors in safety-related segments and data indicated in table R.1 and R.2 as appropriate		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

R.2.2.5	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, detection of a fault/error occur before compliance with clause 19 is impaired		N/A
R.2.2.6	The software is referenced to relevant parts of the operating sequence and the associated hardware functions		N/A
R.2.2.7	Labels used for memory locations are unique		N/A
R.2.2.8	The software is protected from user alteration of safety-related segments and data		N/A
R.2.2.9	Software and safety-related hardware under its control is initialized and terminates before compliance with clause 19 is impaired		N/A
R.3	Measures to avoid errors		N/A
R.3.1	General		N/A
	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the following measures to avoid systematic fault in the software are applied		N/A
	Software that incorporates measures used to control the fault/error conditions specified in table R.2 is inherently acceptable for software required to control the fault/error conditions specified in table R.1		N/A
R.3.2	Specification		N/A
R.3.2.1	Software safety requirements:	Software Id:	N/A
	The specification of the software safety requirements includes the descriptions listed		N/A
R.3.2.2	Software architecture		N/A
R.3.2.2.1	The specification of the software architecture includes the aspects listed - techniques and measures to control software faults/errors (refer to R.2.2); - interactions between hardware and software; - partitioning into modules and their allocation to the specified safety functions; - hierarchy and call structure of the modules (control flow); - interrupt handling; - data flow and restrictions on data access; - architecture and storage of data; - time-based dependencies of sequences and data	Document ref. No:	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

R.3.2.2.2	The architecture specification is validated against the specification of the software safety requirements by static analysis		N/A
R.3.2.3	Module design and coding		N/A
R.3.2.3.1	Based on the architecture design, software is suitably refined into modules		N/A
	Software module design and coding is implemented in a way that is traceable to the software architecture and requirements		N/A
R.3.2.3.2	Software code is structured		N/A
R.3.2.3.3	Coded software is validated against the module specification by static analysis		N/A
	The module specification is validated against the architecture specification by static analysis		N/A
R.3.3.3	Software validation		N/A
	The software is validated with reference to the requirements of the software safety requirements specification		N/A
	Compliance is checked by simulation of:		N/A
	- input signals present during normal operation		N/A
	- anticipated occurrences		N/A
	- undesired conditions requiring system action		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

TABLE R.1 [e] – GENERAL FAULT/ERROR CONDITIONS

Component [a]	Fault/error	Acceptable measures [b, c]	Definitions	Document reference for applied measure	Document reference for applied test	Ver-dict
1 CPU 1.1 Registers	Stuck at	Functional test, or periodic self-test using either: - static memory test, or - word protection with single bit redundancy	H.2.16.5 H.2.16.6 H.2.19.6 H.2.19.8.2			N/A
1.2 VOID						N/A
1.3 Programme counter	Stuck at	Functional test, or Periodic self-test, or Independent time-slot monitoring, or Logical monitoring of the programme sequence	H.2.16.5 H.2.16.6 H.2.18.10.4 H.2.18.10.2			N/A
2 Interrupt handling and execution	No interrupt or too frequent interrupt	Functional test, or time-slot monitoring	H.2.16.5 H.2.18.10.4			N/A
3 Clock	Wrong frequency (for quartz synchronized clock: harmonics/ sub-harmonics only)	Frequency monitoring, or time slot monitoring	H.2.18.10.1 H.2.18.10.4			N/A
4. Memory 4.1 Invariable memory	All single bit faults	Periodic modified checksum, or multiple checksum, or word protection with single bit redundancy	H.2.19.3.1 H.2.19.3.2 H.2.19.8.2			N/A
4.2 Variable memory	DC fault	Periodic static memory test, or word protection with single bit redundancy	H.2.19.6 H.2.19.8.2			N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.3 Addressing (relevant to variable and invariable memory)	Stuck at	Word protection with single bit redundancy including the address	H.2.19.8.2			N/A
5 Internal data path	Stuck at	Word protection with single bit redundancy	H.2.19.8.2			N/A
5.1 VOID						N/A
5.2 Addressing	Wrong address	Word protection with single bit redundancy including the address	H.2.19.8.2			N/A
6 External communication	Hamming distance 3	Word protection with multi-bit redundancy, or CRC – single work, or Transfer redundancy, or Protocol test	H.2.19.8.1 H.2.19.4.1 H.2.18.2.2 H.2.18.14			N/A
6.1 VOID						N/A
6.2 VOID						N/A
6.3 Timing	Wrong point in time	Time-slot monitoring, or scheduled transmission Time-slot and logical monitoring, or comparison of redundant communication channels by either: - reciprocal comparison - independent hardware comparator	H.2.18.10.4 H.2.18.18 H.2.18.10.3 H.2.18.15 H.2.18.3			N/A
	Wrong sequence	Logical monitoring, or time-slot monitoring, or Scheduled transmission	H.2.18.10.2 H.2.18.10.4 H.2.18.18			
7 Input/output periphery	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A
7.1 VOID						N/A

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Clause	Requirement + Test	Result - Remark	Verdict

7.2 Analog I/O 7.2.1 A/D and D/A-converter	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A
7.2.2 Analog multiplexer	Wrong addressing	Plausibility check	H.2.18.13			N/A
8 VOID						N/A
9 Custom chips [d] e.g. ASIC, GAL, gate array	Any output outside the static and dynamic functional specification	Periodic self-test	H.2.16.6			N/A

NOTE A Stuck-at fault model denotes a fault model representing an open circuit or a non-varying signal level. A DC fault model denotes a stuck-at fault model incorporating short circuit between signal lines.

[a] For fault/error assessment, some components are divided into their sub-functions.
[b] For each sub-function in the table, the Table R.2 measure will cover the software fault/error.
[c] Where more than one measure is given for a sub-function, these are alternatives.
[d] To be divided as necessary by the manufacturer into sub-functions.
[e] Table R.1 is applied according to the requirements of R.1 to R.2.2.9 inclusive.

S	**ANNEX S (NORMATIVE) BATTERY OPERATED APPLIANCES POWERED BY BATTERIES THAT ARE NON-RECHARGEABLE OR NOT RECHARGED IN THE APPLIANCE**		N/A
	The following modifications to this standard are applicable for battery-operated appliances where the batteries are either non-rechargeable (primary batteries), or		N/A
	rechargeable batteries (secondary batteries) that are not recharged in the appliance		N/A
5.8.1	If the supply terminals for the connection of the battery have no indication of polarity, the more unfavourable polarity is applied		N/A
5.S.101	Appliances intended for use with a battery box are tested with the battery box supplied with the appliance or with the battery box recommended in the instructions		N/A
5.S.102	Appliances are tested as motor-operated appliances.		N/A
7.1	Appliances marked with the battery voltage (V) and the polarity of the terminals, unless..... .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	the polarity is irrelevant		N/A
	Appliances also marked with:		N/A
	– name, trade mark or identification mark of the manufacturer or responsible vendor ....:		N/A
	– model or type reference ....:		N/A
	– IP number according to degree of protection against ingress of water, other than IPX0 .. ..:		N/A
	– type reference of battery or batteries ....:		N/A
	If relevant, the positive terminal is indicated by the symbol IEC 60417-5005 and the negative terminal by the symbol IEC 60417-5006		N/A
	If appliances use more than one battery, they are marked to indicate correct polarity connection of the batteries		N/A
7.6	Additional symbols		N/A
7.12	The instructions contain the following, as applicable:		N/A
	– the types of batteries that may be used .. ..:		N/A
	– how to remove and insert the batteries		N/A
	– non-rechargeable batteries are not to be recharged		N/A
	– rechargeable batteries are to be removed from the appliance before being charged		N/A
	– different types of batteries or new and used batteries are not to be mixed		N/A
	– batteries are to be inserted with the correct polarity		N/A
	– exhausted batteries are to be removed from the appliance and safely disposed of		N/A
	– if the appliance is to be stored unused for a long period, the batteries are removed		N/A
	– the supply terminals are not to be short-circuited		N/A
11.5	Appliances are supplied with the most unfavourable supply voltage between		N/A
	– 0,55 and 1,0 times the battery voltage, if the appliance can be used with non-rechargeable batteries		N/A
	– 0,75 and 1,0 times battery voltage, if the appliance is designed for use with rechargeable batteries only		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The values specified in Table S.101 for the internal resistance per cell of the battery is taken into account		N/A
19.1	The tests are carried out with the battery fully charged unless otherwise specified		N/A
19.13	The battery does not rupture or ignite		N/A
19.S.101	Appliances are supplied with the voltage specified in 11.5. The supply terminals having an indication of polarity are connected to the opposite polarity, unless		N/A
	such a connection is unlikely to occur due to the construction of the appliance		N/A
19.S.102	For appliances with provision for multiple batteries, one or more of the batteries are reversed and the appliance is operated, if reversal of batteries is allowed by the construction		N/A
25.5	The flexible leads or flexible cord used to connect an external battery or battery box in is connected to the appliance by a type X attachment		N/A
25.13	This requirement is not applicable to the flexible leads or flexible cord connecting external batteries or a battery box with an appliance		N/A
25.S.101	Appliances have suitable means for connection of the battery. If the type of battery is marked on the appliance, the means of connection is suitable for this type of battery		N/A
26.5	Terminal devices in an appliance for the connection of the flexible leads or flexible cord connecting an external battery or battery box are so located or shielded that there is no risk of accidental connection between supply terminals		N/A
30.2.3.2	There is no battery in the area of the vertical cylinder used for the consequential needle flame test, unless		N/A
	the battery is shielded by a barrier that meets the needle flame test of Annex E, or		N/A
	that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
T	**ANNEX T (NORMATIVE)** **UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS**		N/A
	Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are relied upon for compliance with the		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Does not apply to glass, ceramic and similar materials		N/A
	Tested as specified in ISO 4892-1 and ISO 4892-2, with the following modifications:		N/A
	Modifications to ISO 4892-1:		N/A
5.1.6	The UV-C emitter is a low pressure mercury lamp with a quartz envelope having a continuous spectral irradiance of 10 W/m2 at 254 nm		N/A
	Subclause 5.1.6.1 and Table 1 are not applicable		N/A
5.2.4	The black-panel temperature shall be 63 °C +/- 3 °C		N/A
5.3.1	Humidification of the chamber air is specified in part 2 when necessary		N/A
9	This clause is not applicable		N/A
	Modifications to ISO 4892-2:		N/A
7.1	At least three test specimens are tested		N/A
	Ten samples of internal wiring is tested		N/A
7.2	The specimens are attached to the specimen holders such that they are not subject to any stress		N/A
7.3	Apparatus prepared as specified		N/A
	The test specimens and, if used, the irradiance-measuring instrument are exposed for 1 000 h		N/A
7.4	If used, a radiometer is mounted and calibrated such that it measures the irradiance at the exposed surface of the test specimen		N/A
7.5	Material properties and test methods for parts providing mechanical support or impact resistance as specified in Table T.1		N/A
	Material properties and test method for electrical insulation of internal wiring as specified in Table T.2		N/A
8	This clause is not applicable		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

10.1	TABLE: Power input deviation				N/A
Input deviation of/at:	**P rated (W)**	**P measured (W)**	**Δ P**	**Required Δ P**	**Remark**
Supplementary information:					

10.2	TABLE: Current deviation				P
Current deviation of/at:	**I rated (A)**	**I measured (A)**	**Δ I**	**Required Δ I**	**Remark**
GTM86100-1005-W2E-USB	0.3	0.243 / 0.126	-19.00 / -58.00	+20	-
GTM86100-1005-W2C	0.3	0.225 / 0.122	-25.00 / -59.33	+20	-
Supplementary information: Figures shown above are corresponding to rated supply voltage of 100 Va.c. and 240 Va.c. respectively.					

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Clause	Requirement + Test	Result - Remark	Verdict

11.8	TABLE: Heating test, thermocouple measurements		P
	Test voltage (V) ..... :	94 / 254.4V	—
	Ambient (°C) ..... :	25	—

Thermocouple locations	Max. temperature rise measured, dT (K)	Max.temperature rise limit, dT (K)
GTM86100-1005-W2E-USB		
1. Enclosure Inside near plug holder	24.3 / 17.9	For ball pressure
2. PCB near Rectifier Bridge (BD1)	51.3 / 40.5	90 (T130)
3.Choke (L1) Coil	47.2 / 38.0	70
4. Capacitor (C1) body near Transformer	45.5 / 36.9	65 (T105)
5. Capacitor (C2) body near Transformer	49.3 / 41.4	65 (T105)
6. PCB near near Q1	63.0 / 54.6	90 (T130)
7.Transformer (T1) Primary Winding	66.2 / 62.4	70 (Class 130)
8.Transformer (T1) Secondary Winding	63.8 / 59.7	70 (Class 130)
9.Transformer (T1) Core	58.9 / 54.3	For reference
10.CY1 body near Transformer	45.0 / 41.0	85 (T125)
11.CY2 body near Transformer	41.0 / 38.5	85 (T125)
12.Capacitor (C7)	36.9 / 35.8	65 (T105)
13.Capacitor (C8)	57.9 / 52.8	65 (T105)
14.Enclosure Inside near Transformer (T1) Top	33.9 / 27.8	For ball pressure
15.Enclosure Outside near Transformer (T1) Top	27.7 / 31.8	59
16. Plug pin sleeve	13.4 / 12.3	45
Supplementary information: The maximum ambient temperature is 40°C.		

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Clause	Requirement + Test	Result - Remark	Verdict

11.8	TABLE: Heating test, thermocouple measurements (continued)		P
	Test voltage (V) ..... :	94 / 254.4V	—
	Ambient (°C) ..... :	25	—

Thermocouple locations	Max. temperature rise measured, dT (K)	Max.temperature rise limit, dT (K)
GTM86100-1005-W2C		
1. Enclosure Inside near plug holder	24.7 / 13.9	For ball pressure
2. PCB near Rectifier Bridge (BD1)	47.8 / 24.6	90 (T130)
3.Choke (L1) Coil	59.1 / 28.4	70
4. Capacitor (C1) body near Transformer	44.3 / 26.3	65 (T105)
5. Capacitor (C2) body near Transformer	51.5 / 39.8	65 (T105)
6. Transformer (T1) Primary Winding	51.2 / 46.2	70 (Class 130)
7.Transformer (T1) Secondary Winding	52.1 / 51.4	70 (Class 130)
8.Transformer (T1) Core	52.0 / 46.5	For reference
9.CY1 body near Transformer	40.7 / 36.3	85 (T125)
10.CY2 body near Transformer	29.0 / 27.3	85 (T125)
11.Capacitor (C7)	40.1 / 39.3	65 (T105)
12.Capacitor (C8)	27.2 / 26.4	65 (T105)
13.Enclosure Inside near Transformer (T1) Top	21.9 / 22.5	For ball pressure
14.Enclosure Outside near Transformer (T1) Top	21.1 / 19.2	59
15.Output wire	19.2 / 18.1	40 (T80)
16. MOV1	42.6 / 32.4	45 (T85)
17. Plug pin sleeve	11.8 / 10.1	45
Supplementary information: The maximum ambient temperature is 40°C.		

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Clause	Requirement + Test	Result - Remark	Verdict

11.8	TABLE: Heating test, resistance method		N/A
	Test voltage (V)..... :		—
	Ambient, t1 (°C)..... :		—
	Ambient, t2 (°C)..... :		—

Temperature rise of winding:	R1 (Ω)	R2 (Ω)	Δ T (K)	Max. Δ T (K)	Insulation class

Supplementary information:

13.2	TABLE: Leakage current		P
	Heating appliances: 1.15 x rated input (W).. :	N/A	—
	Motor-operated and combined appliances: 1.06 x rated voltage (V) ..... :	106 / 254.4	—

Leakage current between:	I (mA)	Max. allowed I (mA)
Live parts and output circuits	Max. 0.015 peak	0.35 mA peak

Supplementary information: Protective impedance and radio interference filters are disconnected before carrying out the tests.

13.3	TABLE: Dielectric strength		P

Test voltage applied between:	Test potential applied (V)	Breakdown / flashover (Yes/No)
Live parts and live parts to the mid point of two Y capacitors	1032	No
Basic insulation and accessible metal parts (or metal foil)	1782	No
Live parts and output circuit	3063	No

Supplementary information:

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Clause	Requirement + Test	Result - Remark	Verdict

14	TABLE: Transient overvoltages				N/A
Clearance between:	**Cl (mm)**	**Required Cl (mm)**	**Rated impulse voltage (V)**	**Impulse test voltage (V)**	**Flashover (Yes/No)**
Supplementary information:					

16.2	TABLE: Leakage current			P
	Single phase appliances: 1.06 x rated voltage (V)..... :	N/A		—
	Three phase appliances 1.06 x rated voltage divided by √3 (V)..... :	106 / 254.4		—
Leakage current between:		**I (mA)**	**Max. allowed I (mA)**	
Live parts and output circuits		Max. 0.015	0.25	
Supplementary information: Protective impedance and radio interference filters are disconnected before carrying out the tests.				

16.3	TABLE: Dielectric strength		P
Test voltage applied between:		**Test potential applied (V)**	**Breakdown / flashover (Yes/No)**
Live parts and live parts to the mid point of two Y capacitors		1282	No
Basic insulation and accessible metal parts (or metal foil)		1782	No
Live parts and output circuit		3063	No
Supplementary information:			

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Clause	Requirement + Test	Result - Remark	Verdict

17	TABLE: Overload protection		P
Thermocouple locations:		**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
GTM86100-1005-W2E-USB			
Winding		82.4 / 79.6	200
GTM86100-1005-W2C			
Output wire		24.8 / 23.7	70
Winding		68.5 / 65.4	200
Supplementary information: Measured at 94 / 254.4V mains supply.			

17	TABLE: Overload protection, resistance method					N/A
	Test voltage (V)..... :					—
	Ambient, t1 (°C)..... :					—
	Ambient, t2 (°C)..... :					—
Temperature of winding:		**R1 (Ω)**	**R2 (Ω)**	**Δ T (K)**	**T (°C)**	**Max. T (°C)**
Supplementary information:						

19	Abnormal operation conditions						P
Operational characteristics			**YES/NO**	**Operational conditions**			
Are there electronic circuits to control the appliance operation?			NO				
Are there "off" or "stand-by" position?			NO				
The unintended operation of the appliance results in dangerous malfunction?			NO				
Sub-clause	**Operating conditions description**	**Test results description**	**PEC description**	**EMP 19.11.4**	**Software type required**	**19.11.3 PEC**	**Final result**
19.2	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.3	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.4	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.5	N.A	N.A	N.A	N.A	N.A	N.A	N.A

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Clause	Requirement + Test	Result - Remark	Verdict

19.6	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.7	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.8	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.9	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.10	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.11.2	Full load	Fuse or electronic circuit protection	D8 and other components	Pass	N.A	YES	Pass
19.11.4.8	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.10X	N.A	N.A	N.A	N.A	N.A	N.A	N.A
Supplementary information:							

19.7	**TABLE: Abnormal operation, locked rotor/moving parts**					N/A
	Test voltage (V)..... :					**—**
	Ambient, t1 (°C)..... :					**—**
	Ambient, t2 (°C)..... :					**—**
Temperature of winding:		**R1 (Ω)**	**R2 (Ω)**	**Δ T (K)**	**T (°C)**	**Max. T (°C)**
Supplementary information:						

19.9	**TABLE: Abnormal operation, running overload**					N/A
	Test voltage (V)..... :					**—**
	Ambient, t1 (°C)..... :					**—**
	Ambient, t2 (°C)..... :					**—**
Temperature of winding:		**R1 (Ω)**	**R2 (Ω)**	**Δ T (K)**	**T (°C)**	**Max. T (°C)**
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

19.13	TABLE: Abnormal operation, temperature rises	N/A

Thermocouple locations:	Max. temperature rise measured, Δ T (K)	Max. temperature rise limit, Δ T (K)
N/A	N/A	N/A
Supplementary information: Unit was protected, no higher temperature.		

21.1	TABLE: Impact resistance		P
Impacts per surface	**Surface tested**	**Impact energy (J)**	**Comments**
3 times	Enclosure	0.5	Pass
Supplementary information:			

24.1	TABLE: Components information				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1])
Enclosure	SABIC JAPAN L L C	SE1X	PPE+PS, Min. V-1, Min. thickness: 1.5mm, 105°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	SE100	PPHOX, Min. V-1, Min. thickness: 1.5mm, 80°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	940	PC, Min. V-0, Min. thickness: 1.5mm, 120°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	CX7211	PC/ABS, Min. V-1, Min. thickness: 1.5mm, 90°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	C2950	PC/ABS, Min. V-0, Min. thickness: 1.5mm, 75°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	925U	PC, Min. V-0, Min. thickness: 1.5mm, 1115°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	945	PC, Min. V-0, Min. thickness: 1.5mm, 120°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780

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Clause	Requirement + Test	Result - Remark	Verdict

Alt. use	SABIC JAPAN L L C	CH6410	PC/ABS, V-0, Min. thickness: 1.5mm, 100°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	EXCY0098	PC/ABS, V-0, Min. thickness: 1.5mm, 100°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	ASAHI KASEI CORPORATION	540V	m-PPE, V-1, Min. thickness: 1.5mm, 105°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance E82268
Alt. use	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR6005	PC, Min. V-0, Min. thickness: 1.5mm, 105°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E41613
Alt. use	COVESTRO DEUTSCHLAND AG [PC RESINS]	6485	PC, Min. V-0, Min. thickness: 1.5mm, 115°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E41613
Alt. use	IDEMITSU KOSAN CO LTD	AZ2201	PC, Min. V-0, Min. thickness: 1.5mm, 125°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E48268
Plug holder	SABIC Japan L L C	SE1X	PPE+PS, Min. V-1, Min. thickness: 1.5mm, 105°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	945	PC, Min. V-0, Min. thickness: 1.5mm, 120°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	NAN YA PLASTICS CORP PLASTICS 3RD DIV	6410G5	PA66, Min. V-0, Min. thickness: 1.5mm, 115°C	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E130155
PCB	Shenzhen Wuzhu Tech Co Ltd	WZ-4	Min. V-0, 130°C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E170968
Alt. use	WALEX ELECTRONIC(WUXI)CO LTD	T2 T2A T2B T4	Min. V-0, 130°C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E154355
Alt. use	DONGGUAN HE TONG ELECTRONICS CO LTD	CEM1 2V0 FR4	Min. V-0, 130°C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E243157

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Alt. use	Huizhou Shunjia Electronics Co Ltd	SJ-B	Min. V-0, 130˚C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E320884
Alt. use	Cheerful Electronics(HK)Ltd	02 03 03A	Min. V-0, 130˚C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E199724
Alt. use	Dongguan Daysun Electronic Co Ltd	DS2	Min. V-0, 130˚C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E251754
Alt. use	Suzhou City Yilihua Electronics Co Ltd	YLH-1	Min. V-0, 130˚C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E251781
Alt. use	DAFENG AREX ELECTRONICS TECHNOLOGY CO LTD	02V0 03V0 04V0	Min. V-0, 130˚C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E186016
Alt. use	BRITE PLUS ELECTRONICS(SUZHOU)CO LTD	DKV0-3A DGV0-3A	Min. V-0, 130˚C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E177671
Alt. use	KUOTIANG ENT LTD	C-2 C-2A	Min. V-0, 130˚C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E227299
Alt. use	SHENZHEN TONGCHUANXIN ELECTRONICS CO LTD	TCX	Min. V-0, 130˚C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E250336
Alt. use	PACIFIC WIN INDUSTRIAL LTD	PW-02 PW-03	Min. V-0, 130˚C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E228070
Alt. use	YUANMAN PRINTED CIRCUIT CO LTD	1V0	Min. V-0, 130˚C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E74757
Alt. use	SUZHOU XINKE ELECTRONICS CO LTD	XK-2 XK-3	Min. V-0, 130˚C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E231590
Alt. use	KUNSHAN CITY HUA SHENG CIRCUIT BOARD CO LTD	HS-S	Min. V-0, 130˚C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E229877

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Clause	Requirement + Test	Result - Remark	Verdict

Alt. use	JIANGSU DIFEIDA ELECTRONICS CO LTD	DFD-1	Min. V-0, 130°C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E213009
Alt. use	SHANGHAI H-FAST ELECTRONIC CO LTD	211001 411001	Min. V-0, 130°C, min. thickness: 1.6mm	IEC 60335-1 UL 796	Tested with appliance UL E337862
Current fuse (F1)	LITTELFUSE WICKMANN WERKE	392	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 126983 UL E67006
Alt. use	Ever Island Electric Co., Ltd. & Walter Electric	2010 series	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40018781 UL E220181
Alt. use	Shenzhen Lanson Electronics Co. Ltd.	SMT	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40012592 UL E221465
Alt. use	Conquer Electronics Co., Ltd.	MST	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017157 UL E82636
Alt. use	Cooper Bussmann LLC	SS-5	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40015513 UL E19180
Alt. use	Bel Fuse Ltd.	RST-Serie(s)	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40011144 UL E20624
Alt. use	SMART ELECTRONICS INC	SPT	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40014285 UL E238986
Alt. use	SUNNY EAST ENTERPRISE CO LTD	TSP series	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40027173 UL E133774
Alt. use	Conquer Electronics Co., Ltd.	PTU	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017157 UL E82636

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Alt. use	Littelfuse Inc	877	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40023242 UL E10480
Alt. use	NIPPON SEISEN CABLE LTD	SLT	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40013103 UL E120786
Alt. use	Walter Electronic Co. Ltd.	ICP	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40012824 UL E56092
Alt. use	XC ELECTRONICS (SHENZHEN) CORP LTD	5TE	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40029550 UL E249609
Alt. use	XC ELECTRONICS (SHENZHEN) CORP LTD	4T series	T1A or 2A, 250V sub-miniature fuse	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40029295 UL E249609
Output wire	SUZHOU DIOUDE ELECTRONICS CO LTD	1185 2464 2468	300V, Min. 80°C, Min. 24AWG	IEC 60335-1 UL 758	Tested with appliance UL E336191
Alt. use	Interchangeable	Interchangeable	300V, Min. 80°C, Min. 24AWG	IEC 60335-1 UL 758	Tested with appliance UL Approved
Resistor Fuse (RT1) (For Model series: GT*86100-**-W2*-USB only)	Anhui Changsheng Electronics Co., Ltd	RXF21-2W	3.3ohm, 2W	EN 60065:2014	VDE 40024768
Alt. use	Shenzhen Great Electronics Co. Ltd.	RXF	3.3ohm, 2W	EN 60065:2014	VDE 40026608
Alt. use	Shenzhen Kayocota Electronics Co., Ltd	FRKNP	3.3ohm, 2W	EN 60065:2014	VDE 40043957
Alt. use	TZAI YUAN Enterprise Co., Ltd	KNF	3.3ohm, 2W	EN 60065:2014	VDE 40035589

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

Y capacitor (CY1, CY2) (Optional)	TDK Corporation	CD	Y1, AC250V, max 2200pF, 25/125/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40029780 UL E37861
Alt. use	Murata Mfg. Co., Ltd.	KX	Y1, AC250V, max 2200pF, 25/125/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40002831 UL E37921
Alt. use	Success Electronics Co., Ltd.	SE	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40037211 UL E114280
Alt. use	Success Electronics Co., Ltd.	SB	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40037221 UL E114280
Alt. use	JYA-NAY Co., Ltd.	JN	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001831 UL E201384
Alt. use	WELSON INDUSTRIAL CO LT D	WD	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40016157 UL E104572
Alt. use	SAMWHA CAPACITOR CO LTD	SD	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40015804 UL E97754
Alt. use	NAN JING YUYUE ELECTRONICS CO LTD	CT7	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40008010 UL E237728
Alt. use	YINAN DON'S ELECTRONIC COMPONENT CO LTD	CT81	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 135256 UL E145038
Alt. use	JYH CHUNG ELECTRONICS CO LTD	JD	Y1, AC400V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 137027 UL E187963

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

Alt. use	JYH CHUNG ELECTRONICS CO LTD.	JY	Y2, AC300V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 137027 UL E187963
Transformer (T1)	GlobTek / Dee Van Enterprise Co., Ltd./ BOAM / HAOPUWEI	90E10PFX0-xxxx for Model: GT*86100-**-W2*-USB only; 90E10PF02-xxxx for Model: GT*86100-**-W2* only ("xxxx" to denote the part number, can be any alphanumeric character for marketing purposes only.)	Class B, with critical component listed below	IEC 60335-1	Tested with appliance
-Bobbin	HITACHI CHEMICAL CO LTD	CP-J-8800	V-0, 150°C, thickness 0.45 mm min.	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E42956
- Alt. use	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, thickness 0.45 mm min.	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E41429
- Alt. use	SUMITOMO BAKELITE CO LTD	PM-9630	V-0, 150°C, thickness 0.45 mm min.	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E41429
- Alt. use	CHANG CHUN PLASTICS CO LTD	T375J	V-0, 140°C, thickness 0.74 mm min.	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E59481
- Alt. use	CHANG CHUN PLASTICS CO LTD	T373J	V-0, 150°C, thickness 0.45 mm min.	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E59481
- Alt. use	CHANG CHUN PLASTICS CO LTD	T375HF	V-0, 150°C, thickness 0.45 mm min.	IEC 60335-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E59481

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

- Magnet wire	Golden Ocean	UEW-X (UL E225143)	130`C	IEC 60335-1	Tested with appliance
Alt. use	Da Yang	UEW (UL E176101)	30°C	IEC 60335-1	Tested with appliance
Alt. use	Wa Tai	UEW (UL E243939)	130°C	IEC 60335-1	Tested with appliance
Alt. use	Feng Ching	UEW (UL E172395)	130°C	IEC 60335-1	Tested with appliance
Alt. use	TAI-I	UEW (UL E234896)	130oC	IEC 60335-1	Tested with appliance
-Triple-insulated wire (Secondary)	Furukawa Electric Co., Ltd.	TEX-E	Class B, reinforced insulation	IEC 62368-1 IEC 61558-1 IEC 61558-2-16	VDE 006735
Alt. use	DAH JIN TECHNOLOGY CO LTD	TLW-B	Class B, reinforced insulation	IEC 62368-1 IEC 61558-1 IEC 61558-2-16	VDE 40008834
Alt. use	Great Leoflon Industrial Co., Ltd.	TRW (B) Serie(s)	Class B, reinforced insulation	IEC 60950-1 IEC 61558-1 IEC 61558-2-16	VDE 136581
-Insulating tape	SYMBIO INC	35660 35661 35660Y	Min.130°C	IEC 60335-1 UL 510	Tested with appliance UL E50292
Alt. use	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 1350T-1	Min.130°C	IEC 60335-1 UL 510	Tested with appliance UL E17385
Alt. use	BONDTEC PACIFIC CO LTD	370S	Min.130°C	IEC 60335-1 UL 510	Tested with appliance UL E175868
Alt. use	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ CT WF	Min.130°C	IEC 60335-1 UL 510	Tested with appliance UL E165111
Alt. use	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	Min.130°C	IEC 60335-1 UL 510	Tested with appliance UL E246950

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

Alt. use	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	Min.130°C	IEC 60335-1 UL 510	Tested with appliance UL E246820
-PTFE tubing	GREAT HOLDING INDUSTRIAL CO LTD	TFT / TFS	Min. 300V, 200°C	IEC 60335-1	Tested with appliance UL E156256
Alt. use	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	WF	600V, 200°C	IEC 60335-1	Tested with appliance UL E203950
Alt. use	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TT-T / CB-TT-S	Min. 300V, 200°C	IEC 60335-1	Tested with appliance UL E180908
Alt. use	ZEUS	TFE-TW-300 or TFE-SW-600	Min.150V, 200°C	IEC 60335-1	Tested with appliance UL E64007
Varistor MOV1 (Optional) (For Model: GT*86100-**-W2* only)	CENTRA SCIENCE CORP	CNR-10D431-561K,	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40008220
Alt. use	CENTRA SCIENCE CORP	CNR-14D431-561K,	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40008220
Alt. use	Uppermost Electronic Industries Co Ltd	V10K300, V10K320, V10K350, V10K385, V14K300, V14K320, V14K350, V14K385	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 010108
Alt. use	Jya-Nay Co Ltd	10D431-561K, 14D431-4561K	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40023949
Alt. use	Joyin Co Ltd	JVR10N431-561K, JVR14N431-561K,	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 005937

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Clause	Requirement + Test	Result - Remark	Verdict

Alt. use	Panasonic Corporation	10DK431-561U, 14DK431-561U	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 005912
Alt. use	Thinking Electronic Industrial Co Ltd	TVR10431-561, TVR14431-561	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 005944
Alt. use	Fenghua Adv. Tech. (Holding) Co., Ltd. Xianhua New Sen. Comp. & Sensor Br. Co.	FNR-10K431-561, FNR-14K431-561	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40008242
Alt. use	Brightking (Shenzhen)Co Ltd	10D431-561K, 14D431-561K,	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40027827
Alt. use	Littelfuse Inc	V300-V385LA10P, V300-V385LA20AP V10E300P-385P, V14E300P-385P	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 116895
Alt. use	Guangxi New Future Information Industry Co Ltd	10D431-561K, 14D431-561K,	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40030322
Alt. use	Walsin Technology Corp	VZ10D456K, VZ14D456K	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 005932
Alt. use	Success Electronics Co Ltd	SVR10D431K ~561K SVR14D431K ~561K	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 123677
Alt. use	Shantou Hongzhi Electronics Ltd	10D471K	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40037512

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

Alt. use	BestBright Electronics Co.,Ltd.	10D471K	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40027827
Alt. use	CeNtRa Science (Holdings) Ltd	10D471K	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40008220
Alt. use	Huizhou Songlong Xindian Electronic Technology Co.,LTD	10D471K	Min. 300Vac, min. 385Vdc, 85°C, fulfilled 6kV/3kA pulse test.	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40040037
Note: Provided evidence ensures the agreed level of compliance. See OD-CB2039. For all transformers under all manufacturers.					

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

28.1	TABLE: Threaded part torque test		N/A
Threaded part identification:	**Diameter of thread (mm)**	**Column number (I, II, or III)**	**Applied torque (Nm)**
Supplementary information:			

29.1	TABLE: Clearances		P
	Overvoltage category .... :	II	—

		Type of insulation:				
Rated impulse voltage (V):	**Min. cl (mm)**	**Basic (mm)**	**Supplementary (mm)**	**Reinforced (mm)**	**Functional (mm)**	**Verdict / Remark**
330	0,2* / 0,5 / 0,8**	—	—	—	—	N/A
500	0,2* / 0,5 / 0,8**	—	—	—	—	N/A
800	0,2* / 0,5 / 0,8**	—	—	—	—	N/A
1 500	0,5 / 0,8** / 1,0***	—	—	—	—	N/A
2 500	1,5 / 2,0*** / **2,22** #	3.9	4.2	—	3.0	P
4 000	3,0 / 3,5*** / **4,44** #	—	—	7.0	—	P
6 000	5,5 / 6,0***	—	—	—	—	N/A
8 000	8,0 / 8,5***	—	—	—	—	N/A
10 000	11,0 / 11,5***	—	—	—	—	N/A

Supplementary information:

*) For tracks on printed circuit boards if pollution degree 1 and 2
**) For pollution degree 3
***) If the construction is affected by wear, distortion, movement of the parts or during assembly

Functional insulation:

L→N: Min. 4.0mm; Different polarity of fuse: Min. 3.0mm

Reinforced insulation:
Live parts to accessible parts: Min. 7.0mm; Live parts to enclosure: Min. 7.0mm;
Primary circuits trace to secondary circuits trace: Min. 7.0mm;
Primary winding to secondary winding: Min. 7.8mm; Core to secondary winding: Min. 7.8mm;
Core to secondary parts: Min. 7.0mm;
Basic insulation:
Two pins trace under CY: 3.9mm.
Supplementary insulation:

Two pins trace under CY2: 4.2mm.

#: Altitude 5000m is considered, the correction factor of 1.48 is multiplied based on above values.

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

29.2	TABLE: Creepage distances, basic, supplementary and reinforced insulation										P
Working voltage (V):	**Creepage distance (mm) Pollution degree**										
	1	**2**			**3**			**Type of insulation**			
		Material group			**Material group**						
		I	**II**	**IIIa/IIIb**	**I**	**II**	**IIIa/IIIb***	**B****	**S****	**R****	**Verdict**
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9		—	—	N/A
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9	—		—	N/A
≤50	0,36	1,2	1,7	2,4	3,0	3,4	3,8	—	—		N/A
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4		—	—	N/A
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4	—		—	N/A
125	0,56	1,5	2,1	3,0	3,8	4,2	4,8	—	—		N/A
250	0,56	1,25	1,8	2,5	3,2	3,6	4,0		—	—	N/A
250	0,56	1,25	1,8	2,5	3,2	3,6	4,0	—		—	N/A
250	1,12	2,5	3,6	5,0	6,4	7,2	8,0	—	—		N/A
276	0,64	1,38	1,98	**2,8**	3,69	3,95	4,4	3.9	—	—	P
276	0,64	1,38	1,98	**2,8**	3,69	3,95	4,4	—	4.2	—	P
276	1,28	2,76	3,96	**5,6**	7,38	7,9	8,8	—	—	7.0	P
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3		—	—	N/A
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	—		—	N/A
400	2,0	4,0	5,6	8,0	10,0	11,2	12,6	—	—		N/A
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0		—	—	N/A
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	—		—	N/A
500	2,6	5,0	7,2	10,0	12,6	14,2	16,0	—	—		N/A
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0		—	—	N/A
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	—		—	N/A
>630 and ≤800	3,6	6,4	9,0	12,6	16,0	18,0	20,0	—	—		N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5		—	—	N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	—		—	N/A
>800 and ≤1000	4,8	8,0	11,2	16,0	20,0	22,0	25,0	—	—		N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0		—	—	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	—		—	N/A
>1000 and ≤1250	6,4	10,0	14,2	20,0	25,0	28,0	32,0	—	—		N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0		—	—	N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	—		—	N/A
>1250 and ≤1600	8,4	12,6	18,0	25,0	32,0	36,0	40,0	—	—		N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0		—	—	N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	—		—	N/A
>1600 and ≤2000	11,2	16,0	22,0	32,0	40,0	44,0	50,0	—	—		N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0		—	—	N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	—		—	N/A
>2000 and ≤2500	15,0	20,0	28,0	40,0	50,0	56,0	64,0	—	—		N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0		—	—	N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	—		—	N/A
>2500 and ≤3200	20,0	25,0	36,0	50,0	64,0	72,0	80,0	—	—		N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0		—	—	N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	—		—	N/A
>3200 and ≤4000	25,0	32,0	44,0	64,0	80,0	90,0	100,0	—	—		N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0		—	—	N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	—		—	N/A
>4000 and ≤5000	32,0	40,0	56,0	80,0	100,0	112,0	126,0	—	—		N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0		—	—	N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	—		—	N/A
>5000 and ≤6300	40,0	50,0	72,0	100,0	126,0	142,0	160,0	—	—		N/A
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0		—	—	N/A
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	—		—	N/A
>6300 and ≤8000	50,0	64,0	90,0	126,0	160,0	180,0	200,0	—	—		N/A
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0		—	—	N/A
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	—		—	N/A
>8000 and ≤10000	64,0	80,0	112,0	160,0	200,0	220,0	250,0	—	—		N/A
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0		—	—	N/A
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	—		—	N/A
>10000 and ≤12500	80,0	100,0	142,0	200,0	250,0	280,0	320,0	—	—		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:
*) Material group IIIb is allowed if the working voltage does not exceed 50 V
**) B = Basic insulation, S = Supplementary insulation, R = Reinforced insulation

29.2	TABLE: Creepage distances, functional insulation							P
Working voltage (V):	**Creepage distance (mm) Pollution degree**							
	1	**2**			**3**			
		Material group			**Material group**			
		I	**II**	**IIIa/IIIb**	**I**	**II**	**IIIa/IIIb***	**Verdict / Remark**
≤10	0,08	0,4	0,4	0,4	1,0	1,0	1,0	N/A
50	0,16	0,56	0,8	1,1	1,4	1,6	1,8	N/A
125	0,25	0,71	1,0	1,4	1,8	2,0	2,2	N/A
250	0,42	1,0	1,4	2,0	2,5	2,8	3,2	N/A
276	0,48	1,07	1,54	**2,21**	2,76	3,1	3,52	P (3.0)
400	0,75	1,6	2,2	3,2	4,0	4,5	5,0	N/A
500	1,0	2,0	2,8	4,0	5,0	5,6	6,3	N/A
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	N/A
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	N/A
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	N/A
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	N/A

Supplementary information:
*) Material group IIIb is allowed if the working voltage does not exceed 50 V

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Clause	Requirement + Test	Result - Remark	Verdict

30	**TABLE: Resistance to heat and fire**																			
Object/ part No.	Manufacturer / trademark	Type/ model	Ball pressure test °C				Glow wire test (GWT) °C						Glow-wire flammability index (GWFI) °C				Glow- wire ignition temp. (GWIT) °C		Needle-flame test (NFT)	Verdict
			75	125	cl.11 +40	cl. 19 +25	550	650		750		850	550	650	750	850	675	775		
								te	ti	te	ti									
Enclosure	SABIC	SE1X	1.5	-	-	-	-	-	-	NI	NI	-	-	-	-	-	-	-	-	Pass
	SABIC	940	1.5	-	-	-	-	-	-	NI	NI	-	-	-	-	-	-	-	-	Pass
	SABIC	SE100	1.5	-	-	-	-	-	-	NI	NI	-	-	-	-	-	-	-	-	Pass
	SABIC	C2950	1.5	-	-	-	-	-	-	NI	NI	-	-	-	-	-	-	-	-	Pass
	SABIC	CX7211	1.5	-	-	-	-	-	-	NI	NI	-	-	-	-	-	-	-	-	Pass
	SABIC	925U	1.5	-	-	-	-	-	-	NI	NI	-	-	-	-	-	-	-	-	Pass
	SABIC	945	1.5	-	-	-	-	-	-	NI	NI	-	-	-	-	-	-	-	-	Pass
	SABIC	CH6410	1.5	-	-	-	-	-	-	NI	NI	-	-	-	-	-	-	-	-	Pass
	ASAHI KASEI	540V	0.9	-	-	-	-	-	-	NI	NI	-	-	-	-	-	-	-	-	Pass
	COVESTRO	FR6005	1.0	-	-	-	-	-	-	NI	NI	-	-	-	-	-	-	-	-	Pass
	IDEMITSU	AZ2201	1.2	-	-	-	-	-	-	NI	NI	-	-	-	-	-	-	-	-	Pass
	SABIC	EXCY0098	1.2	-	-	-	-	-	-	NI	NI	-	-	-	-	-	-	-	-	Pass

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Clause	Requirement + Test	Result - Remark	Verdict

30	**TABLE: Resistance to heat and fire (continued)**																			
Object/ part No.	Manufacturer / trademark	Type/ model	Ball pressure test °C				Glow wire test (GWT) °C						Glow-wire flammability index (GWFI) °C				Glow- wire ignition temp. (GWIT) °C		Needle - flame test (NFT)	Verdict
			75	125	cl. 11 +40	cl. 19 +25	550	650		750		850	550	650	750	850	675	775		
								te	ti	te	ti									
Enclosure	COVESTRO	6485	1.2	-	-	-	-	-	-	NI	NI	-	-	-	-	-	-	-	-	Pass
Bobbin	Chang Chun	T375J	-	1.0	-	-	-	-	-	-	-	NI	-	-	-	-	-	-	-	Pass
	Chang Chun	T375HF	-	1.0	-	-	-	-	-	-	-	NI	-	-	-	-	-	-	-	Pass
	Chang Chun	T373J	-	1.0	-	-	-	-	-	-	-	NI	-	-	-	-	-	-	-	Pass
	Sumitomo	PM-9820	-	1.0	-	-	-	-	-	-	-	NI	-	-	-	-	-	-	-	Pass
	HITACHI	CP-J-8800	-	1.0	-	-	-	-	-	-	-	NI	-	-	-	-	-	-	-	Pass
	Sumitomo	PM-9630	-	1.0	-	-	-	-	-	-	-	NI	-	-	-	-	-	-	-	Pass
PCB	Wuzhu	WZ-4	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	Shunjia	SJ-B	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	Cheerful	02	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	CHEERFUL	03	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	CHEERFUL	03A	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass

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Clause	Requirement + Test	Result - Remark	Verdict

30	**TABLE: Resistance to heat and fire (continued)**																			
Object/ part No.	Manufacturer / trademark	Type/ model	Ball pressure test °C				Glow wire test (GWT) °C						Glow-wire flammability index (GWFI) °C				Glow-wire ignition temp. (GWIT) °C		Needle - flame test (NFT)	Verdict
			75	125	cl. 11 +40	cl. 19 +25	550	650		750		850	550	650	750	850	675	775		
								te	ti	te	ti									
PCB	Daysun	DS2	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	Yilihua	YLH-1	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	AREX	02V0	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	AREX	03V0	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	AREX	04V0	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	BRITE	DKV0-3A	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	BRITE	DGV0-3A	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	KUOTIANG	C-2	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	KUOTIANG	C-2A	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	TONGCHUAN	TCX	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

30	**TABLE: Resistance to heat and fire (continued)**																			
Object/ part No.	Manufacturer / trademark	Type/ model	Ball pressure test °C				Glow wire test (GWT) °C						Glow-wire flammability index (GWFI) °C				Glow- wire ignition temp. (GWIT) °C		Needle-flame test (NFT)	Verdict
			75	125	cl. 11 +40	cl. 19 +25	550	650		750		850	550	650	750	850	675	775		
								te	ti	te	ti									
PCB	PACIFIC	PW-02	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	PACIFIC	PW-03	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	YUANMAN	1V0	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	XINKE	XK-2	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	XINKE	XK-3	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	HUA SHENG	HS-S	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	DIFEIDA	DFD-1	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	H-FAST	211001	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	H-FAST	411001	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	WALEX	T2	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	WALEX	T2A	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

30	**TABLE: Resistance to heat and fire (continued)**																			
Object/ part No.	Manufacturer / trademark	Type/ model	Ball pressure test °C				Glow wire test (GWT) °C						Glow-wire flammability index (GWFI) °C				Glow- wire ignition temp. (GWIT) °C		Needle-flame test (NFT)	Verdict
			75	125	cl. 11 +40	cl. 19 +25	550	650		750		850	550	650	750	850	675	775		
								t_e	t_i	t_e	t_i									
PCB	WALEX	T2B	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	WALEX	T4	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	HETONG	CEM1	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	HETONG	2V0	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass
	HETONG	FR4	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pass

Supplementary information:

[1] Parts of material classified at least HB40 or if relevant HBF

[2] Parts of material classified as V-0 or V-1

[3] Flame persisting longer than 2 s (= t_e – t_i) need only be reported for unattended appliances

[4] Surrounding parts subjected to the needle-flame test of annex E

[5] Base material classified as V-0 or if relevant VTM-0

[6] The GWIT pre-selection option, the 850 °C GWFI pre-selection option, and the 850 °C GWT are not applicable for attended appliances

[7] NI means no ignition.

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

Appendix no. 1: COMMON MODIFICATIONS FOR EN 60335-1: 2012 + A11: 2014 + A13: 2017 (Group differences for CENELEC and national differences for Germany, United Kingdom, Australia and United States.)			
6	Classification		P
6.1	Delete “class 0” and “class 0I”.		P
7	Marking and instructions		P
7.1	Add: The marking of rated voltage or rated voltage range, for appliances intended to be connected to the supply mains, shall cover: - 230 V for single-phase appliances; - 400 V for multi-phase appliances.	230V included	P
7.10	Add : Devices used to start/stop operational functions of the appliance, if any, shall be distinguished from other manual devices.	No start/stop operational device	N/A
	An indication that the device has been operated shall be given by:		N/A
	-A tactile feedback or		N/A
	-An audible and visual feedback		N/A
	A selector switch with an off-position clearly identifiable is allowed.	No selector switch with off position	N/A
	An ON/OFF switch, if any, is considered a suitable device to stop operational functions.	No ON/OFF switch	N/A
	A plug is not considered a suitable device to stop operational functions, as it can be difficult to be reached by vulnerable persons.	No plug	N/A
7.12	Replace the 3rd, 4th and 5th paragraph by the following		P
	- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.		P
	Children shall not play with the appliance.		P
	Cleaning and user maintenance shall not be made by children without supervision.		P
7.12.Z1	Add the following new subclause before 7.12.1		P

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	The specific instructions related to the safe operation of this appliance shall be collated together in the front section of the user instructions.		P
	The height of the characters, measured on the capital letters, shall be at least 3 mm.		P
	These instructions shall also be available in an alternative format, e.g. on a website		P
7.14	Add: NOTE Z1 For the evaluation of legibility and clarity of safety warnings guidance can be found in IEC 62079.		P
8	Protection against access to live parts		P
8.1.1	Replace the 3rd paragraph by the following: Use of test probe B of and probe 18 of EN 61032, with a force not exceeding 1 N: no contact with live parts		P
11	Heating		P
11.8	Delete the second sentence of the first paragraph: However, if the temperature rise of the motor winding exceeds the value specified in table 3 or if there is doubt with regard to the temperature classification of the insulation of the motor, the tests of annex C are carried out.	No motor	N/A
	Replace in Table 3 the row “External enclosure of motor-operated appliances, except handles held in normal use”		P
15	Moisture resistance		P
15.1.2	Add the following after the second paragraph:		N/A
	Appliances with an automatic cord reel are tested with the cord in the most unfavourable position in such a way that the reeling of the wet cord may affect electrical insulation during operation. The cord shall not be dried before reeling.	No automatic cord reel	N/A
20	Stability and mechanical hazards		P
20.2	Replace NOTE 1 by the following requirement: For appliances having dangerous movable parts, due to their main function, e.g. the needle of a sewing machine, tools of kitchen machines or the blade of an electrical knife, full protection is not possible for performing their intended use.	No moving part	N/A
22	Construction		P

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Added: Hazard includes ingestion or a choking hazard for vulnerable people.	No handles and knobs	N/A
24	Components		P
24.1	Components shall comply with the safety requirements specified in the relevant standards as far as they reasonably apply.		P
	List of components ..... :	(see appended table)	P
	Clause 29 of this standard apply between live parts of components and accessible parts of the appliance, unless otherwise specified		P
	Clause 30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections inside		P
	Components that have not been previously tested or do not comply with the standard for the relevant component are tested according to the requirement of 30.2.		P
	Components that have been previously tested and shown to comply with the resistance to fire requirements in the standard for the relevant component need not be retested provided that:	PCB	P
	– the severity specified in the component standard is not less than the severity specified in 30.2 of this standard,		P
	and –unless the preselection alternative is used, the test report for the component states whether it complied with the standard for the relevant component with or without flame. Flames existing for a cumulative time not exceeding 2 s during the test are ignored.		P
	If the above two conditions are not satisfied, the component is tested as part of the appliance.		P
	If components have not been tested and found to comply with relevant IEC standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9	Transformer is tested according to annex G	P
	For components mentioned in 24.1.1 to 24.1.9 no additional tests specified in the relevant component standard are necessary other than those specified in 24.1.1 to 24.1.9		P

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Components not tested and found to comply with relevant standard and components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance		P
	Lampholders and starterholders that have not being tested and found to comply with the relevant standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant standard.	No lampholder or starterholder	N/A
	No additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of IEC 60320-1 and IEC 60309.		P
	Plugs and socket-outlets and other connecting devices of interconnection cords shall not be interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1, if direct supply to these parts from the supply mains could give rise to a hazard.		P
24.1.3	Add NOTE Z1 For this test a thermostat or timer that is operating the relay or contactor is considered to be a switch.		N/A
24.1.7	Replaced by: If the remote operation of the appliance is via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is EN 41003.	Not for remote operation	N/A
	Compliance with Clause 8 of this standard shall not be impaired by connecting the appliance to a device covered by EN 41003.		N/A
24.Z1	For motor running capacitors (IEC 60252-1 type P2) with a metallic enclosure having an overpressure fuse the flame testing of internal plastic parts supporting current carrying connections as required in 30.2.2 and 30.2.3.1 is not necessary.	No motor running capacitors	N/A
25	Supply connection and external flexible cords		N/A
25.6	Add: Supply cords of single-phase portable appliance shaving a rated current not exceeding 16 A shall be fitted with a plug complying with the following standard sheets of IEC/TR 60083.		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	−for class I appliances standard sheet C2b, C3b or C4;		N/A
	−for class II appliances standard sheet C5 or C6.		N/A
25.7	Add the following text after the last dash and before the paragraph regarding “Supply cords for class III appliances”:		N/A
	Halogen-free thermoplastic compound sheathed.		N/A
	• halogen-free thermoplastic compound sheathed cords (code designation H03Z1Z1H2-F, H03Z1Z1-F), for appliances having a mass not exceeding 3 kg;		N/A
	• halogen-free thermoplastic compound sheathed cords (code designation H05Z1Z1H2-F or H05Z1Z1-F), for other appliances;		N/A
	Cross-linked halogen-free compound sheathed.		N/A
	• cross-linked halogen-free compound sheathed cords (code designation H07ZZ-F)		N/A
26	Terminals for external conductors		N/A
26.11	Add: Conductors connected by soldering are not considered to be positioned or fixed so that reliance is not placed upon the soldering alone to maintain them in position unless they are held in place near the terminals independently of the solder		N/A
29	Clearances, creepage distances and solid insulation		P
29.3.Z1	Appliance shall be constructed so that if there is a possibility of damaging the insulation during installation, the insulation shall withstand the scratch and penetration test of 21.2.	No installation required	N/A
32	Radiation, toxicity and similar hazards		P
	Add: Compliance regarding electromagnetic fields is checked according to EN 50366 or EN 62233.		P
I	Annex I (normative) Motors having basic insulation that is inadequate for the rated voltage of the appliance		N/A
19.I.101	The appliance is supplied at rated voltage and operated under normal operation with each of the following fault conditions		N/A
	When any of the fault conditions are simulated, the duration of the test is as specified in 19.7.		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
ZA	Annex ZA (normative) Special national conditions		P
19.5	Norway: The test is also applicable to appliances intended to be permanently connected to fixed wiring.		N/A
22.2	Norway: The second paragraph of this subclause that deals with single-phase, permanently connected class I appliances having heating elements, is not applicable due to the supply system.		N/A
25.6 and 25.25	Information concerning National plug and socket-outlets is available from the CENELEC website. Normative national requirements concerning plug and socket-outlets are shown in the relevant National standard.		P
25.8	Ireland and United Kingdom: In the table, replace the line for 10 A and 16 A by: > 10 and ≤13 1,25 > 13 and ≤16 1,5	No supply cord provided	N/A
ZB	Annex ZB (informative) A-deviations		P
25.6	Ireland (Statutory Instrument No. 525 of 1997) These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs complying with I.S.401:1997, or equivalent, to be fitted to domestic appliances.		N/A
	United Kingdom(Statutory Instrument 1994 No 1768) These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs to BS 1363 to be fitted to domestic appliances. It also allows plugs to BS 4573 and EN 50075 to be fitted to shavers and toothbrushes.		P
ZC	Annex ZC (normative) Normative references to international publications with their corresponding European publications		P
	This Standard incorporates provisions from the publications listed		P
ZD	ANNEX ZD (INFORMATIVE) IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS		N/A
	A list of code designations for different types of flexible cords		N/A
ZE	ANNEX ZE (INFORMATIVE) SPECIFIC ADDITIOINAL REQUIREMENTS FOR APPLIANCES AND MACHINES INTENDED FOR COMMERCIAL USE		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Modifications to this standard are applicable for appliances and machines intended for commercial use.		N/A
ZF	ANNEX ZF (INFORMATIVE) CRITERIA APPLIED FOR THE ALLOCATION OF PRODUCTS COVERED BY STANDARDS IN THE EN 60335 SERIES UNDER LVD OR MD		N/A
	Table ZF1 listed the standards under CENELEC/TC 61 with their allocation under LVD or MD		N/A
ZG	Annex ZG (normative) UV appliances		N/A
	Modifications to this standard apply to appliances having UV emitters		N/A
ZZ	ANNEX ZZ (INFORMATIVE) COVERAGE OF ESSENTIAL REQUIREMENTS OF EC DIRECTIVES		N/A
	The standard covers all relevant essential requirements as given in the EC Directives 2006/95/EC and 2006/42/EC.		N/A
Annex EN 60335-1:2012/A11:2014			
Foreword	Add the following clarification text just under the dow date: The dow stated in this EN 60335-1:2012 and its relevant amendments is applicable only when the Part 1 is used to test products for which no Part 2 exists. This means that when a Part 2 exists the dow is the one mentioned in the relevant Part 2.		P
7.14	In NOTE Z1, replace "IEC 82079-1" by "EN 82079-1".		N/A
Annex ZF	In Table ZF.1 – List of standards under CLC/TC 61, replace line of EN 60335-2-38		N/A
Annex for EN 60335-1:2012/A13:2017			
Annex ZZA (informative)	Relationship between this European standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered		P
	Compliance with this Part 1 when used together with the relevant Part 2 provides one means of conformity with the safety objectives.		P
Clause(s) / sub-clause(s) of this EN / Content for Safety objectives of Directive 2014/35/EU			P
1	General conditions		P

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Clause 4, 7 / 1 a) the essential characteristics, the recognition and observance of which will ensure that electrical equipment will be used safely and in applications for which it was made, shall be marked on the electrical equipment, or, if this is not possible, on an accompanying document;	Safety symbols and sentences marked on label and indicated in manual	P
	Clause 4, 7 / 1 b) the electrical equipment, together with its component parts, shall be made in such a way as to ensure that it can be safely and properly assembled and connected;	Not for user assemble. Plug and output connection provided.	P
	Clause 4, 7 / 1 c) the electrical equipment shall be so designed and manufactured as to ensure that protection against the hazards set out in points 2 and 3 is assured, providing that the equipment is used in applications for which it was made and is adequately maintained.	All hazardous live parts are enclosed in enclosure. Sufficient protection provided.	P
2	Protection against hazards arising from the electrical equipment		P
	Measures of a technical nature shall be laid down in accordance with point 1, in order to ensure that:		P
	Clause 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31 / 2 a) persons and domestic animals are adequately protected against the danger of physical injury or other harm which might be caused by direct or indirect contact;	Electric shock hazard prevented	P
	Clause 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31 / 2 b) temperatures, arcs or radiation which would cause a danger, are not produced;	Operation temperatures are limited in a safety range	P
	Clause 6, 7, 11, 15, 17, 18, 19, 20, 21, 22, 24, 25, 30, 32 / 2 c) persons, domestic animals and property are adequately protected against non-electrical dangers caused by the electrical equipment which are revealed by experience;	All other hazards specified in standard are considered	P
3	Protection against hazards which may be caused by external influences on the electrical equipment		P
	Technical measures shall be laid down in accordance with point 1, in order to ensure that the electrical equipment:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Clause 6, 7, 11, 17, 18, 19, 20, 21, 22 / 3 a) meets the expected mechanical requirements in such a way that persons, domestic animals and property are not endangered;	Mechanical hazards considered	P
	Clause 7, 11, 15, 19, 22, 25, 32 / 3 b) is resistant to non-mechanical influences in expected environmental conditions, in such a way that persons, domestic animals and property are not endangered;	Non-mechanical influences considered	P
	Clause 6, 7, 9, 10, 11, 14, 17, 18, 19, 21, 22 / 3 c) does not endanger persons, domestic animals and property in foreseeable conditions of overload.	Overload was considered	P
Annex ZZB (informative)	Relationship between this European standard and the essential requirements of Directive 2006/42/EC aimed to be covered		N/A
	Compliance with this Part 1 when used together with the relevant Part 2 provides one means of conformity with the relevant essential health and safety requirements.		N/A
Clause(s) / sub-clause(s) of this EN Essential Health and Safety Requirements of 2006/42/EC.			N/A
	All clauses / All		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

Appendix 2: Annex BB of IEC 61558-2-16:2009 + A1:2013

BB	**Annex BB**		P
	Particular requirements for associated transformers for switch mode power supplies with internal frequencies > 500 Hz		P
BB.8	**MARKING AND OTHER INFORMATION**		N/A
BB.8.2	Marking for transformers IP00 or for associated transformers: type and trademark, instruction sheets		N/A
BB.8.11	Correct symbols:		N/A
	Volts	V	N/A
	Amperes	A (mA)	N/A
	Volt amperes (or volt-amperes reactive for reactors)	VA or (VAR)	N/A
	Watts	W	N/A
	Hertz	Hz	N/A
	Input	PRI	N/A
	Output	SEC	N/A
	Direct current	d.c. (DC) or ⎓	N/A
	Neutral	N	N/A
	Single-phase a.c.	~	N/A
	Three-phase a.c.	3 ~	N/A
	Three-phase and neutral a.c.	3N ~	N/A
	Power factor	cosφ	N/A
	Class II construction	⧈	N/A
	Class III construction	III	N/A
	Fuse-link	⎓	N/A
	Rated max. ambient temperature	t_a	N/A
	Frame or core terminal	⏚	N/A
	Protective earth	⏚	N/A
	IP number	IPXX	N/A
	Earth (ground for functional earth)	⏚	N/A
	For indoor use only	⌂	N/A

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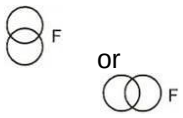
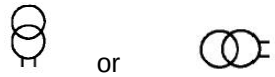
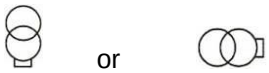
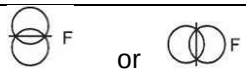
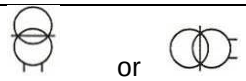
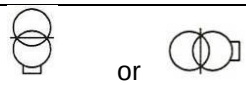
	tw5 YYY		N/A
	tw10 YYY		N/A
	twx YYY		N/A
	Additional Symbols (IEC 61558-2-16:09)		N/A
	SMPS incorporating a **Fail-safe separating transformer**		N/A
	Additional Symbols (IEC 61558-2-16:09)		N/A
	SMPS incorporating a **Non-short-circuit-proof separating transformer**		N/A
	SMPS incorporating a **Short-circuit-proof separating transformer** (inherently or non-inherently)		N/A
	SMPS incorporating a **Fail-safe isolating transformer**		N/A
	SMPS incorporating a **Non-short-circuit-proof isolating transformer**		N/A
	SMPS incorporating a **Short-circuit-proof isolating transformer** (inherently or non-inherently)		N/A
	SMPS incorporating a **Fail-safe safety isolating transformer**		N/A
	SMPS incorporating a **Non-short-circuit-proof safety isolating transformer**		N/A
	SMPS incorporating a **Short-circuit-proof safety isolating transformer** (inherently or non-inherently)		N/A
	SMPS (Switch mode power supply unit)		N/A

BB.9	**PROTECTION AGAINST ELECTRIC SHOCK**	N/A

BB.10	**CHANGE OF INPUT VOLTAGE SETTING**	N/A

BB.11	**OUTPUT VOLTAGE AND OUTPUT CURRENT UNDER LOAD**	N/A

BB.12	**NO-LOAD OUTPUT VOLTAGE (see supplementary requirements in Part 2)**	N/A

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BB.13	**SHORT-CIRCUIT VOLTAGE**	N/A

BB.14	**HEATING**		P
BB.14.2	Application of 14.1 or 14.3 according to the insulation system	Tested together with power supply	P
BB.14.2.1	Class of isolating system (classified materials according to IEC 60 085 and IEC 60 216)	Class B	P
BB.14.2.2	No classified material, or system but the measured temperature does not exceed the value of Class A		N/A
BB.14.2.3	No classified material or system but the measured temperature exceeds the value for Class A, the live parts of the transformers are submitted to the test of 14.3		N/A
BB.14.3	Accelerated ageing test for undeclared class of isolating system		N/A
	Cycling test (10 cycles):		N/A
	– measuring of the no-load input current (mA)		N/A
BB.14.3.1	– heat run (temperature in table 2)		N/A
BB.14.3.2	– vibration test: 30 min; amplitude 0,35 mm; frequency range: 10 Hz, 55 Hz, 10 Hz		N/A
BB.14.3.3	– moisture treatment (48 h, 17.2)		N/A
BB.14.3.4	Measurements and tests at the beginning and after each test:		N/A
	– deviation of the no-load input current, measured at the beginning of the test is 30%		N/A
	– insulation resistance acc. cl.18.1 and 18.2		N/A
	– electric strength, no breakdown (18.3); 2 min; test voltage 35% of specified value (table VI)		N/A
	– Transformers (50 or 60 Hz version) are tested after the dielectric strength test as follows: under no load; duration: 5 min; Upri(V):1,2 times rated supply voltage; frequency (Hz): 2 times rated frequency		N/A

BB.15	**SHORT-CIRCUIT AND OVERLOAD PROTECTION**	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

BB.16	**MECHANICAL STRENGTH**	N/A

BB.17	**PROTECTION AGAINST HARMFUL INGRESS OF WATER AND MOISTURE**	N/A

BB.18	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		P
BB.18.2	Insulation resistance between:		P
	– live parts and body for basic insulation 2 M		N/A
	– live parts and body for reinforced insulation 7 M		N/A
	– input circuits and output circuits for basic insulation 2 M		N/A
	– input circuits and output circuits for double or reinforced insulation 5 M	Between primary and secondary windings: 199MΩ	P
	– each input circuit and all other input circuits connected together 2 M		N/A
	– each output circuit and all other output circuits connected together 2 M		N/A
	– hazardous live parts and metal parts with basic insulation (Class II transformers) 2 M		N/A
	– body and metal parts with basic insulation (Class II transformers) 5 M		N/A
	– metal foil in contact with inner and outer surfaces of enclosures 2 M		N/A
BB.18.3	Electric strength test (1 min): no flashover or breakdown:		P
	1) basic insulation between input circuits and output circuits; working voltage (V); test voltage (V) ..... :		N/A
	2) double or reinforced insulation between input circuits and output circuits; working voltage (V); test voltage (V) ..... :	Working voltage:276V Test voltage: 3976V	P
	3) basic or supplementary insulation between:		N/A
	a) live parts of different polarity; working voltage (V); test voltage (V)		N/A
	b) live parts and the body if intended to be connected to protective earth ..... :		N/A
	c) inlet bushings and cord guards and anchorages ..... :		N/A

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	d) live parts and an intermediate conductive part ..... :		N/A
	e) intermediate conductive parts and body :		N/A
	4) Reinforced insulation between the body and live parts; working voltage (V); test voltage (V) ..... :		N/A
	5) Functional insulation for windings intended to be connected in series or parallel (test voltage = working voltage + 500 V) (IEC 61558-2-16:2009)		N/A
18.102 (A1)	Partial discharge tests according IEC 60664-1 , if the working voltage is > 750 V peak		N/A
	Partial discharge is $\leq$ 10 pC at time P2 See Fig. 19.101		N/A

BB.19	**CONSTRUCTION**		P
BB.19.1	Separation of input and output circuits		P
BB.19.1.1	SMPS incorporating auto-transformers (IEC 61558-2-16:2009)		N/A
BB.19.1.2	SMPS incorporating separating transformers (IEC 61558-2-16:2009)		N/A
BB.19.1.2.1	Input and output circuits electrically separated. (IEC 61558-2-16:09)		N/A
BB.19.1.2.2	The insulation between input and output winding(s) consist of basic insulation (IEC 61558-2-16:09)		N/A
	Class I SMPS		N/A
	– Insulation between input windings and body consist of basic insulation		N/A
	– Insulation between output windings and body consist of basic insulation		N/A
	Class II SMPS (IEC 61558-2-16:09)		N/A
	– Insulation between input windings and body consist of double or reinforced insulation		N/A
	– Insulation between output windings and body consist of double or reinforced insulation		N/A
BB.19.1.2.3	The insulation between input windings and intermediate conductive parts and the output windings and intermediate part consist of basic insulation (IEC 61558-2-16:09)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	For class I SMPS the insulation between input and output windings via the intermediate conductive parts consist of basic insulation (IEC 61558-2-16:09)		N/A
	For class II SMPS the insulation between input winding and the body and between the output windings and the body via the intermediate conductive parts consist of double or reinforced insulation (IEC 61558-2-16:09)		N/A
BB.19.1.2.4	Parts of output circuits may be connected to protective earth (IEC 61558-2-16:09)		N/A
BB.19.1.2.5	No direct contact between output circuits and the body, unless: (IEC 61558-2-16:2009)		N/A
	– Allowed for associated transformers by the equipment standard		N/A
	– Clause 19.8 of part 1 is fulfilled		N/A
BB.19.1.3	SMPS incorporating isolating transformers and safety isolating transformers (IEC 61558-2-16:09)		P
BB.19.1.3.1	Input and output circuits electrically separated (IEC 61558-2-16:09)		P
	No possibility of any connection between these circuits		P
BB.19.1.3.2	The insulation between input and output winding(s) consist of double or reinforced insulation (exception see 19.1.3.4) (IEC 61558-2-16:09)		P
	Class I SMPS **not** intended for connection to the mains by a plug:		—
	– Insulation between input windings and body connected to earth consist of basic insulation rated to the input voltage		N/A
	– Insulation between output windings and body, connected to earth consist of basic insulation rated for the output voltage		N/A
	Class I SMPS intended for connection to the mains by a plug (EN 61558-2-16:09):		N/A
	– Insulation between input windings and body connected to earth consist of basic insulation rated to the working voltage		N/A
	– Insulation between output windings and body, connected to earth consist of supplementary insulation rated for the working voltage		N/A

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	Class II SMPS (IEC 61558-2-16:09)		N/A
	– Insulation between input windings and body consist of double or reinforced insulation rated to the input voltage		N/A
	– Insulation between output windings and body consist of double or reinforced insulation, rated to the output voltage		N/A
BB.19.1.3.3	SMPS with intermediate conductive parts not connected to the body (between input/output) (EN 61558-2-16:09):		N/A
BB.19.1.3.3.1	For class I and class II SMPS the insulation between input and output windings, via intermediate conductive parts, consist of double or reinforced insulation, rated to the working voltage (EN 61558-2-16:09)		N/A
	– For class II SMPS the insulation between input winding and the body and between the output windings and the body via the intermediate conductive parts consist of double or reinforced insulation. (rated to the input voltage, for SELV circuits only basic insulation to the body))		N/A
	– For transformers, different from independent, the insulation between input and output windings, via intermediate conductive parts, consist of double or reinforced insulation, rated to the working voltage.		N/A
BB.19.1.3.3.2	Class I transformers with earthed core, and not allowed for class II equipment (EN 61558-2-16:09)		N/A
	– Insulation from the input to the earthed core: basic insulation rated for the input voltage		N/A
	– Insulation from the output voltage to the earthed core: basic insulation rated for the output voltage		N/A
BB.19.1.3.3.3	Insulation between : input to intermediate conductive parts and output and intermediate parts consist of at least basic insulation (EN 61558-2-16:09)		N/A
	– If the insulation from input or output to the intermediate metal part is less than basic insulation, the part is considered to be connected to input or output.		N/A

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BB.19.1.3.4	For class I SMPS, with protective screen, **no**t connected to the mains by a plug the following conditions comply (EN 61558-2-16:09):		N/A
	– The insulation between input winding and protective screen consist of basic insulation (rated input voltage)		N/A
	– The insulation between output winding and protective screen consist of basic insulation (rated output voltage)		N/A
	– The protective screen consist of metal foil or a wire wound screen extending the full width of the windings and has no gaps or holes		N/A
	– Where the protective screen does not cover the entire width of the input winding, additional insulation to ensure double insulation in this area, is used.		N/A
	– If the screen is made by a foil, the turns are isolated, overlap at least 3 mm		N/A
	– The cross-section of the screen and the lead out wire is at least corresponding to the rated current of the overload device		N/A
	– The lead our wire is soldered or fixed to the protective screen.		N/A
	Protective screening is not allowed for SMPS with plug connection to the mains (EN 61558-2-16:09)		N/A
BB.19.1.3.5	No connection between output circuit and protective earth, except of associated transformers (allowed by equipment standard) or 19.8 is fulfilled (EN 61558-2-16:09)		N/A
BB.19.1.3.6	No connection between output circuit and body, except of associated transformers (allowed by equipment standard) (EN 61558-2-16:09)		N/A
BB.19.1.3.7	The distance between input and output terminals for the connection of external wiring is 25 mm	Building-in transformer	N/A
BB.19.1.3.8	Portable SMPS having an rated output $\leq$ 630 VA (EN 61558-2-16:09)		P
BB.19.1.3.9	No connection between output circuit, and body except of associated transformers (allowed by equipment standard) (EN 61558-2-16:09)	No connection	P
BB.19.1.3.10	Protective screening is not allowed for SMPS with plug connection to the mains (EN 61558-2-16:09)	Building-in transformer	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

BB.19.11	Handles, levers, knobs, etc.:	Building-in transformer, no such part	N/A
	– insulating material		N/A
	– supplementary insulation covering		N/A
	– separated from shafts or fixing by supplementary insulation		N/A
BB.19.12	Windings construction		P
BB.19.12.1	Undue displacement in all types of transformers not allowed:		P
	– of input or output windings or turns thereof		P
	– of internal wiring or wires for external connection	Building-in transformer	N/A
	– of parts of windings or of internal wiring in case of rupture or loosening	Building-in transformer	N/A
BB.19.12.2	Serrated tape:		N/A
	– distance through insulation according to table 13		N/A
	– one additional layer of serrated tape, and		N/A
	– one additional layer without serration		N/A
	– in case of cheek less bobbins the end turns of each layer shall be prevented from being displaced		N/A
BB.19.12.3 (A1)	Insulated windings wires providing basic, supplementary or reinforced insulation, meet the following requirements:		P
	• Multi-layer extruded or spirally wrapped insulation, passed the tests of annex K		P
	• Basic insulation: two wrapped or one extruded wire		N/A
	• Supplementary insulation: two layers, wrapped or extruded		N/A
	• Reinforced insulation: three layers wrapped or extruded		P
	Spirally wrapped insulation:		N/A
	• creepage distances between wrapped layers > cl. 26 _ P1 values		N/A
	• path between wrapped layers sealed, the test voltage of K2 is multiplied with 1,35		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	• test 26.2.3 – Test A, passed for wrapped layers		N/A
	• the finished component pass the electric strength test according to cl. 18.3		N/A
a)	Insulated winding wire used for basic or supplementary insulation in a wound part:		N/A
	• comply with annex K		N/A
	• two layers for supplementary insulation		N/A
	• one layer for basic insulation		N/A
	• one layer for mechanical separation between the insulated wires of primary and secondary. This layer fulfils the requirement of basic insulation.		N/A
b)	Insulated winding wire used for reinforced insulation in a wound part:		P
	• comply with annex K	Certified triple insulated winding wire	P
	• three layers		P
	• relevant dielectric strength test of 18.3		P
	Where the insulated winding wire is wound:		P
	• upon metal or ferrite cores		P
	• upon enamelled wire		P
	• under enamelled wire		P
	• one layer for mechanical separation between the insulated wires and the core or the enamelled wires is required. This layer fulfils the requirement of basic insulation.		P
	• both windings shall not touch each other and also not the core.		P
	100 % routine test of Annex K3 of part 1 is fulfilled		N/A
	no creepage distances and clearances for insulated winding wirers		P
	for TIW wires values of box 2) c) of table 13, table C.1 and table D.1 of part 1 and of clause 26.106 are not required		P
FIW	Transformers which use FIW wire		-

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BB 19.12.101 (A1)	Max. class F for transformers which use FIW-wire	FIW not used	N/A
BB 19.12.102 (A1)	FIW wires comply with IEC 60851-5, Ed.4.1; IEC 60317-0-7 and IEC 60317-56, Ed.1.		N/A
	• other nominal diameter as mentioned in table 19.101 can be calculated with the formula after table 19.111		N/A
	FIW wire used for basic or supplementary insulation for transformers according 19.1.2 (separating-transformers) of IEC 61558-2-16:		N/A
	• the test voltage of table 8a – part 1, based on the working voltage of basic or supplementary insulation, comply with the min. voltage strength of table 19.111		N/A
	• one layer for mechanical separation is located between the insulated wires of primary and secondary. This layer fulfil the requirement of basic insulation		N/A
	• between FIW and enamelled wire, no requirements of creepage distances and clearances		N/A
	• no touch of FIW and enamelled wires (grad 1, or grad 2 …)		N/A
	FIW wire used for double or reinforced insulation for transformers according 19.1.3 (isolating and safety isolating transformers) of IEC 61558-2-16 (PRI and SEC basic insulated FIW-wire):		N/A
	• the test voltage of table 8a – part 1, based on the working voltage of basic or supplementary insulation, comply with the min. voltage strength of table 19.111		N/A
	• for primary and secondary winding FIW-wire for basic insulation is used		N/A
	• one layer for mechanical separation is located between the insulated wires of primary and secondary. This layer fulfil the requirement of basic insulation		N/A
	• no touch between the basic insulated PRI and SEC FIW-wires		N/A
	• between PRI- and SEC-FIW wires, no requirements of creepage distances and clearances		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Alternative construction used for reinforced insulation (reinforced insulated FIW wire and enamelled wire)		N/A
	• the test voltage of table 8a – part 1, based on the working voltage reinforced insulation, comply with the min. voltage strength of table 19.111		N/A
	• one layer for mechanical separation is located between the reinforced insulated FIW wire and the enamelled wire. This layer fulfil the requirement of basic insulation		N/A
	• no touch between the FIW wire and the enamelled wire		N/A
	• between the reinforced FIW wire and any other parts, no requirements of creepage distances and clearances exist		N/A
	Alternative construction with FIW wires, basic or supplementary insulated for transformers with double or reinforced insulation according to 19.1.3 (basic/supplementary insulated FIW wire + enamelled wire + creepage distance and clearances for basic insulation)		N/A
	• the test voltage of table 8a – part 1, based on the working voltage of basic or supplementary insulation, comply with the min. voltage strength of table 19.111		N/A
	• PRI or SEC basic insulated FIW wire and to the other winding (enamelled wire) requirements of supplementary insulation		N/A
	• creepage distances and clearances between the basic insulated FIW wire and the enamelled wire for basic or supplementary insulation are required.		N/A
	Where the FIW wire is wound		N/A
	• upon metal or ferrite cores		N/A
	• one layer for mechanical separation between the insulated wires and the core or the enamelled wires is required. This layer fulfils the requirement of basic insulation.		N/A
	• both windings shall not touch each other and also not the core.		N/A

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BB.20	**COMPONENTS**	N/A

BB.21	**INTERNAL WIRING**	N/A
BB.22	**SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CABLES AND CORDS**	N/A

BB.23	**TERMINALS FOR EXTERNAL CONDUCTORS**	N/A

BB.24	**PROVISION FOR PROTECTIVE EARTHING**	N/A

BB.25	**SCREWS AND CONNECTIONS**		N/A

BB.26	**CREEPAGE DISTANCES AND CLEARANCES**		P
BB.26.1	See 26.101		P
BB.26.2	Creepage distances (cr) and clearances (cr)		N/A
BB.26.2.1	Windings covered with adhesive tape		N/A
	– the values of pollution degree 1 are fulfilled		N/A
	– all isolating material are classified acc. to IEC 60085 and IEC 60216		N/A
	– test A of 26.2.3 is fulfilled		N/A
BB.26.2.2	Uncemented insulating parts pollution degree P2 or P3	Pollution degree 2	P
	– all isolating material are classified acc. to IEC 60085 and IEC 60216		P
	– values of pollution degree 1 are not applicable		P
BB.26.2.3	Cemented insulating parts		N/A
	– all isolating materials are classified acc. to IEC 60085 and IEC 60216		N/A
	– values of distance through insulation (dti) are fulfilled		N/A
	– creepage distances and clearances are not required		N/A
	– test A of this sub clause is fulfilled		N/A
	Test A		N/A
	– thermal class		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	– working voltage		N/A
	– Test with three specially specimens, with uninsulated wires, without impregnation or potting	(see appended table)	N/A
	Two of the three specimens are subjected to:		N/A
	– the relevant humidity treatment according to 17.2 (48 h)		N/A
	– the relevant dielectric strength test of 18.3 multiplied with factor 1,35		N/A
	– One of the three specimens is subjected to the relevant dielectric strength test of 18.3 multiplied by the factor 1,35 immediately at the end of the last cycle with high temperature		N/A
	Impulse dielectric test according to 4.1.1.2.1 of IEC 60 664-1 (1,2 / 50 s waveform) – see Annex R of IEC 61558-1		N/A
BB.26.2.4	Enclosed parts, by impregnation or potting		N/A
BB.26.2.4.1	– The requirements of reduced values as stated for pollution degree 1 (P1) are fulfilled		N/A
	– all isolating materials are classified acc. to IEC 60085 and IEC 60216		N/A
	Test B		N/A
	– thermal class		N/A
	– working voltage		N/A
	– Test with three specially specimens, potted or impregnated. The dielectric strength test is applied directly to the joint.	(see appended table)	N/A
	Two of the three specimens are subjected to:		N/A
	– the relevant humidity treatment according to 17.2 (48 h)		N/A
	– the relevant dielectric strength test of 18.3 multiplied with factor 1,25		N/A
	– One of the three specimens is subjected to the relevant dielectric strength test of 18.3 multiplied by the factor 1,25 immediately at the end of the last cycle with high temperature		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	The three spacemen pass the Impulse dielectric test according to 4.1.1.2.1 of IEC 60 664-1 (1,2 / 50 s waveform) – see Annex R of IEC 61558-1		N/A
BB.26.2.4.2	– The requirements of distance through insulation (dti) are fulfilled. (P1 values are not required)		N/A
	– all isolating materials are classified acc. to IEC 60085 and IEC 60216		N/A
	Test C		N/A
	– thermal class		N/A
	– working voltage		N/A
	– Test with three specimens, potted or impregnated. (finished components)	(see appended table)	N/A
	– Neither cracks, nor voids in the insulating compounds		N/A
	Two of the three specimens are subjected to:		N/A
	– the relevant humidity treatment according to 17.2 (48 h)		N/A
	– the relevant dielectric strength test of 18.3 multiplied with factor 1,35		N/A
	– One of the three specimens is subjected to the relevant dielectric strength test of 18.3 multiplied by the factor 1,35 immediately at the end of the last cycle with high temperature		N/A
	The three spacemen pass the Impulse dielectric test according to 4.1.1.2.1 of IEC 60 664-1 (1,2 / 50 s waveform) – see Annex R of IEC 61558-1		N/A
BB.26.3	Distance through insulation		N/A
	For double or reinforced insulation, the required values of Tables 13, C1, and D1 – boxes 2b, 2c and 7 are fulfilled	Comply with 19.12.3	N/A
	The insulation fulfil the material classification according IEC 60085 or 60216 or the test of 14.3		N/A
BB.26.3.1	Reduced values of the thickness of insulation for supplementary or reinforced insulation are allowed if the following conditions are fulfilled:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	– the isolating materials are classified acc. to IEC 60085 and IEC 60216		N/A
	– the test of 14.3 is fulfilled		N/A
	– If both requirements are fulfilled, the required values for solid insulation can be multiplied by 0,4		N/A
	– Minimum thickness of reinforced insulation ≥0,2 mm		N/A
	– Minimum thickness of supplementary insulation ≥0,1 mm		N/A
BB.26.3.2	Insulation in thin sheet form		N/A
	– If the layers are non-separable (glued together):		N/A
	– The requirement of 3 layers is fulfilled		N/A
	– The mandrel test according 26.3.3 is fulfilled with 150 N		N/A
	– The required values for d.t.i. of Tables 13, C.1 and D.1 – marked by index ”e” is fulfilled.		N/A
	– If the layers are separated:		N/A
	– The requirement of 2 layers is fulfilled		N/A
	– If serrated tape is used, 1 additional layer (serrated) and one additional layer without serration is required		N/A
	– The mandrel test according 26.3.3 is fulfilled on each layer with 50 N		N/A
	– The required values for d.t.i. of Tables 13, C.1 and D.1 – marked by index ”e” is fulfilled.		N/A
	– If the layers are separated (alternative:		N/A
	- The requirement of 3 layers is fulfilled		N/A
	– If serrated tape is used, 1 additional layer (serrated) and one additional layer without serration is required		N/A
	– The mandrel test according 26.3.3 is fulfilled on 2/3 of the layers with 100 N		N/A
	– The required values for d.t.i. of Tables 13, C.1 and D.1 – marked by index ”e” is fulfilled.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test according to 14.3 and if the isolating materials are classified acc. to IEC 60085 and IEC 60216 no distances through insulation are required for insulation in thin sheet form		N/A
	The figures within square brackets in box 2 and 7 of table 13 (C.1/D.1) are used for insulation in thin sheet form as follows:		N/A
	– rated output > 100 VA values in square brackets apply		N/A
	– rated output 25 VA 100 VA 2/3 of the value in square brackets apply		N/A
	– rated output __ 25 VA 1/3 of the value in square brackets apply		N/A
BB.26.3.3	Mandrel test of insulation in thin sheet form (specimen of 70 mm width are necessary):		N/A
	– If the layers are non-separable – at least 3 layers glued together fulfil the test:		N/A
	– pull force of 150 N		N/A
	– high voltage test of 5,0 kV or the test voltage of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdown.		N/A
	– If the layers are separable and 2/3 of at least 3 layers fulfil the test.		N/A
	– pull force of 100 N		N/A
	– high voltage test of 5,0 kV or the test voltage of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdowns.		N/A
	– If the layers are separable 1 of at least 2 layers fulfil the test:		N/A
	– pull force of 50 N		N/A
	– high voltage test of 5,0 kV or the test voltage of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdown.		N/A
BB.26.101	Creepage distances, clearances and distances through insulation, specified values according to (IEC 61558-2-16:09):		P
	– table 13, material group IIIa (part 1)		P
	– table C, material group II (part 1)		N/A
	– table D, material group I (part 1)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	– working voltage	276V rms	P
	– rated supply frequency 50/60 Hz	50-60Hz	P
	– rated internal frequency	Measured: 67kHz	P
	1. Insulation between input and output circuits (basic insulation):		N/A
	a) measured values specified values (mm) ..... :		N/A
	2. Insulation between input and output circuits (double or reinforced insulation):		P
	a) measured values specified values (mm) ..... :	Primary winding to secondary winding: Cr/Cl: 7.8 > 7.55 (Altitude 5000m is considered)	P
	b) measured values specified values (mm) ..... :		N/A
	c) measured values specified values (mm) ..... :	TIW used as secondary winding and 3 layers of insulation tape between primary and secondary windings	P
	3. Insulation between adjacent input circuits: measured values specified values (mm) ..... :		N/A
	Insulation between adjacent output circuits: measured values specified values (mm) ..... :		N/A
	4. Insulation between terminals for external connection:		N/A
	a) measured values specified values (mm) ..... :		N/A
	b) measured values specified values (mm) ..... :		N/A
	c) measured values specified values (mm) ..... :		N/A
	5. Basic or supplementary insulation:		N/A
	a) measured values specified values (mm) ..... :		N/A
	b) measured values specified values (mm) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	c) measured values specified values (mm) ..... :		N/A
	d) measured values specified values (mm) ..... :		N/A
	e) measured values specified values (mm) ..... :		N/A
	6. Reinforced or double insulation: measured values specified values (mm) ..... :		N/A
	7. Distance through insulation:		N/A
	a) measured values specified values (mm) ..... :		N/A
	b) measured values specified values (mm) ..... :		N/A
	c) measured values specified values (mm) ..... :		N/A
BB.26.102	Values of IEC 61558-2-16 applicable for frequency up to 3 MHz (EN 61558-2-16:09)	Measured: 67kHz	P
	For frequency above 3 MHz clause 7 of IEC 60664-4 is applicable (high frequency testing)		N/A
BB.26.103	Clearance (EN 61558-2-16:09)		P
	a.) Clearance for frequency $\geq$ 30 kHz according figure 101 two determinations are necessary:		P
	– determination based on peak working voltage according Table 104 :		P
	Peak working voltage	420V peak max.	P
	Basic insulation: required / measured		N/A
	Double or reinforced insulation: required / measured value	Input to output: 0.12mm / 5.1mm min.	P
	– and alternative if applicable for approximately homogeneous field according to Table 102		N/A
	Peak working voltage		N/A
	Basic insulation: required / measured		N/A
	Double or reinforced insulation: required / measured value		N/A
	– determination based on measured r.m.s. working voltage according Tables 13, C1 and D1 (see clause 26.101)	Required (DI/RI): 7.55mm (Altitude 5000m is considered)	P

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Clause	Requirement + Test	Result - Remark	Verdict

	The minimum clearance is the greater of the two values.	7.55mm is greater	P
	b.) Clearance for frequency ≤ 30 kHz according figure 101 two determinations are necessary:		N/A
	– determination based on peak working voltage with recurring peak voltages according Table 103 :		N/A
	– determination based on measured r.m.s. working voltage according Tables 13, C1 and D1 (see clause 26.101)		N/A
	The minimum clearance is the greater of the two values.		N/A
BB.26.104	The working voltages of Table 102, 103 and 104 are peak voltages including µsec peaks EN 61558-2-16:09)		P
	The working voltage according to Table 13 of part 1 are r.m.s. voltages		P
BB.26.105	Creepage distances		P
	Two determinations of creepage distances are necessary (see Figure 102)		P
	– determination based on measured peak working voltage according Tables 105 to 110		P
	Peak working voltage	420V peak max.	P
	Pollution degree	2	P
	Basic or supplementary insulation: required / measured		N/A
	Double or reinforced insulation: required / measured value	Input to output: 0.29mm / 5.52mm min.	P
	– determination based on measured r.m.s. working voltage according Tables 13, C1 and D1 (see clause 26.101)	Required (DI/RI): 7.55mm	P
	If the values based on table 105 to 110 are lower than the relevant values in Tables 13, C.1 or D.1, the higher values shall be applicable	7.55mm is greater	P
BB.26.106	Distance through insulation (EN 61558-2-16:09)		N/A
	Instead of partial discharge with high frequency voltage the test of the distance and the calculation of the electric field is applicable under the following conditions:		N/A
	– the max. frequency is < 10 MHz		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	– the field strength approximately comply with Figure 103		N/A
	– no voids or gaps are present in between the solid insulation		N/A
	For thick layers d1 $\geq$ 0,75 the peak value of the field strength is $\leq$ 2 kV/mm		N/A
	For thin layers d2 $\leq$ 30 µm the peak value of the field strength is $\leq$ 10 kV/mm		N/A
	For d1 > d > d2 equation (1) is used for calculation the field strength		N/A
BB.26.107 (A1)	For transformers with FIW wires the following test is required		N/A
	• 10 cycles are required		N/A
	• 68 h test at max heating temperature + 10°C or test at max. allowed winding temperature based on the insulation class (required in table 1) + 10°C		N/A
	• 1 h at 25° C		N/A
	• 2 h at 0° C		N/A
	• 1 h at 25° C – (next cycle start again with 68 h max winding temp + 10)		N/A
	• during the 10 cycles test 2 x working voltage is connected between PRI and SEC		N/A
	• after 10 cycle test 2 transformers are subjected to the 17.2 test for 48 h and direct after the 48 h the dielectric strength test of 18.3 (100 % test voltage) is done		N/A
	• after the 10 cycle test the third sample is tested at the end of the last cycle in the hot position with the dielectric strength test of 18.3 (100 % test voltage)		N/A
	• the partial discharge test according to 18.101 is done after the cycling test and after the high voltage test, if the **peak** working voltage is >750 V		N/A

BB.27	**RESISTANCE TO HEAT, FIRE AND TRACKING**	N/A

BB.E	**ANNEX E , GLOW WIRE TEST**	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The test is required according to IEC 60695-2-10 and IEC 60695-2-11 with the following additions:		N/A
BB.E.1	Clause 6, ”Severities” of IEC 6095-2-11, apply with the temperature stated in 27.3 of IEC 61558-1		N/A
BB.E2	Clause 8, ”Conditioning”, of IEC 60695-2-11 apply, preconditioning is required		N/A
BB.E3	Clause 10, ”Test Procedure”, of IEC 60695-2-11apply, The tip of the glow wire is applied to the flat side of the surface.		N/A
BB.F	**ANNEX F, REQUIREMENTS FOR MANUALLY OPERATED SWITCHES WHICH ARE PARTS OF THE TRANSFORMER**		N/A
BB.H	**ANNEX H, ELECTRONIC CIRCUITS** (IEC 61558-1)		N/A
BB.K 61558-2-16/A1	**ANNEX K, INSULATED WINDING WIRES FOR USE AS MULTIPLE LAYER INSULATION**		N/A
BB.K.1	Wire construction:		N/A
	• insulated winding wire for basic or supplementary insulation (see 19.12.3)		N/A
	• insulated winding wire for reinforced insulation (see 19.12.3)		N/A
	• splid circular winding wires and stranded winding wires with 0,05 to 5 mm diameter		N/A
	• spirally wrapped insulation - overlapping		N/A
BB.K.2	Type tests		N/A
BB.K.2.1	General Tests between ambient temperature between 15° C and 35° C and at an humidity between 45% and 75 %		N/A
BB K.2.2	Electric strength test		N/A
BB K.2.2.1	Solid circular winding wires and stranded winding wires		N/A
	Test samples prepared according to clause 4.4.1 of IEC 60851-5:2008 (twisted pair)		N/A
	Dielectric strength test: 6 kV for reinforced insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Dielectric strength test: 3 kV for basic or supplementary insulation		N/A
BB K.2.2.2	Square or rectangular wires .		N/A
	Test samples prepared according to clause 4.7.1 of IEC 60851-5:2008		N/A
	Dielectric strength test: 5,5 kV for reinforced insulation		N/A
	Dielectric strength test: 2,75 kV for basic or supplementary insulation		N/A
BB K.2.3	Flexibility and adherence		N/A
	Claus 5.1 in Test 8 of IEC 60851-3:2009 shall be used		N/A
	Test samples prepared according to clause 5.1.1.4 of IEC 60851-3:2009		N/A
	Dielectric strength test: 5,5 kV for reinforced insulation		N/A
	Dielectric strength test: 2,75 kV for basic or supplementary insulation		N/A
	Mandrel diameter according table K.1		N/A
	The tension to the wire during winding on mandrel is 118 N/mm² (118 MPa)		N/A
BB.K.2.4	Heat shock		N/A
	Test samples prepared according to 3.1.1 (in Test 9) of IEC 60851-6:1996		N/A
	• high voltage test immediately after this test		N/A
	• Dielectric strength test: 5,5 kV for reinforced insulation		N/A
	• Dielectric strength test: 2,75 kV for basic or supplementary insulation		N/A
BB.K.2.5	Retention of dielectric strength after bending (test as specified under test 13 of 4.6.1 c) of IEC 60 851-5)		N/A
	• high voltage test immediately after this test		N/A
	• Dielectric strength test: 5,5 kV for reinforced insulation		
	• Dielectric strength test: 2,75 kV for basic or supplementary insulation		
BB.K.3	Testing during manufacturing		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

BB.K.3.1	General Tests as subjected in K.3.2 and K.3.3		N/A
BB K.3.2	Routine test		N/A
	• Dielectric strength test: 4,2 kV for reinforced insulation		N/A
	• Dielectric strength test: 2,1 kV for basic or supplementary insulation		N/A
BB K.3.3	Sampling test		N/A
BB K.3.3.1	Solid circular winding wires and stranded winding wires		N/A
	Test with a twisted pair, prepared according clause 4.4.1 of IEC 60851-5:2008		N/A
	• Dielectric strength test: 6 kV for reinforced insulation		N/A
	• Dielectric strength test: 3 kV for basic or supplementary insulation		N/A
BB K.3.3.2	Square rectangular wire		N/A
	Samples prepared according to clause 4.7.1 of IEC 60851-5:2008		N/A
	• Dielectric strength test: 5,5 kV for reinforced insulation		N/A
	• Dielectric strength test: 3 kV for basic or supplementary insulation		N/A

BB.U	**ANNEX U – INFORMATIVE – OPTIONAL TW – MARKING FOR TRANSFORMERS**	N/A
V	**ANNEX V, SYMBOLS TO BE USED FOR THERMAL CUT-OUTS**	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

BB.26.2 TEST A	**TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES THROUGH INSULATION**					**N/A**
	Test with three special prepared specimens with uninsulated wires, without potting or impregnation					
cycles with 2 x working voltage between pri / sec	68 h at the temperature acc. Cl. 14 (min. 85 °C)	1 hour 25 °C	2 hour 0 °C	1 hour 25 °C		

BB.26.2 TEST B	**TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES THROUGH INSULATION**					N/A
	Test with three specially prepared specimens with potted – P1 values are required					
cycles with 2 x working voltage between pri / sec	68 h at the temperature acc. Cl. 14 (min. 85 °C)	1 hour 25 °C	2 hour 0 °C	1 hour 25 °C		

BB.26.2 TEST C	**TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES THROUGH INSULATION**					N/A
	Test with three specially prepared specimens with potting (only dti is required)					
cycles with 2 x working voltage between pri / sec	68 h at the temperature acc. Cl. 14 (min. 85 °C)	1 hour 25 °C	2 hour 0 °C	1 hour 25 °C		

BB.26.107 61558-2-16/A1	**TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES THROUGH INSULATION**					N/A
	Test for transformers, use FIW-wire					
cycles with 2 x working voltage between pri / sec	68 h at the temperature acc. Cl. 14 (min. 85 °C)	1 hour 25 °C	2 hour 0 °C	1 hour 25 °C		

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Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: Dielectric Strength		P
Test voltage applied between:		**Test potential applied (V)**	**Breakdown / flashover (Yes/No)**
Primary and secondary windings		3976	No
Supplementary information:			

BB 18.3	TABLE: insulation resistance measurements		P
Insulation resistance R between:		**R (MΩ)**	**Required R (MΩ)**
Between parts separated by double or reinforced insulation		199	5
Supplementary information:			

BB 26	TABLE: Clearance And Creepage Distance Measurements					P
clearance cl and creepage distance dcr at/of:	**Up (V)**	**U r.m.s. (V)**	**Required cl (mm)**	**cl (mm)**	**required dcr (mm)**	**dcr (mm)**
Between primary and secondary windings	420	276	7.55*	7.8 min.	7.55*	7.8 min.
Supplementary information: * Altitude 5000m is considered, the correction factor of 1.48 is multiplied based on above values.						

BB 26	TABLE: Distance Through Insulation Measurements			P
Distance through insulation di at/of:	**U r.m.s. (V)**	**Test voltage (V)**	**Required di (mm)**	**di (mm)**
Between primary and secondary windings	276	N/A	Triple insulation wire plus basic insulation	Triple-layer insulated winding wire plus 3 layers insulating tape having total thickness of 0.075mm
Supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict

Appendix 3: National difference for Australia and New Zealand

ATTACHMENT TO TEST REPORT IEC 60335-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Household and similar electrical appliances – Safety – Part 1: GENERAL REQUIREMENTS)	
Differences according to.....:	AS/NZS 60335.1:2011 + A1:2012 + A2:2014 + A3:2015 + A4:2017
Attachment Form No.....:	IEC60335_1X
Attachment Originator .....:	NZ Electrotechnical Committee/Standards New Zealand
Master Attachment.....:	Date 2016-10
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	National Differences		-
5	**GENERAL CONDITIONS FOR THE TESTS**		**P**
5.8.1	Test at a.c. 50Hz for a.c. only appliance		P
	Test at a.c. 50Hz or d.c., whichever is the more unfavourable supply for a.c. and d.c. appliance		P
6	**CLASSIFICATION**		P
6.1	Protection against electric shock: Class I,II,III.....:	Class II	P
7	**MARKING AND INSTRUCTIONS**		P
7.1	After the first paragraph of the requirement insert the following variation:		P
	Appliances intended for connection to the supply mains, other than class III appliances, shall be marked with:		P
	- a rated voltage of at least: 230 V for single-phase appliances; 400 V for poly-phase appliances; or		N/A
	- a rated voltage range that includes: 230 V for single-phase appliances; 400 V for poly-phase appliances.	100-240VAC	P
	For appliance outlets and socket outlets accessible to the user that are incorporated in appliances connected to the supply mains; and	No appliance outlets and socket outlets	N/A
	- that operate at rated voltage;		N/A
	the appliances shall be marked with their maximum outlet load in Watts.		N/A
7.13	Replace the requirement with the following variation:		P
	Instructions and other text required by this standard are written in English.		P
7.15	After the last paragraph of the requirement insert the following variation:		N/A
	The marking of the maximum outlet load shall be close to the appliance outlet or socket outlet.	No appliance outlet or socket outlet	N/A
10	**POWER INPUT AND CURRENT**		N/A
10.1	After the last paragraph of the test specification insert the following variation:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Appliance outlets and socket outlets accessible to the user that are incorporated in appliances connected to the supply mains; and	No appliance outlet or socket outlet	N/A
	that operate at rated voltage;		N/A
	are not loaded during the test, however their contribution to the power input is considered to be the marked outlet load per appliance outlet or socket-outlet.		N/A
11	**HEATING**		N/A
11.7	After the first paragraph of the test specification insert the following variation:		N/A
	Appliance outlets and socket outlets accessible to the user are loaded with a resistive load that gives the marked outlet load in watts.	No appliance outlet or socket outlet	N/A
11.8	After the first paragraph of the test specification insert the following variation:		P
	The pins of plug connectors inserted into appliance outlets accessible to the user and plugs inserted into socket outlets accessible to the user shall have a temperature rise not exceeding 45 K.	7K Max.	P
19	**ABNORMAL OPERATION**		P
19.13	After the seventh paragraph of the test specification insert the following variation:		P
	The no-load output voltage of an SELV outlet or connector shall not increase by more than 10% of its no-load output voltage in normal use.		P
	The no-load output voltage of a USB outlet or connector shall not increase by more than 3 V or 10% of its no-load output voltage in normal use, whichever is higher.		P
22	**CONSTRUCTION**		N/A
22.2	After the first paragraph of the requirement insert the following variation:		N/A
	For stationary appliances permanently connected to the fixed wiring, compliance with this requirement is considered to be met if the instruction concerning disconnection incorporated in the fixed wiring is in accordance with AS/NZS 3000.	Portable appliance	N/A
22.3	Replace the first paragraph of the test specification with the following variation:		P
	Compliance is checked by inserting the pins of the appliance into a socket-outlet capable of accepting a plug complying with Figure 2.1(a) of AS/NZS 3112.		P
	The socket-outlet has a horizontal pivot at a distance of 8 mm behind the engagement face of the socket-outlet and in the plane of the lower intersection of the centre lines of the contact apertures.		P

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Clause	Requirement + Test	Result - Remark	Verdict

	Replace the third, fourth and fifth paragraphs of the test specification with the following variation:		P
	A new sample of the appliance shall be subjected to and shall comply with the tests in 2.13.9.2 of AS/NZS 3112.		P
22.33	Delete the last sentence of the first paragraph of the requirement and introduce it as a new first paragraph of the requirement.		N/A
22.201	Appliances having integral pins for insertion into socket outlets shall comply with the appropriate requirements of AS/NZS 3112.		P
	Compliance is checked as specified in Annex J of AS/NZS 3112		P
22.202	Appliance outlets and socket outlets accessible to the user that are incorporated in appliances connected to the supply mains; and		N/A
	that operate at rated voltage		N/A
	shall be single-phase and have a current rating not exceeding 16 A.		N/A
	The socket outlets shall comply with AS/NZS 3112;		N/A
	accept a 3-pin, flat-pin plug as described in figure 2.1(a1) of AS/NZS 3112.		N/A
	The appliance outlets and socket outlets shall be protected by one of the following protection devices that has a current rating not exceeding the current rating of the appliance outlet or socket-outlet:		N/A
	- a circuit breaker for equipment complying with IEC 60934;		N/A
	- a manually resettable trip-free or cycling trip-free overcurrent protection device;		N/A
	- a non-user replaceable fuse-link.		N/A
	The protection device shall be placed behind a non-detachable cover. The actuating member of the circuit breaker and the manually resettable protection device may be accessible.		N/A
	The current rating of the appliance outlets and socket outlets is obtained from the marked outlet load in watts divided by the rated voltage.		N/A
	Compliance is checked by inspection and for a manually resettable trip-free or cycling trip-free overcurrent protection device by the following tests:		N/A
	The device shall be operated at rated voltage at 136% of its current rating, in an ambient temperature of 23°C ± 2°C in a draught-free environment.		N/A
	The device shall operate to interrupt the current within 2 h.		N/A

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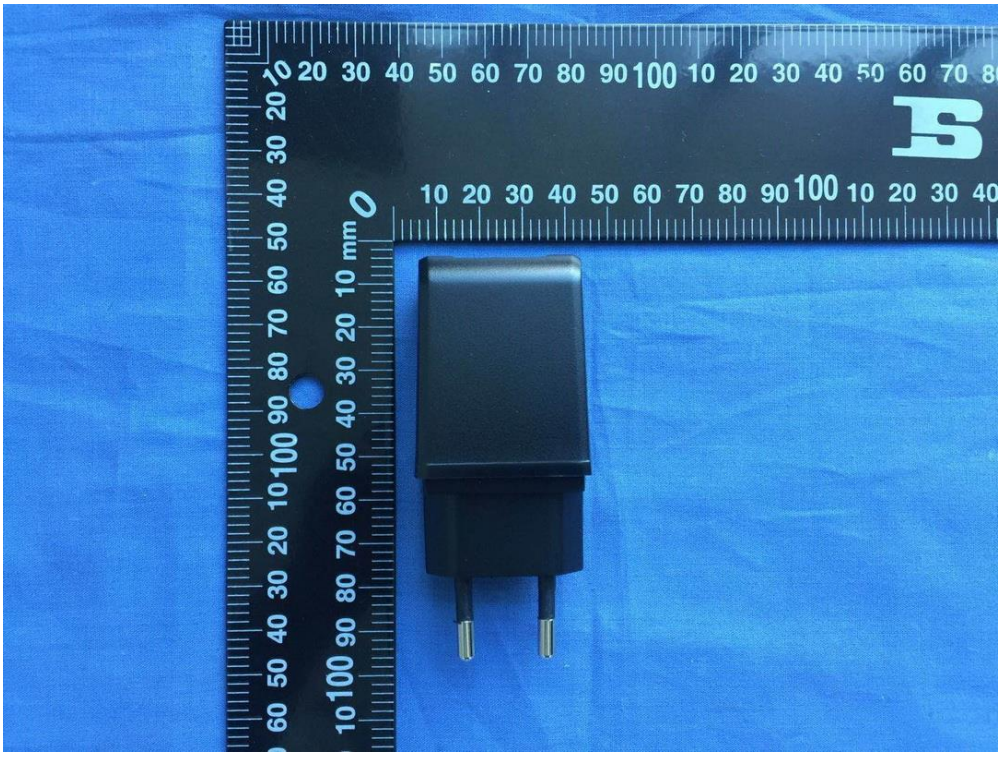
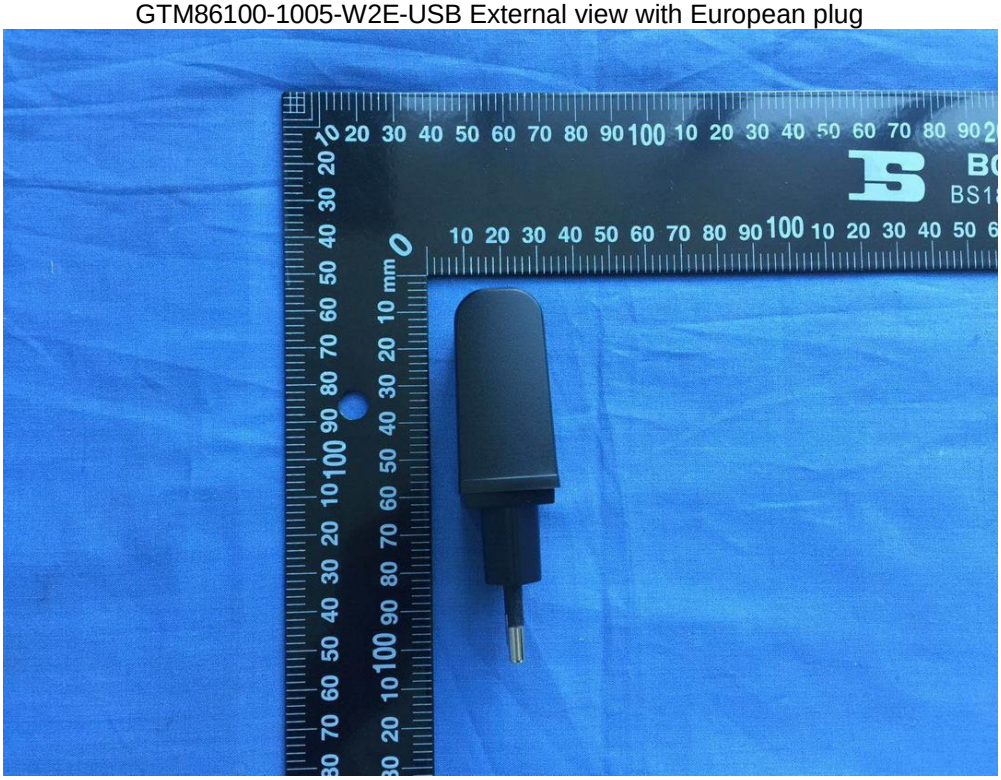
Clause	Requirement + Test	Result - Remark	Verdict
	The device shall be operated at rated voltage at 600% of its current rating in an ambient temperature of 23°C ± 2°C in a draught-free environment		N/A
	The device shall operate to interrupt the current within 5 s.		N/A
	Immediately following the overcurrent tests, the test of clause 16.3 shall be applied, and the device shall comply with the specified requirements of the test.		N/A
	The device shall comply with the ball pressure test of 30.1 carried out at 160 °C.		N/A
	The device shall comply with the glow-wire test of 30.2.3.1 with a test severity of 960 °C.		N/A
25	**SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS**		
25.1	Supply cords for single-phase portable appliances intended for direct connection to the supply mains, shall be fitted with an appropriate plug complying with AS/NZS 3112.	Direct plug-in type	N/A
	SPECIAL NATIONAL CONDITIONS		P
	Australia		P
5	**GENERAL CONDITIONS FOR THE TESTS**		P
5.201	For appliances, other than class III appliances, that are intended for connections to the supply mains and that are not marked with:		P
	- a rated voltage of at least 240 V for single-phase appliances and at least 415 V for three-phase appliances, or		N/A
	- a rated voltage range that includes 240 V for single-phase appliances and 415 V for three-phase appliances,	100-240VAC	P
	the rated voltage is equal to 240 V for single-phase appliances and 415 V for three phase appliances,	100-240VAC	P
	and the upper limit of the rated voltage range is equal to 240 V for single-phase appliances and 415V for three-phase appliances.	100-240VAC	P
	In addition, the rated current or rated power input is equal to the calculated value corresponding to 240 V for single-phase appliances and 415 V for three-phase appliances as appropriate		P
24	**COMPONENTS**		**N/A**
24.1.7	Telecommunication interface circuitry must comply with the Telecom Labeling Notice issued under the Telecommunications Act instead of IEC 62151		N/A

Appendix 4: Photos of the product

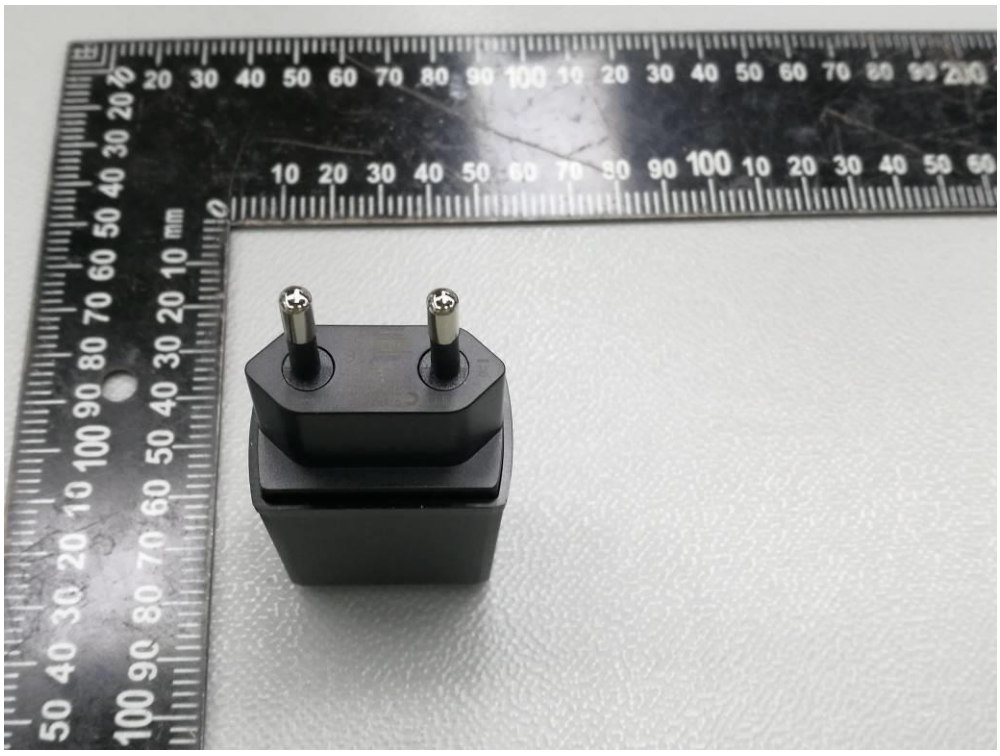
GTM86100-1005-W2E-USB External view with European plug



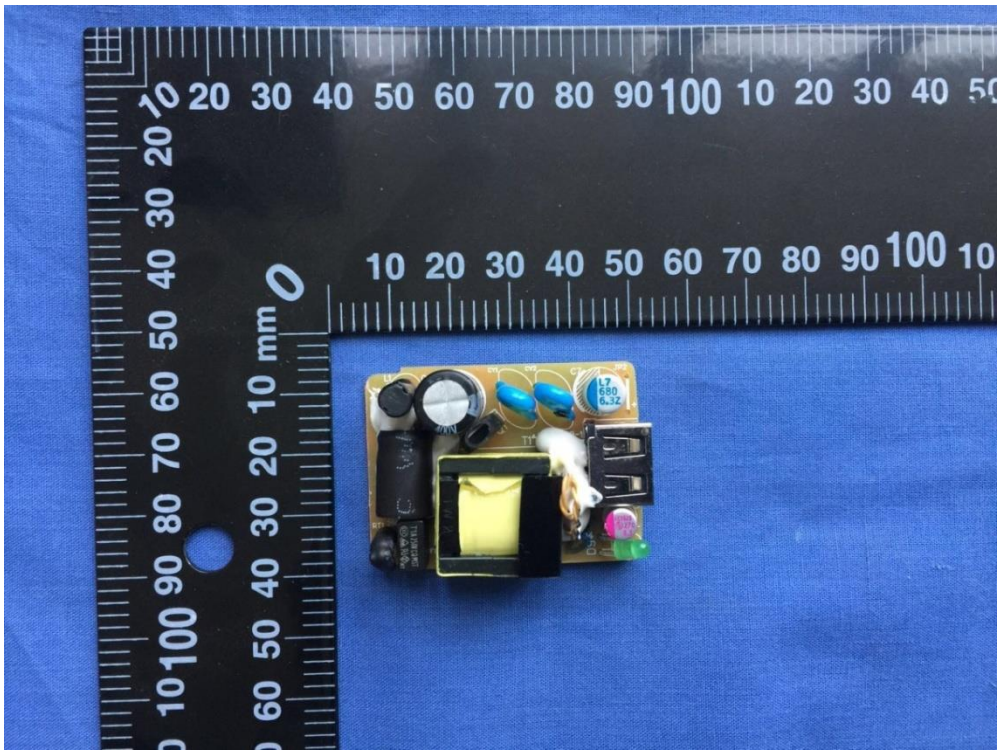
GTM86100-1005-W2E-USB External view with European plug



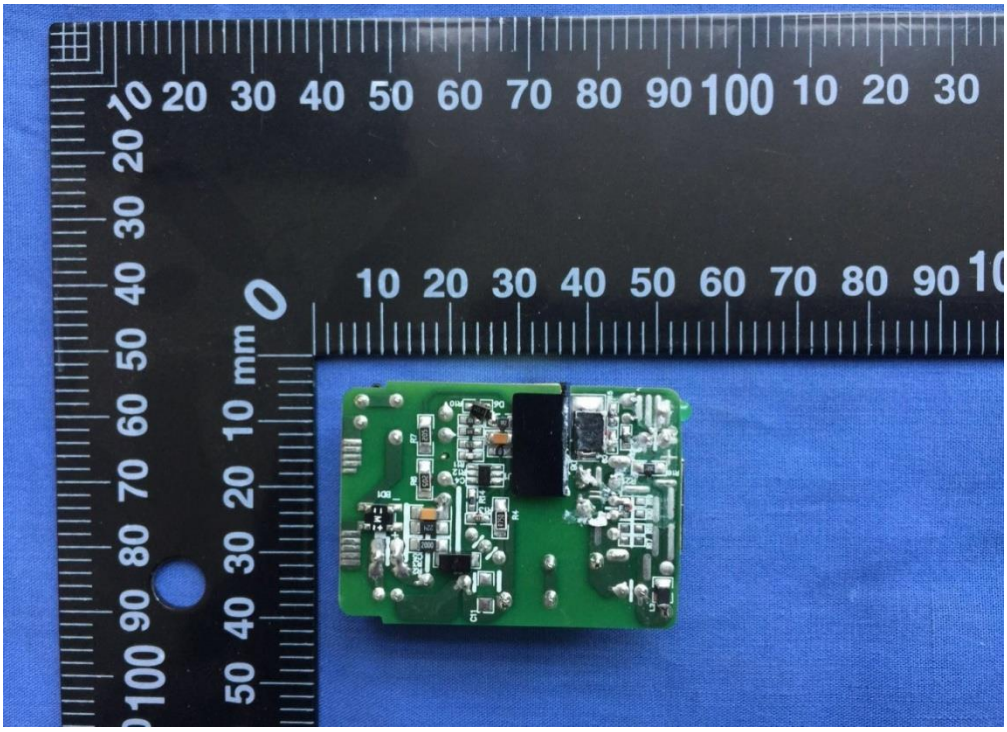
GTM86100-1005-W2E-USB External view with European plug



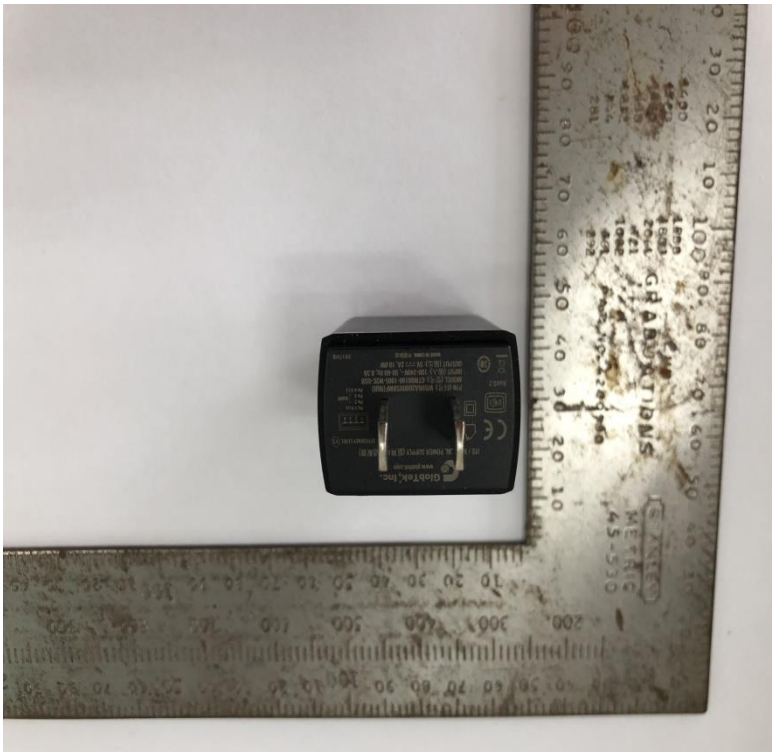
GTM86100-1005-W2E-USB Internal view – Component side view of PCB



GTM86100-1005-W2E-USB Internal view – Soldering side view of PCB

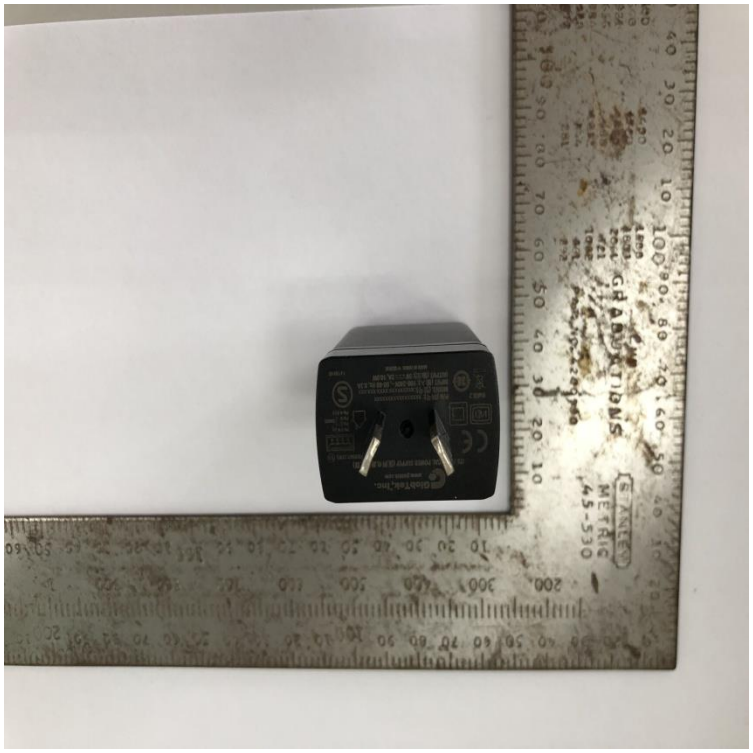


GTM86100-1005-W2C-USB External view with China plug

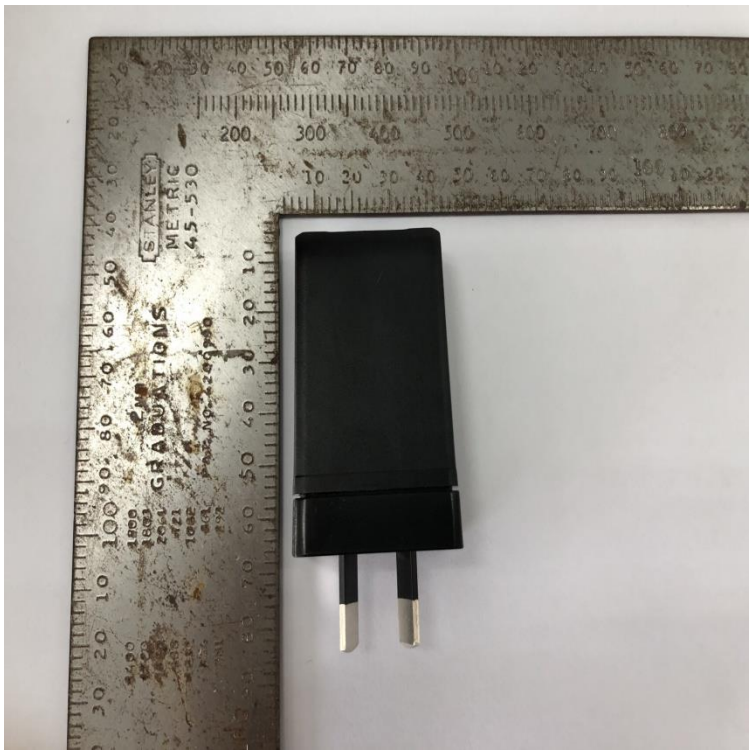


GTM86100-1005-W2C-USB External view with China plug

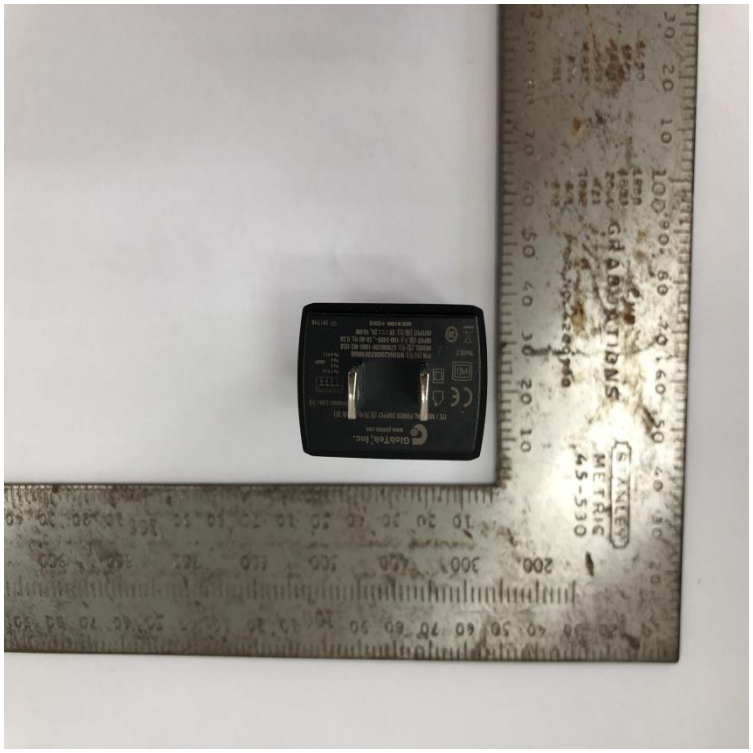
GTM86100-1005-W2A-USB External view with Australia plug



GTM86100-1005-W2A-USB External view with Australia plug

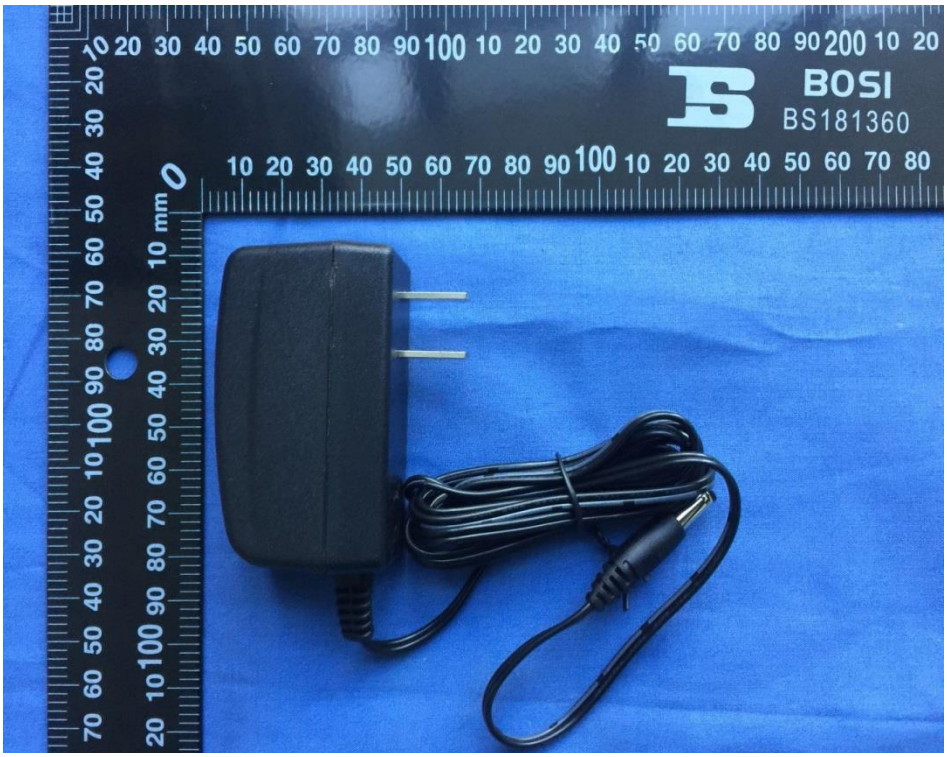


GTM86100-1005-W2-USB External view with American plug

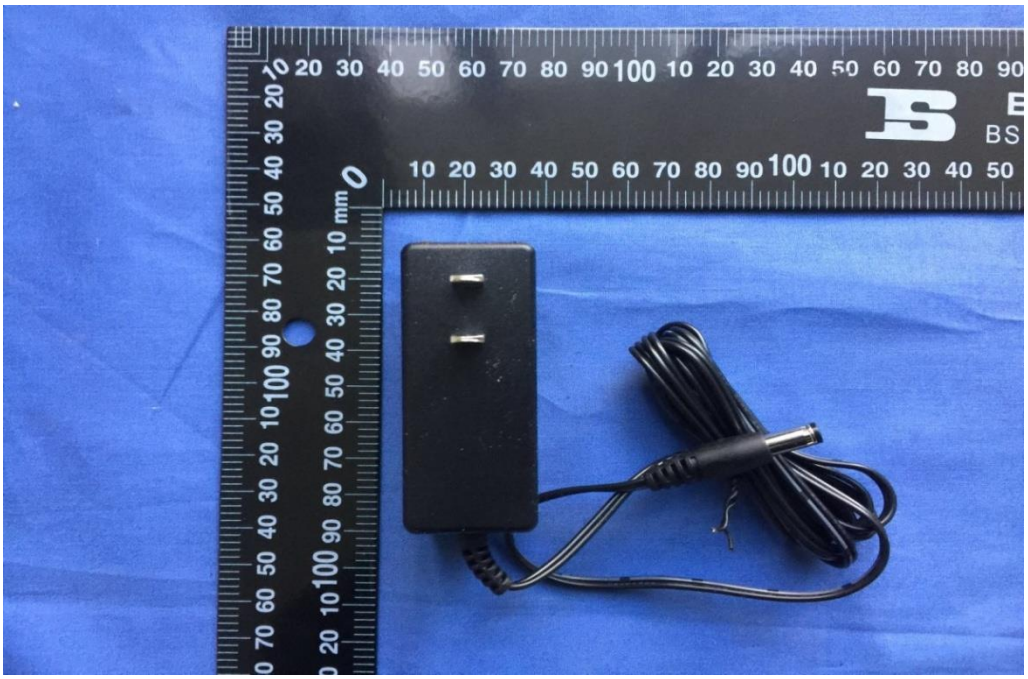


GTM86100-1005-W2-USB External view with American plug

GTM86100-1005-W2C External view with China plug

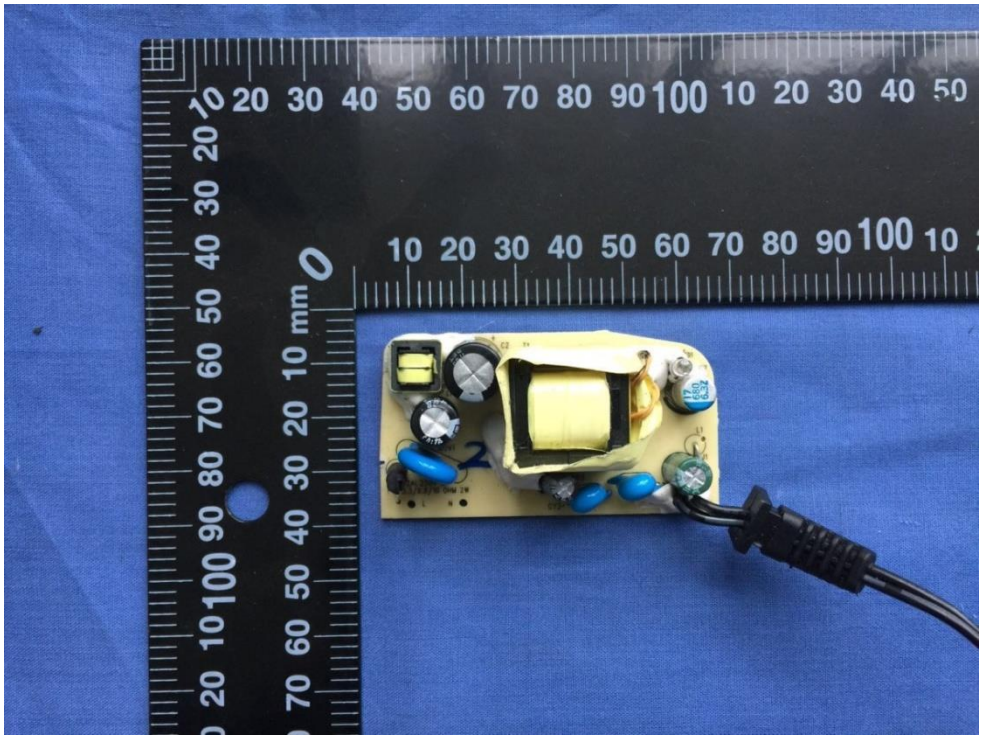


GTM86100-1005-W2C External view with China plug

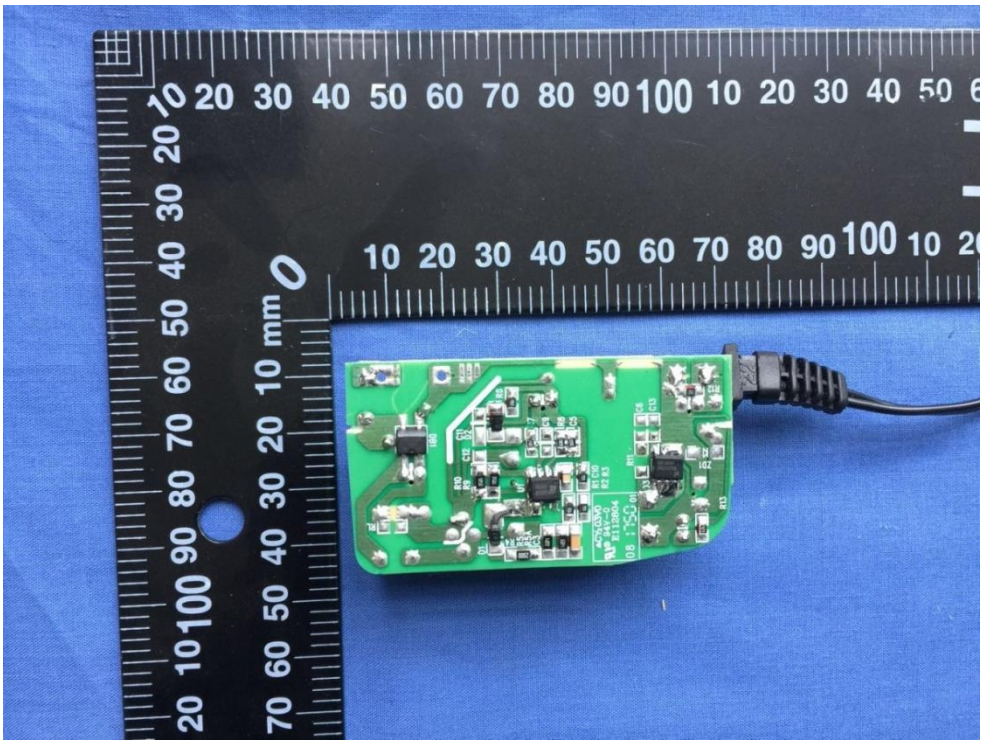


GTM86100-1005-W2C External view with China plug

GTM86100-1005-W2C Internal view – Component side view of PCB



GTM86100-1005-W2C Internal view – Soldering side view of PCB



GTM86100-1005-W2E External view with European plug

GTM86100-1005-W2E External view with European plug

GTM86100-1005-W2U External view with British plug

GTM86100-1005-W2U External view with British plug

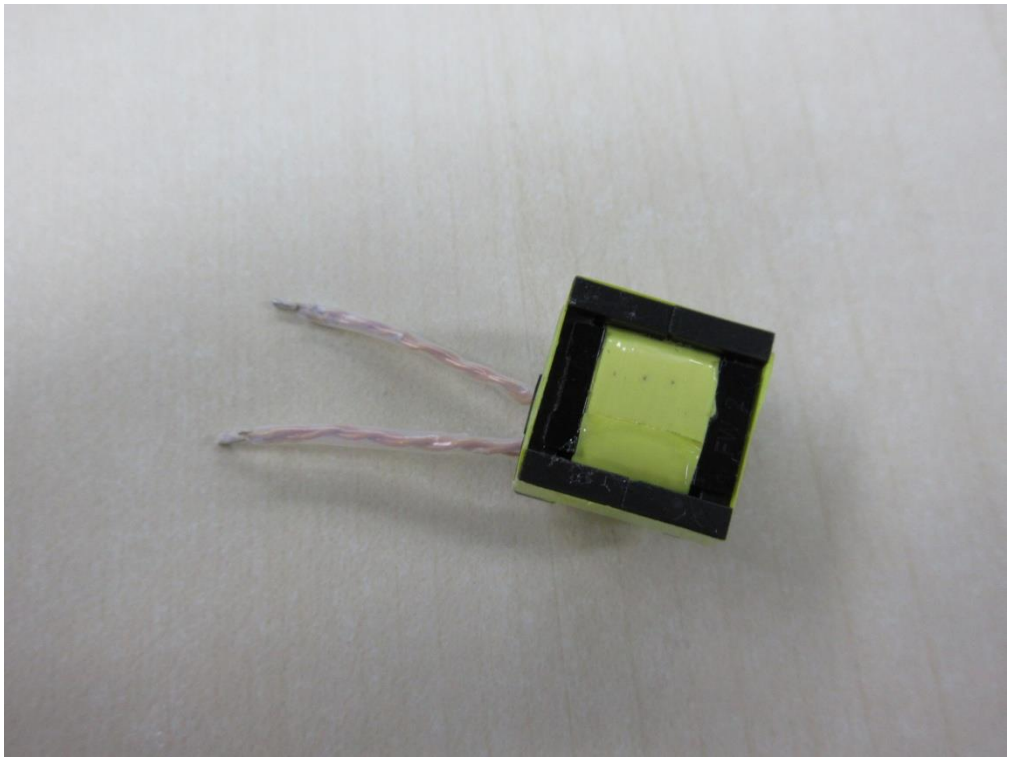
GTM86100-1005-W2A External view with Australia plug

GTM86100-1005-W2A External view with Australia plug

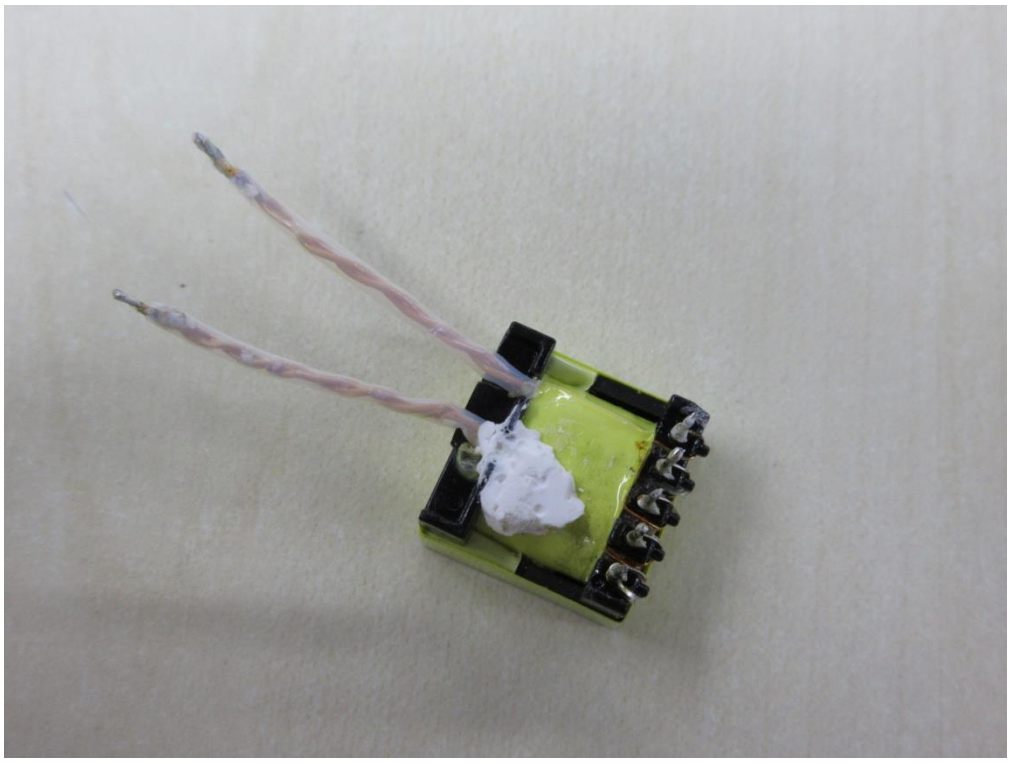
GTM86100-1005-W2 External view with American plug

GTM86100-1005-W2 External view with American plug

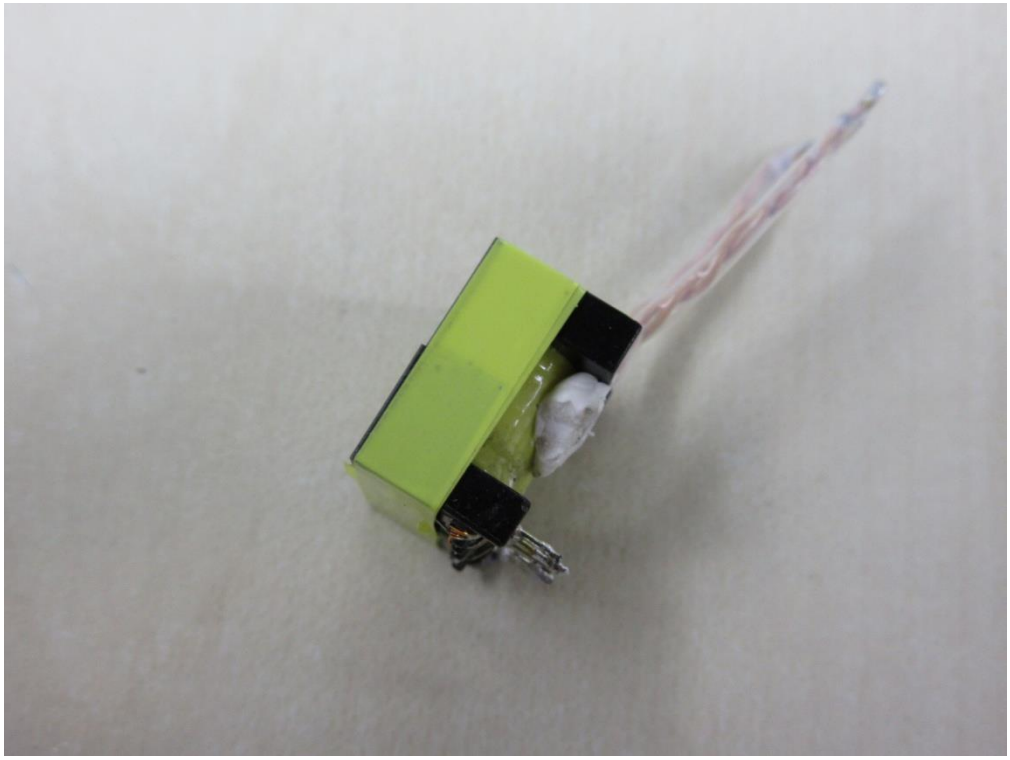
Transformer



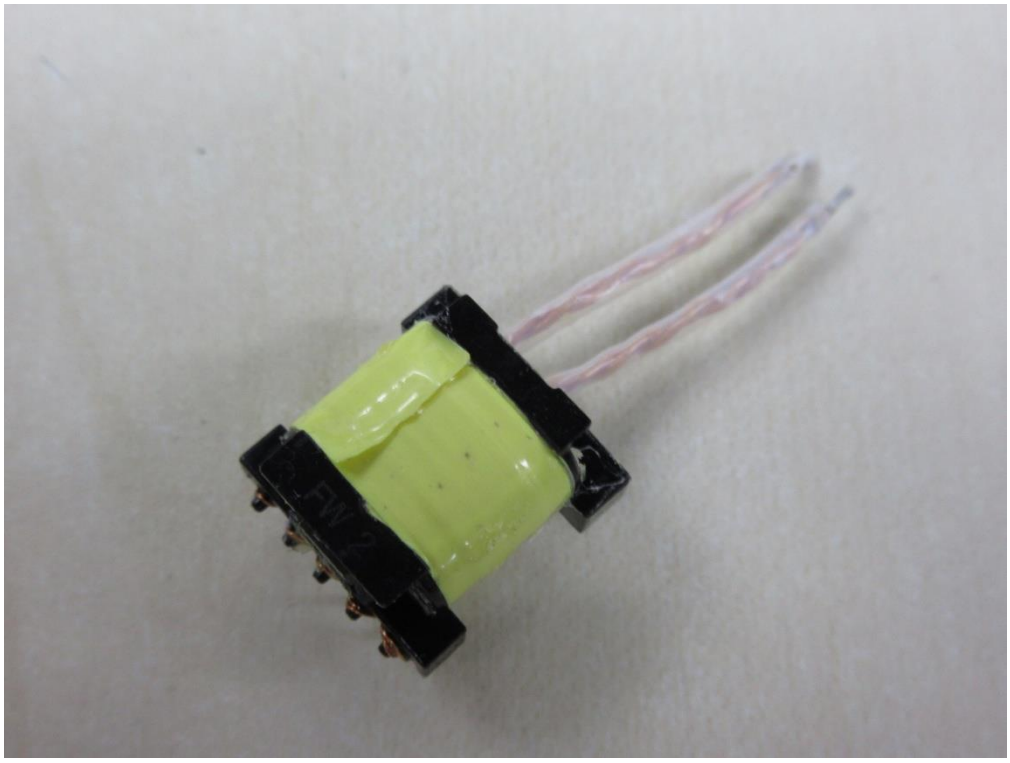
Transformer



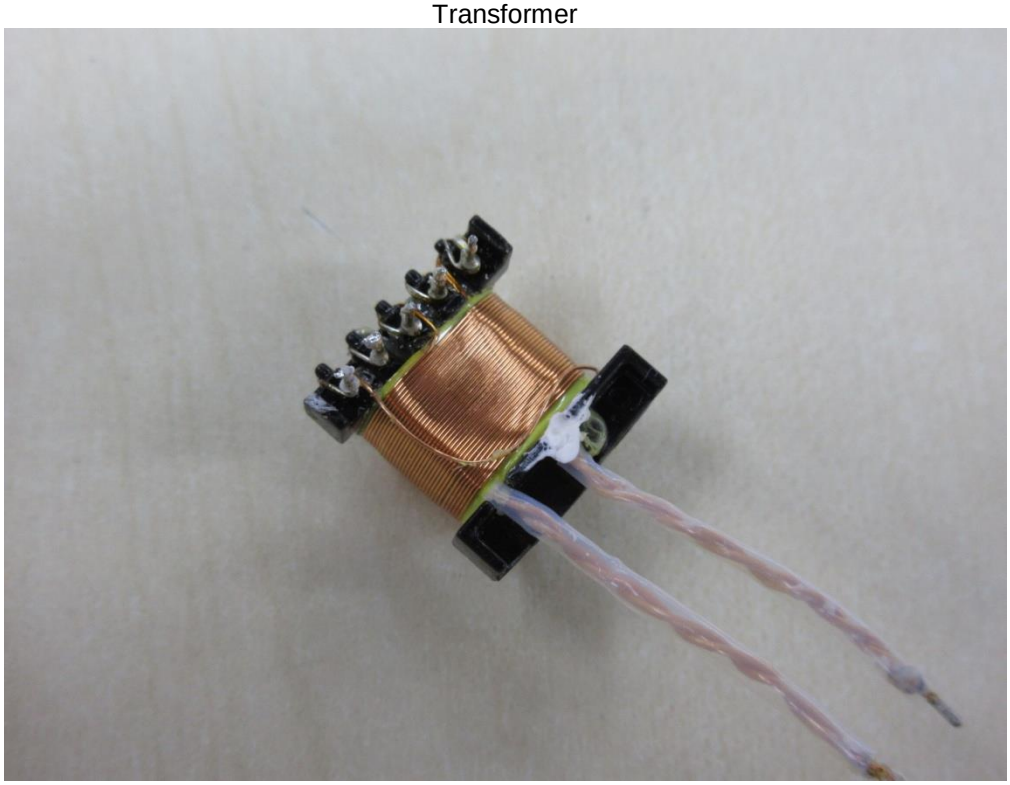
Transformer



Transformer



Transformer



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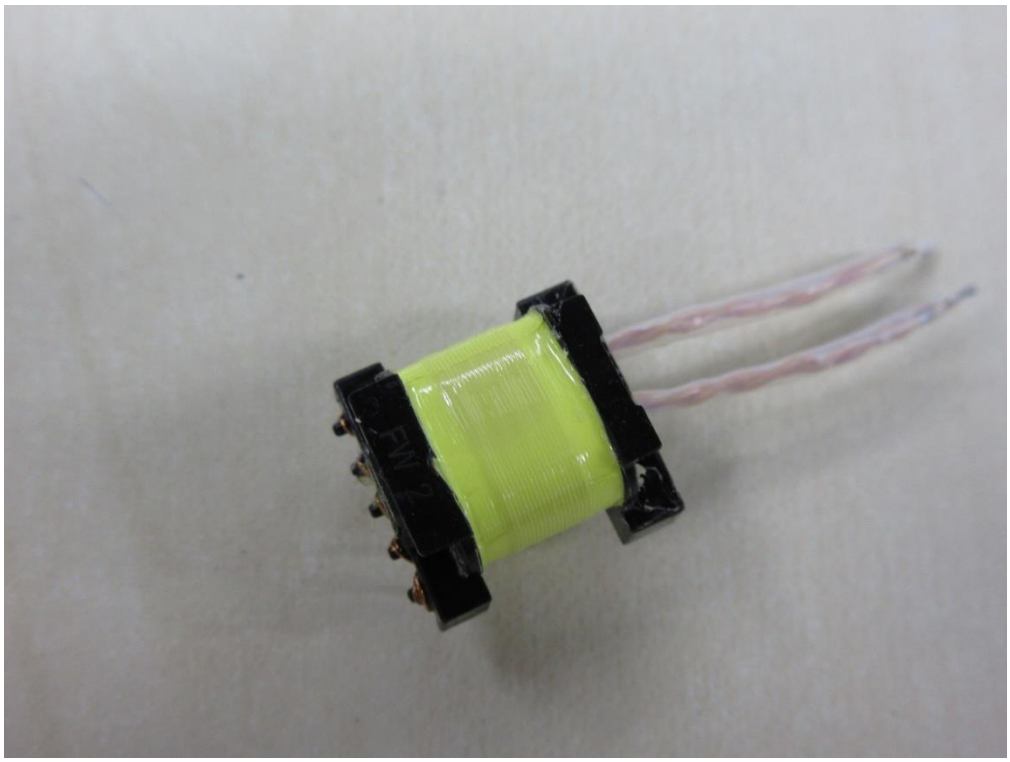

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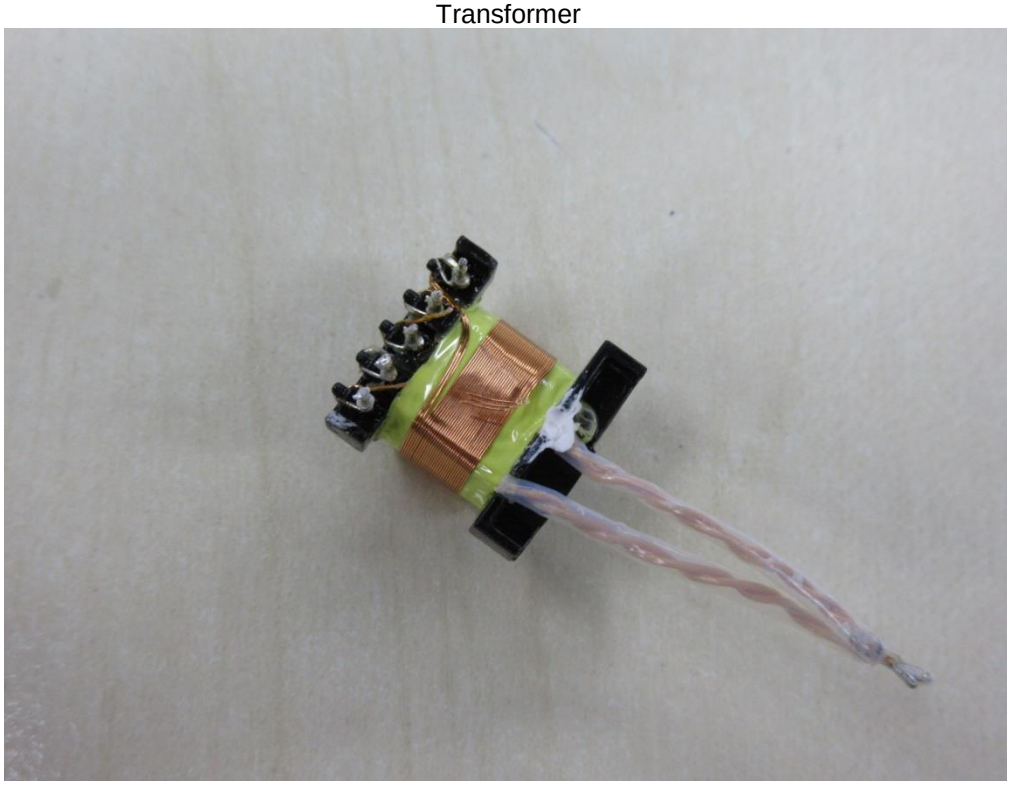

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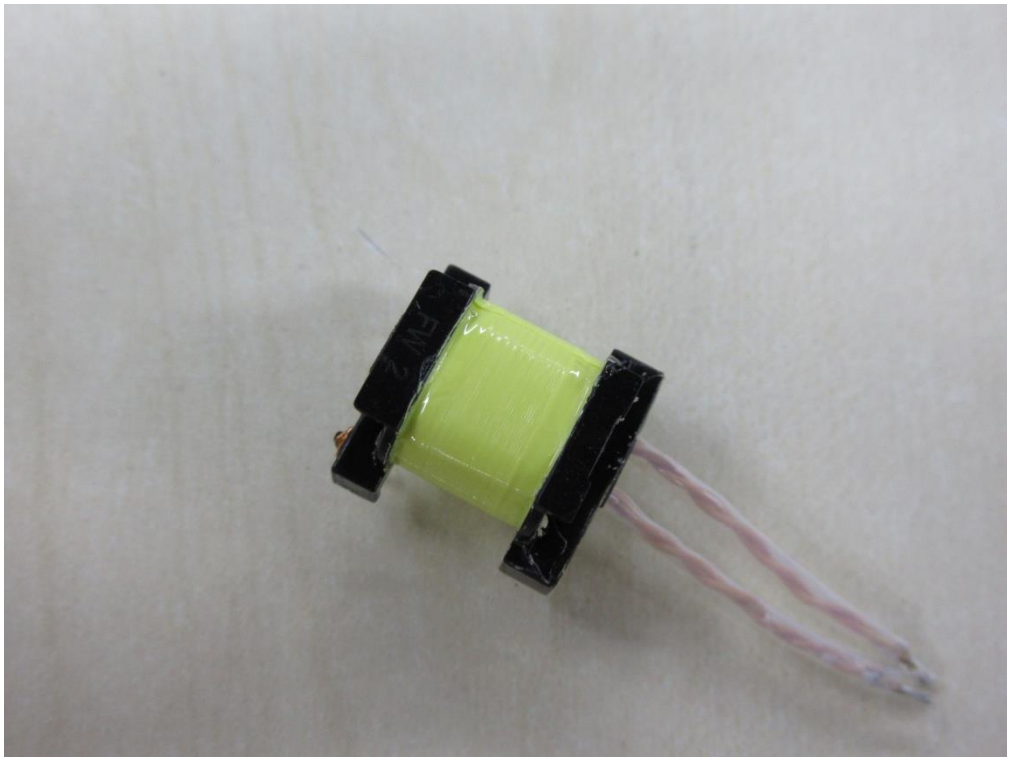

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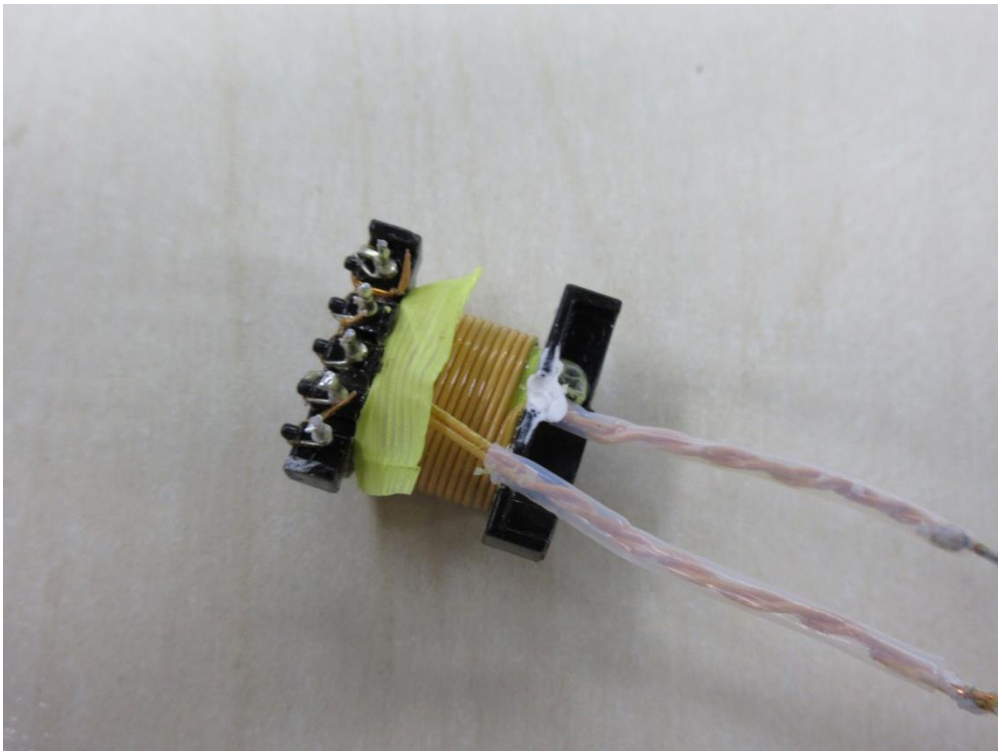

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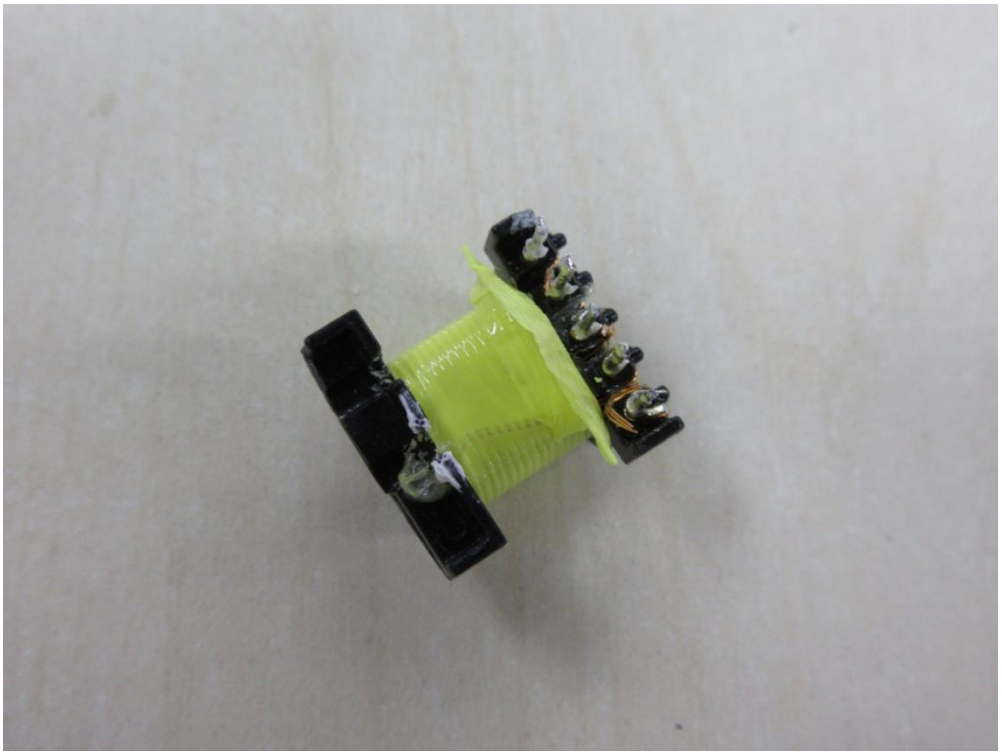
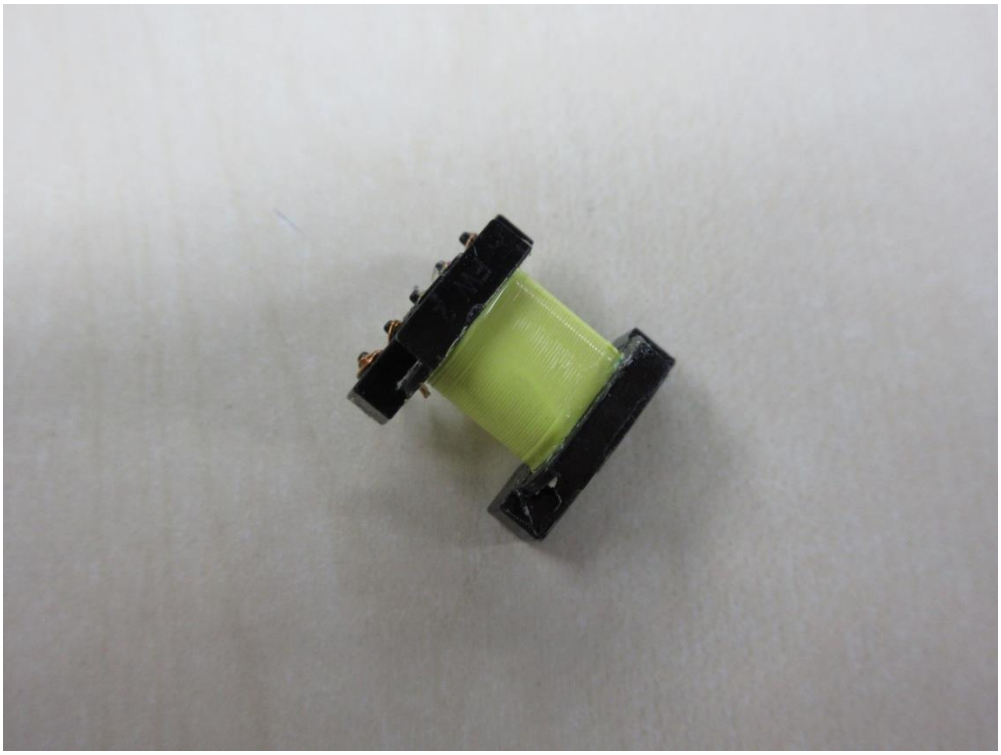


Transformer

Transformer



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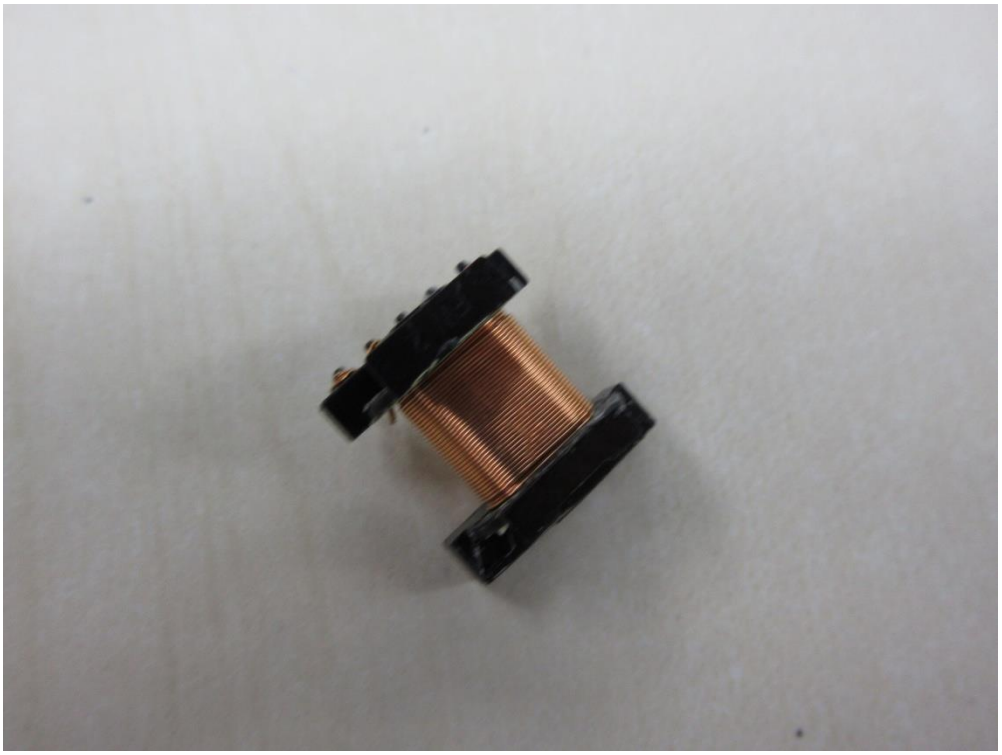


Transformer

Appendix No.5: Equipment combined with two-pole plug (Class II)

Supplementary tests on plug portion according to IEC 60884-1:2002 + A1:2006 and EN50075:1990

Clause	*Requirement + Test*	Verdict
1.	***Dimensions (Clause 7 of EN 50075)***	
	Plugs shall comply with standard size. (Standard sheet 1)	P
2.	***Protection Against Electric Shock (Clause 8 of EN 50075)***	
2.1	*Live parts of plugs with the exception of the bare metal parts of the pins, shall not be accessible. (Clause 8.1 of EN 50075)*	P
2.2	*It shall not be possible to make connection between a pin of a plug and a live socket contact of a socket-outlet while the other pin is an accessible. (Clause 8.2 of EN 50075)*	P
2.3	*External parts of plugs, with the exception of pins, shall be of insulating material. (Clause 8.3 of EN 50075)*	P
3.	***Construction (Clause 9 of EN 50075)***	
3.1	*The plug cannot be opened by hand or by using a general purpose tool. (Clause 9.1 of EN 50075)*	P
3.2	*Pins of plugs shall be solid and shall have adequate mechanical strength. (Clause 9.3 of EN 50075)*	P
3.3	*Pins of plugs shall be locked against rotation and adequately fixed into the body of the plug. (Clause 9.4 of EN 50075)*	P
3.4	*Plugs shall be provided with soldered, crimped or equally effective permanent connection. (Clause 9.5 of EN 50075)*	P
3.5	*Plug shall be shaped in such a way and made of such a material that they can easily be withdrawn by hand from a socket-outlet. (by gripping the power supply enclosure, Clause 9.6 of EN 50075)*	P
4.	***Resistance to Humidity (Clause 10 of EN 50075)***	N/A
	The integrated pins were tested together with the power supply. (See test report for power supply)	
5.	***Insulation Resistance and Electric Strength (Clause 11 of EN 50075)***	N/A
	(See test report for power supply)	
6.	***Mechanical Strength (Clause 13 of EN 50075)***	
	Plug shall have adequate mechanical strength to withstand the stresses imposed during use.	P

Clause	*Requirement + Test*	Verdict
6.1	The plugs are pressed between two flat surfaces with a force of 150N for 5min. 15min after removal of the force, the plug shall not show such deformation as would result in undue alteration of the dimensions which ensure safety. (Clause 13.1 of EN 50075)	P
6.2	The plug is tested in a tumbling barrel. (Clause 13.2 of EN 50075, fall number is shown in test report for power supply) After the test, the plug shall show no damage within the meaning of this standard, in particular: --- no part shall become detached or loosened. --- the pin shall not turn when a torque of 0.4Nm is applied. Note: A section of the pin is square constructed for preventing the rotation.	N/A
6.3	The pins is held in a suitable clamp in such a position that the straight part of a steel wire (D=1+-0.02mm, U-shaped) rests on the plug pin. The plug is caused to move backwards and forwards, so that the wire rubs along the pin. The number of the movements is 20 000, and the rate of the operation is 25 movements per min. (Clause 13.3 of EN 50075)	P
	After the test, the pin show no damage which may effect safety or impair the further use of the plug, in particular, the insulating sleeve shall not have punctured or rucked up.	P
6.4	A pull force of 40N is applied for 60s on each pin in turn in the direction of the longitudinal axis of the pin. The pull is applied 60min after the plug has been placed in a heating cabinet of 70°C. After the plug cooling down to ambient temperature, any pin shall not have displaced in the body of the plug more than 1mm. (Clause 13.4 of EN 50075)	P
7.	**Resistance to Heat and to Ageing (Clause 14 of EN 50075)**	P
8.	**Current-carrying Parts and Connections (Clause 15 of EN 50075)**	
8.1	Connection, electrical and mechanical, shall withstand the mechanical stresses occurring in normal use, and electrical connections shall be designed that contact pressure is not transmitted through insulating material. (Clause 15.1 & 15.2 of EN 50075)	P
8.2	Current-carrying parts shall be of copper or an alloy containing at least 58% of copper. (Clause 15.3 of EN 50075)	P
9.	**Creepage Distance, Clearances, and Distances Through Insulation (Clause 16 of EN 50075)**	P
10.	**Resistance of Insulating Material to Abnormal Heat and to fire (Clause 17 of EN 50075)**	P

Appendix No.6: Dimension Checking for Two-pin plug according to EN50075

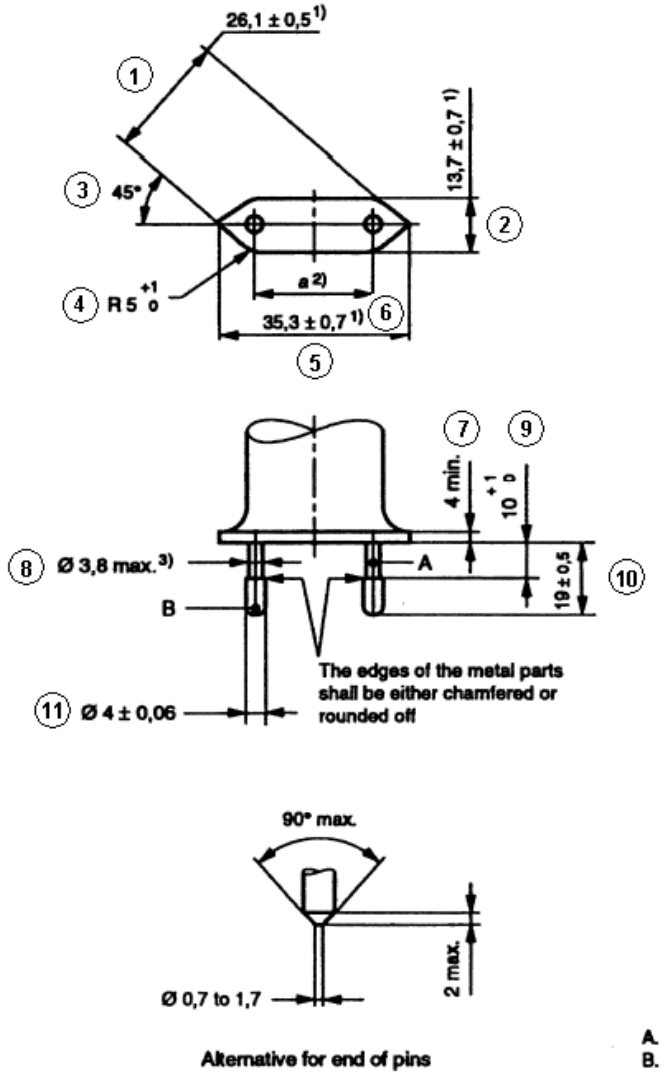
	DIMENSIONS Checked by means of measurement according to EN50075 Standard sheet 1 (see appendix no.7)	P

For EU plug

Position	**Requirement (mm)**	**Measured (mm)**	*Verdict*
1	25,6 – 26,6	26.22 - 26.35	P
2	13 – 14,4	13.63 - 14.02	P
3	45°	45°	P
4	R5 – 6	5.23	P
5	34,6 – 36	34.72 - 35.31	P
6	18-19,2 in the plane of the engagement face	18.61	P
	17-18 at the ends of the pins	17.78	P
7	4min	-	N/A
8	ϕ3,8max	ϕ3.71	P
9	10-11	10.11	P
10	18,5 – 19,5	18.99	P
11	ϕ3,94 - ϕ4,06	ϕ3.97	P
	Dimensions of position 1, 2 and 3 shall not be exceeded within a distance of 18mm from the engagement face of the plug	18.15	P
	The edges of the metal parts shall be either chamfered or rounded off	Rounded off	P

Appendix No. 7:

EN50075: 1990 Standard sheet 1



Dimensions in millimetres

1) These dimensions shall not be exceeded within a distance of 18 mm from the engagement face of the plug.

2) Dimension *a* is:

18 mm to 19,2 mm in the plane of the engagement face;

17 mm to 18 mm at the ends of the pins.

3) This dimension may be increased to 4 mm within a distance of 4 mm from the engagement face of the plug.

Pin ends shall be rounded, or conical as shown in detail sketch.

The sketches are not intended to govern design except as regards the dimensions shown.

Appendix No. 8: Equipment combined with two-pole plug (Class II)

The Australian plug was tested according to Annex J of AS/NZS 3112:2017

Clause	Requirement – Test	Remark	Verdict
2.2	**PLUG PINS**		P
2.2.1	Material for pins		P
	Current carrying parts of plug pins -copper, or copper alloy containing at least 58% copper for parts made from cold rolled sheet or at least 50% copper for other parts; or stainless steel containing at least 13% chromium and not more than 0.09% carbon.	58% copper	P
2.2.2	Assembly of pins		P
2.2.3	The exposed ends and the contact portion of plug pins shall be smooth and free from openings or indentations;		P
2.2.4	Live parts of insulated pin plugs shall not be exposed when the plug is partially or fully engaged with the associated socket.		P
	Plugs with insulated pin do not need to comply with the R20.0 +/-1 mm of Figure 2.1(e).		P
2.8	**RATINGS AND DIMENSIONS OF LOW VOLTAGE PLUGS**		P
2.8.1	Low voltage flat-pin plugs shall conform to the appropriate dimensions shown in Figure 2.1.		P
	the distance between a live pin of any plug and the edge of the moulding of the plug, shall be not less than 9 mm.	9.05mm min.	P
	No point on the front face of the plug is more than 0.5 mm.	No protrusion	P
2.8.4	Compliance with dimensional requirements of Figure 2.1		P
	Low voltage flat-pin or combination of flat and round pin, plugs having ratings up to 15A of Figure 2.1(a1), Figure2.1(c), Figure 2.1(d), Figure 2.1(f) or Figure 2.1(g) type shall comply with the dimensional requirements of Figure 2.1(e).		P
	Plugs with insulated pins, complying with this Standard, need not comply with dimension R20+/-1.0 mm of Figure 2.1(e)		P
2.9	**INTERNAL CONNECTIONS**		N/A
	A loose terminal screw or conductive material cannot bridge any live parts or earthing parts;		N/A
2.10	**ARRANGEMENT OF EARTHING CONNECTIONS**	No earthing pin	N/A
2.12	**MARKING** (No marking is applicable for the integral plug portion. See markings for transformer)		N/A

Clause	Requirement – Test	Remark	Verdict
2.12.6	Configuration of plugs, viewed as from the pins, shall be earth, neutral and active in a clockwise direction. Where there is no earthing pin, the live pins shall conform to this configuration.		P
2.13	**TESTS ON PLUGS**		P
2.13.3	High voltage test		P
2.13.7	Mechanical strength of pin tests		P
2.13.7.1	Tumbling barrel test (modified as follows)		P
	a) 500 times if the mass of the specimen does not exceed 250g.	55g max.	P
	b) 250 times if the mass of the specimen exceeds 250g.		N/A
	The pins being straightened after 100 drops and at the completion of the test to pass through the appropriate gauge of figure A1, B1 or F1; and following each test the samples shall comply with item (e) of standard): -the pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.		P
2.13.7.2	Pin bending test		P
	The point of application of the force shall be 14± 0.5 mm from the face of the plug.		P
	The direction of the force shall be along a line parallel to the face of the plug.		P
	Active and neutral pins shall be forced towards the centroid of the plug and then back to the starting point. Earth pin shall be forced but in one direction only then back to the starting point.		P
	The distance moved from the point of application shall be 7.5 ± 0.3 mm. Any “spring-back” is ignored.		P
	The travel from the starting point to the end point and back to the starting point is one cycle.		P
	The interval between successive cycles shall be a minimum of 10 s.		P
	The duration of one cycle shall be a maximum of 60 s.		P
	The pins shall be tested for 20 complete cycles.		P

Clause	Requirement – Test	Remark	Verdict
	After to tests the pins shall be inspected with normal or corrected to normal vision.		P
	The pin shall not be broken off.		P
2.13.8	Temperature rise test (modified as follows)		P
	With 1.1 times rated current prescribed by transformer. The temperature rise of the terminals shall not exceed 45 K.	13.4K max.	P
2.13.9	Securement of pins		P
2.13.9.1	Movement of pins		P
	Clamped 5 ±0.5 mm and applying 18 ±1 N to the pin at 14 ±0.5 mm		P
	The maximum deflection shall not exceed 2.0 mm.	0.4mm	P
2.13.9.2	Fixing of pins		P
	Maintained 50 ±2°C for 1 h. 60 ±0.6 N for 10 min.		P
	The attachment of pins shall be not more than 2.4 mm or if any pin fails to return to within 0.8 mm of its nominal length specified in Figure 2.1 within 5 min of the removal of the test force.	Pins displaced: 0.53mm max; Pins return to 0.31mm max	P
2.13.13	Tests on the insulation material of insulated pin plugs, if any		P
2.13.13.2	Pressure test at high temperature		P
	Maintained for 2 h at 160 ±5°C. Force applied through the blade: 2,5 N		P
	Thickness within the area of impression ≥ 50 %. no cracks	Before test: 0.36mm; after test: 0.31mm	P
2.13.13.3	Static damp heat test		P
	Two damp heat cycles (12+12h), 95% relative humidity, Lower temperature 25+3°C and upper temperature 40°C		P
	(a) the insulation resistance test in accordance with Clause 2.13.2(e); (b) high voltage test in accordance with Clause 2.13.3 and; (c) abrasion test in accordance with Clause 2.13.13.6.		P
2.13.13.4	Low temperature test		P
	Maintained at –15+2°C for 24h and returned to room temperature		P
	(a) the insulation resistance test in accordance with Clause 2.13.2(e); (b) high voltage test in accordance with Clause 2.13.3 and; (c) abrasion test in accordance with Clause 2.13.13.6.		P
2.13.13.5	Impact test at low temperature		P

Clause	Requirement – Test	Remark	Verdict
	Maintained at -15 ±2°C for at least 24 h. a height of 100 mm. Four impacts. No cracks.		P
2.13.13.6	Abrasion test		P
	Plug pins provided with insulating sleeves: 20000 movements, 4 N (apparatus shown in fig. 23). No damage, the insulating sleeve shall not have punctured or rucked up.		P
APPENDIX J	**EQUIPMENT WITH INTEGRAL PINS FOR INSERTION INTO SOCKET-OUTLETS**		**P**
J1	SCOPE		P
J2	DEFINITIONS		P
J2.1	Detachable plug portion		P
J2.2	Integral plug portion		P
J2.3	Plug portion		
J3	REQUIREMENTS FOR THE PLUG PORTION		P
J3.1	General		
J3.2	Plug pins of plug portions	See clause 2.2	P
J3.3	Ratings and dimensions for low voltage plug portions	See clause 2.8	P
J3.4	Internal connection for plug portions	See clause 2.9	P
J3.5	Arrangement of earthing connection for plug portions	See clause 2.10	P
J3.6	Configuration of plug portions	See clause 2.12.6	P
J4	TESTS	See clause 2.13	P
J4.1	General		P
J4.2	High voltage test	See clause 2.13.3	P
J4.3	Mechanical strength of pin tests	See clause 2.13.7	P
J4.3.1	Tumbling barrel test	See clause 2.13.7.1	P
J4.3.2	Pin bending test	See clause 2.13.7.2	P
J4.4	Temperature rise test	See clause 2.13.8	P
J4.5	Securement of pins of the plug portion	See clause 2.13.9	P
J4.6	Tests on the insulation material of insulated pin plug portions	See clause 2.13.13	P
J4.7	Equipment with integral pins intended to be supported by the contacts of a socket-outlet		P
	The additional torque, which has to be applied to socket-outlet to maintain the engagement face in the vertical plane, shall not exceed 0.25N.m.	Normal position: 0.05Nm max.; Reverse position: 0.05Nm max.	P
J4.8	Additional requirements for detachable plug portions	No detachable plug portion	N/A

Clause	Requirement – Test	Remark	Verdict
J4.8.1	Access to live parts		N/A
	The design and construction of the detachable plug portion shall be such that it is not possible to contact live parts with the small test finger of Figure 13 of IEC 61032		N/A
	It shall not be possible to incorrectly assemble the plug portion to the equipment allowing access to live parts		N/A
	Conformance is checked by inspection and applying small test finger of Figure 13 of IEC 61032:1997 to the plug portion. If an opening does not allow entry of the test finger, a force on the test finger in the straight position is increased to 20 N		N/A
J4.8.2	Construction of detachable contacts where the input current of the equipment exceeds 0.2 A		N/A
	Contacts of the equipment shall be such that they make the maintain, under normal service conditions, satisfactory electrical and mechanical contact with the corresponding contact of the detachable plug portion		N/A
	For connections intended to accommodate flat pins, contact shall be made with both sides of each pin, except that it shall be permissible to use spring-assisted single-sided contacts. These contacts shall not rely exclusively on the resilience of the contact material and shall have an opposite face of material other than thermoplastic or resilient insulating material. The alignment and contact making properties of contacts shall be independent of terminal screws. The effectiveness of the contacts shall be independent of pressure from any thermoplastic or resilent moulding		N/A
	Conformance with the effectiveness of the contacts is checked by inspection and by the plug portion detachment requirements of Paragraph J4.8.3		N/A
	A visual inspection is conducted to determine the existence of interference between the metal contacts and the thermoplastic or resilient moulding to provide supplementary contact pressure to the meal contacts		N/A
J4.8.3	Plug portion detachment requirements		N/A
	For all Type B or C devices and for Type A devices where the outlet of the detachable plug portion is parallel to the plug supply pins, disengagemet of the detachable plug portion from the equipment shall require at least two simultaneous independent actions or the use of a tool		N/A
	Conformance is verified by inspection and the following test		N/A
	The plug portion and the equipment/adaptor shall be connected and disconnedted 50 times (100 strokes)		N/A

Clause	Requirement – Test	Remark	Verdict

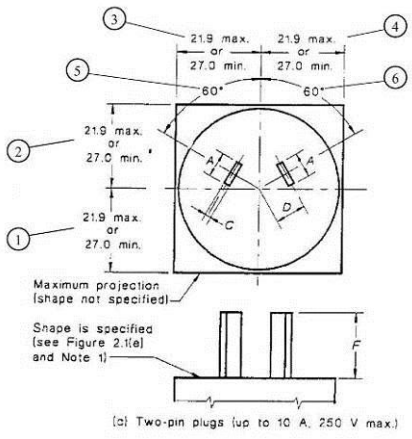
Appendix No. 9：Dimension Checking for Two-pin plug (Up to 10 A rating) According to AS/NZS 3112: 2017

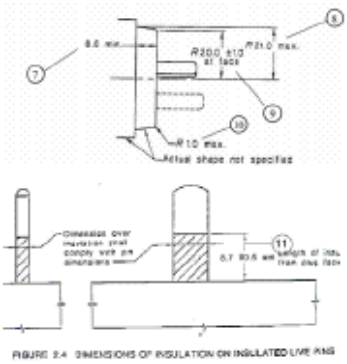
	The plug portion shall be securely held in pisiton. A force which, over a period of 10 s, shall be increased steadily to 60±0.6 N and held at this value for a further 10 s, shall be applied evenly at the connecting equipment in a direction parallel to the pins. This procedure shall be conducted three times on the same plug portion, at intervals of 5 min, without disturbing the plug pirtions between test		N/A
	During the test period, the plug portion shall not separate from the equipment		N/A
	The test of AS/NZS 3112 'temperature rise test' for plugs shall be conducted immediately after the above test without disturbing the sample		N/A
J4.8.4	Resistance of insulating material to heat and fire		N/A
J4.8.4.1	Rsistance to heat		N/A
	For Type B detachable plug portions parts of non-metallic material, parts of insulating material supporting live parts including connections, and parts of thermoplastic material providing supplementary insulation or reinforced insulation, shall be sufficiently resistant to heat if their deterioration could cause the appliance to fail to comply with this Standard		N/A
	This requirement does not apply to the insulation or sheath of flexible cords or internal wiring		N/A
	Conformance is checked by subjecting the relevant part to the ball pressure test of IEC 60695-10-2		N/A
	The test is carried out at a temperature of 40±2°C plus the maximum temperature rise determined during the temperature test of Paragraph J4.4, but it shall be at least--		N/A
	(a) 75±2°C, for external parts;		N/A
	(b) 125±2°C, for parts supporting live parts		N/A
J4.8.4.2	Resistance to fire		N/A
	Plug portions shall comply with the requirements for resistance to fire in accordance with AS/NZS 3100. The glow-wire test temperature 'T' shall be 750°C		N/A

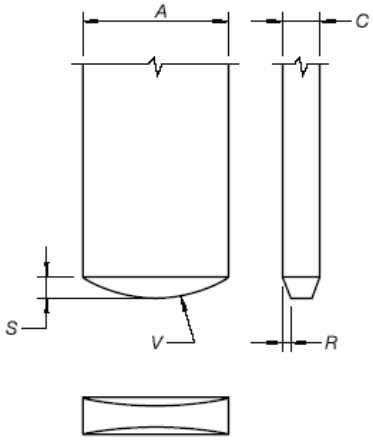
CHECKING OF DIMENSIONS

Dimensions checked by gauge and measurement

Standard sheet Figure 2.1 (c) Standard sheet Figure 2.1 (e) Standard sheet Figure 2.1 (h)







Position	Required (mm)	By Measurement (mm)	By the gauge shown in Figure A1
A	6.35±0.15	6.38	-
B	-	-	-
C	$1.63^{+0.15}_{-0.05}$	1.65	-
D	7.92	-	OK
E	-	-	-
F	17.06±0.4	17.13	-
G	-	-	-
R	0.35±0.05	0.36	-
S	0.90±0.10	0.95	-
T	≥0.60	-	-
V	6	-	OK
1	21.9 max. or 27.0 min.	12.43	-
2	21.9 max. or 27.0 min.	12.43	-
3	21.9 max. or 27.0 min.	19.61	-
4	21.9 max. or 27.0 min.	19.61	-
5	60°	-	OK
6	60°	-	OK
7	8.6 min.	9.14	-
8	21.0 max.	15.78	-
9	20.0±1.0	--	-
10	1.0 max	0.31	-
11	8.7±0.5	8.52	-