TEST REPORT

IEC 60 335-1

Safety of household and similar electrical appliances

Part 1: General requirements

Report reference No ..... :	12014347 001
Tested by (printed name and signature) ..... :	S. Kischka
Approved by (printed name and signature) ..... :	M. Kera
Date of issue ..... :	Jul 06, 2006
Contents ..... :	Total 67 pages

This report is based on a blank test report that was prepared by FIMKO using information obtained from the TRF originator (see below).

Testing Laboratory Name ..... :	TÜV Rheinland Japan Ltd., Yokohama Laboratory
Address ..... :	4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama 224-0021, Japan
Testing location ..... :	Same as above

Applicant's Name ..... :	GlobTek, Inc.
Address ..... :	186 Veterans Dr. Northvale, NJ07647, USA
..... :	

Test specification	
Standard ..... :	IEC 60 335-1:91 + A1:94 + A2:99
Test procedure ..... :	CB scheme
Procedure deviation ..... :	N/A
Non-standard test method ..... :	N/A

Test Report Form	
Test Report Form No. ..... :	I3351___F/00-03
TRF originator . ..... :	NEMKO
Master TRF ..... :	dated 00-03

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Test item description ..... :	Switching Power Supply
Trademark ..... :	GlobTek
Manufacturer ..... :	Same as applicant
Model and/or type reference ..... :	GTH81081-xy-z-a; GTH81081-xy-z-a-CC; for model list see page 4
Rating(s) ..... :	Input: AC100-240V, 50/60Hz, 1.5A
	Output: see model list on page 4

Test items particulars:	
Additional information ..... :	N/A
National requirements ..... :	See page 3
Other requirements ..... :	N/A

Nature of supply .....:	a.c.
Class of protection against electrical shock... :	Class II
Degree of protection against moisture .....:	IPX0
Type of cord attachment .....:	N/A
Nominal capacity of container .....:	N/A
Type of mounting .....:	
- building-in .....:	No
- independent .....:	Yes
- to be fixed to a support .....:	No
- hand-held .....:	No
switch .....:	No
thermostat .....:	No
thermal cut-out .....:	No
electronic circuit .....:	Yes
programme controller .....:	No
timer .....:	No
portable appliance .....:	Yes
more than one function .....:	No
alternative accessories provided .....:	No
interlock between lid and main switch .....:	No
water outlet .....:	No
power supply cord provided .....:	No
appliance inlet provided .....:	Yes
appliance for unattended use .....:	Yes
bare heating elements .....:	No
series motors incorporated .....:	No
motor with capacitor in auxiliary winding .....:	No
appliance to be immersed for cleaning .....:	No
appliance for outdoor use .....:	No
connector incorporating a thermostat .....:	No
Test case verdicts	
Test case does not apply to the test object ..:	N/A
Test item does meet the requirement .....:	P(ass)
Test item does not meet the requirement .....:	F(ail)
Testing	
Date of receipt of test item .....:	May 17, 2006
Date(s) of performance of test .....:	May 17, 2006 – May 19, 2006

General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item(s) tested.

"(see remark #)" refers to a remark appended to the report.

"(see Annex #)" refers to an annex appended to the report.

Throughout this report a comma is used as the decimal separator.

"This report is not valid as a CB Test Report unless appended to a CB Test Certificate issued by a NCB, in accordance with IECEE 02".

Comments

Summary of compliance with National Differences (for explanation of codes see below):

AR, AT, AU, BE, CH, CZ, DE, DK, ES, FI, FR, GB, HU, IT, JP, KR, NL, NO, PL, PT, RU, SE, SK, SI, TR

AR=Argentina, AT=Austria, AU=Australia, BE=Belgium, CH=Switzerland, CZ= Czech Republic, DE=Germany, DK=Denmark, ES=Spain, FI=Finland, FR=France, GB=United Kingdom, HU=Hungary, IT=Italy, JP=Japan, KR= Republic of Korea, NL=The Netherlands, NO=Norway, PL=Poland, PT= Portugal, RU= Russian Federation, SE=Sweden, SK=Slovakia, SI=Slovenia, TR=Turkey

For National Differences see end of this test report.

Brief description of the test sample:

1. The equipment models GTH81081-xy-z-a / GTH81081-xy-z-a-CC are Switching Power Supply (desktop type) used for DC supply of Audio/Video equipment.
2. The power supply's top enclosure is secured to bottom enclosure by ultrasonic welding.
3. The test samples are pre-production without serial numbers.
4. The model reference are GTH81081-xy-z-a / GTH81081-xy-z-a-CC, 'a' represents the inlet used, 'x-y' represents the output voltage, 'B' represents the output power, details see model list;
5. Models GTH81081-6012-T2, GTH81081-6020-0.9-T2, GTH81081-6024-T2, GTH81081-6012-T2-CC, GTH81081-6020-0.9-T2-CC and GTH81081-6024-T2-CC have been selected for test, and unless otherwise specified, the model GTH81081-6024-T2 was tested.
6. The normal heating test of GTH81081-6012-T2, GTH81081-6020-0.9-T2, GTH81081-6012-T2-CC, GTH81081-6020-0.9-T2-CC was performed in an ambient temperature 40°C heating chamber.

Difference between models:

1. Transformer: The adaptors with different output voltage have different secondary winding of transformer, details see model list;
2. C1, R19, R19A, R15, D5, C9, C10, C11: The parameter of these components depend on output power and output voltage;
3. R3, R4, R26, R12, R18, R20, C3: The parameter of these components depend on output voltage.
4. The model GTH81081-xy-z-a is similar to GTH81081-xy-z-a-CC except the model number and the secondary voltage control method, the GTH81081-xy-z-a used U3, C17, R35 and D6 in secondary circuit to control the secondary voltage, and GTH81081-xy-z-a-CC used U2-A, U2-B, C13, C14, C15, C16, R27, R28, R29, R30, R32, R33 and R34 in secondary circuit to control the secondary voltage.

Summary of Testing and Conclusions

The sample(s) tested complies with the requirements of IEC 60 335-1:91 + A1:94 + A2:99, Compliance with the National requirements of "(countries) as given in CB Bulletin CB-Bulletin 109A was also confirmed.

Model list:

GTH81081-xy-z-a / GTH81081-xy-z-a-CC :

MODEL	INPUT	OUTPUT		T1 sec winding
	V,A	U (Vdc)	Pmax (W)	
GTH 81081-x12-a / GTH 81081-x12-a-CC	AC100-240V, 50/60Hz, 1.5A	12.0	60	Φ0.65mmx3px6 Ts
GTH 81081-x14-z-a / GTH 81081-x14-z-a-CC		12.1-13.9	60	
GTH 81081-x14-a / GTH 81081-x14-a-CC		14.0	60	
GTH 81081-x15-z-a / GTH 81081-x15-z-a-CC		14.1-14.9	60	Φ0.60mmx2px8 Ts
GTH 81081-x15-a / GTH 81081-x15-a-CC		15.0	60	
GTH 81081-x18-z-a / GTH 81081-x18-z-a-CC		15.1-17.9	60	
GTH 81081-x18-a / GTH 81081-x18-a-CC		18.0	60	
GTH 81081-x19-z-a / GTH 81081-x19-z-a-CC		18.1-18.9	60	
GTH 81081-x19-a / GTH 81081-x19-a-CC		19.0	60	
GTH 81081-x20-z-a / GTH 81081-x20-z-a-CC		19.1-19.9	60	Φ0.50mmx2px10Ts
GTH 81081-x20-a / GTH 81081-x20-a-CC		20.0	60	
GTH 81081-x22-z-a / GTH 81081-x22-z-a-CC		20.1-21.9	60	
GTH 81081-x22-a / GTH 81081-x22-a-CC		22.0	60	
GTH 81081-x24-z-a / GTH 81081-x24-z-a-CC		22.1-23.9	60	
G GTH 81081-x24-a / GTH 81081-x24-a-CC		24.0	60	

Note:

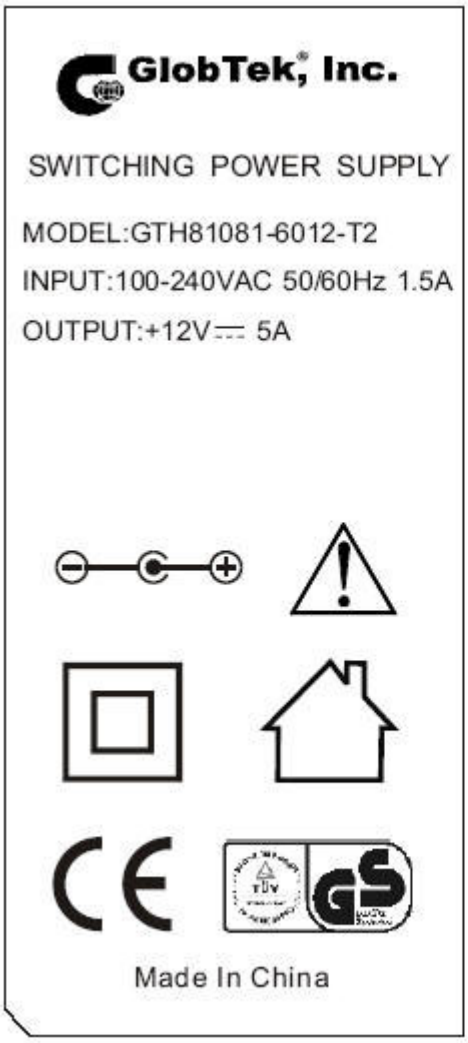
'y-z' represents output voltage , for example, when y = 18, z=2.5, y-z=18-2.5=15.5, the output voltage is 15.5V, '-z' will not be shown when z=0;

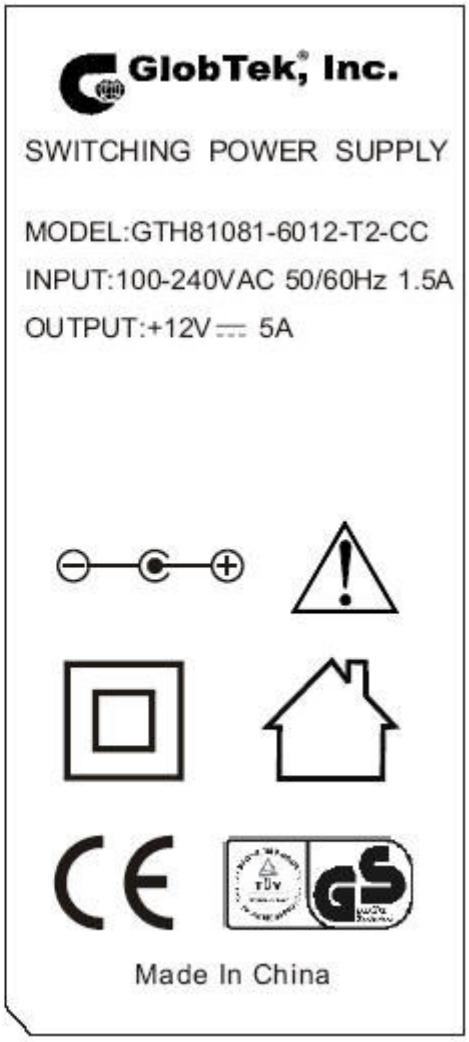
y	12	14	15	18	19	20	22	24
z	0	0-1.9	0-0.9	0-2.9	0-0.9	0-0.9	0-1.9	0-1.9

'a' can be 'T2', which represents the inlet type, 'T2' represents C8 inlet type;

'x' is 2 digit number which represents the output power which is maximum 60W by step of 1W, for example, 58 represents the output power is 58W, 60 represents the output power is 60W.

Copy of marking plate and summary of test results:





These are representative labels; the others are identical to these except the model number and ratings.

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
4.	GENERAL CONDITIONS FOR THE TESTS		**P**
	Tests performed according to Cl. 4, e.g. nature of supply, sequence of testing, etc.	Mains power supply	**P**
4.17	Appliances powered by rechargeable batteries are tested according to annex B (IEC 60335-1)		**N/A**
6.	CLASSIFICATION		**P**
6.1	Protection against electric shock: Class 0, 0I, I, II, III	Class I	**P**
6.2	Protection against harmful ingress of water	IPX0	**N/A**
7.	MARKING		**P**
7.1	Rated voltage or voltage range (V):	100–240 VAC	**P**
	Nature of supply:	AC	**P**
	Rated frequency or frequency range (Hz) :	50/60	**P**
	Rated input or rated current:	1,5A	**P**
	Manufacturer's or responsible vendor's name, trademark or identification mark:	GlobTek	**P**
	Model or type reference	GTH81081-xy-z-a; GTH81081-xy-z-a-CC	**P**
	Symbol for Class II		**P**
	IP number	IPX0	**N/A**
7.2	Warning for stationary appliances	Not stationary appliance	**N/A**
	Warning placed in vicinity of terminal cover		**N/A**
7.3	Range of rated values correctly marked with the use of a hyphen	100–240 VAC	**P**
	Different rated values correctly marked with the use of an oblique stroke		**N/A**
7.4	Voltage setting clearly discernible	Not adjustable appliance	**N/A**
7.5	Marking of rated input for each rated voltage	Only one rated voltage range	**N/A**
	Marking for upper and lower limits of rated input		**N/A**
7.6	Correct symbols used		**P**
	Add to the list of symbols (IEC 60335-1/A2)		**P**
7.7	Correct connection diagram, fixed to the appliance		**N/A**
7.8	Not for type Z attachment:	Approved inlet used	**N/A**
	- marking of terminals for the neutral conductor (N)		**N/A**
	- marking of earthing terminals		**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
	- marking not placed on removable parts		**N/A**
	- marking of terminal for single-pole protective device		**N/A**
7.9	Marking or placing of switches which may cause a hazard	No switch	**N/A**
7.10	Indications of switches and regulating devices by use of figures, letters or other		**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 controls	**N/A**
7.12	Instructions for safe use provided	The English and German manual was provided	**P**
7.12.1	Sufficient details for installation or maintenance supplied		**P**
7.12.2	Means for disconnection with contact separation at least 3 mm, the instructions shall state that the means for disconnection must be incorporated in the fixed wiring according to the wiring rules (IEC 60335-1/A2)	Not stationary appliance	**N/A**
7.12.3	Insulation in contact with parts exceeding 50 K; instruction		**N/A**
7.12.4	Information with regard to building-in:	Not built-in appliance	**N/A**
	- dimensions of space		**N/A**
	- dimensions and position of support		**N/A**
	- ventilation openings		**N/A**
	- connection/interconnection plug accessible		**N/A**
7.12.5	Replacement cord, type X attachment	Appliance inlet used.	**N/A**
	Replacement cord, type Y attachment		**N/A**
	Replacement cord, type Z attachment		**N/A**
7.13	Instructions and other texts in official language	English	**P**
7.14	Marking easily legible and durable		**P**
7.15	Marking on a main part		**P**
	Marking clearly discernible from outside		**P**
	Stationary appliance: name or trademark and model or type reference visible after installation		**N/A**
	Indication for switches and controls in vicinity of components; not on removable parts if misleading		**N/A**
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link	“T3.15AL 250V” marked on PCB adjacent to the fuse.	**P**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
8.	PROTECTION AGAINST ACCESSIBILITY TO LIVE PARTS		**P**
8.1	Adequate protection against accidental contact with live parts		**P**
8.1.1	All positions; detachable parts removed		**P**
	Removal of lamps: protection against contact with live parts	No lamps	**N/A**
	Use of test finger: no contact with live parts		**P**
8.1.2	Use of test pin: no contact with live parts		**P**
	Test pin also applied through openings in earthed metal enclosures (IEC 60335-1/A2)	No metal enclosure.	**N/A**
	See NOTE in Interpretation Sheet I-SH 02: Test pin applied to openings in earthed metal enclosures having a coating such as enamel or varnish		**N/A**
8.1.3	Use of test probe: no contact with live parts of visible glowing heating elements		**N/A**
8.1.4	Accessible part not considered live if:		**P**
	- extra-low a.c. voltage: peak values not exceeding 42,4 V		**N/A**
	- extra-low d.c. voltage: not exceeding 42,4 V	Max. output voltage: 25,1Vdc	**P**
	- or separated from live parts by protective impedance, d.c. current not exceeding 2 mA		**P**
	- or separated from live parts by protective impedance, a.c. peak value not exceeding 0,7 mA		**N/A**
	- for peak value 42,4 V up to and including 450 V capacitance not exceeding 0,1 µF		**N/A**
	- for peak value 450 V up to and including 15 kV capacitance not exceeding 0,1 µF		**N/A**
8.1.5	Live parts protected at least by basic insulation before installation or assembly:		**N/A**
	- built-in appliances		**N/A**
	- fixed appliances		**N/A**
	- separate units		**N/A**
	Compliance is checked by inspection and by test of 8.1.1 (IEC 60335-1/A2)		**N/A**
8.2	Class II appliances and constructions adequately protected against accidental contact with basic insulation and metal parts separated from live parts with basic insulation only		**P**

10.	POWER INPUT AND CURRENT	**P**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
10.1	Power input at rated voltage and normal operating temperature not deviating from rated input by more than shown in table; measured power input (W); rated input (W); deviation; allowed deviation:		**N/A**
10.2	Current at normal operating temperature not deviating from rated current by more than shown in table; measured current at rated voltage under normal operation (A); rated current (A); deviation :	(see appended table)	**P**

11.	HEATING		**P**
11.1	No excessive temperatures in normal use		**P**
11.2	Placing and mounting of appliance as described		**P**
11.3	Temperature rises determined by thermocouples or resistance method	By thermocouples method	**P**
11.4	Heating appliances operated under normal operation at 1,15 times rated power input	Not heating appliance	**N/A**
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0,94 and 1,06 times rated voltage	Considered as motor-operated appliance and tested at 0,9 and 1,06 times rated voltage	**P**
11.7	Operation duration corresponding to the most unfavourable conditions of normal use		**P**
11.8	Protective devices do not operate		**P**
	Sealing compound not flowing out		**N/A**
	Temperatures not exceeding values in table 3	(see appended table)	**P**
	Replacement of temperature rises (IEC 60335 1/A2)		**P**

13.	LEAKAGE CURRENT		**P**
13.1	Leakage current not excessive and electric strength adequate		**P**
13.2	Leakage current measured by means of circuit described in Annex G		**P**
	Leakage current measurements	(see appended table)	**P**
13.3	Electric strength test of insulation See added NOTE in Interpretation Sheet I-SH 02, August 1994	(see appended table)	**P**
	No breakdown during the test		**P**

15.	MOISTURE RESISTANCE		**P**
15.1	Enclosure provides the degree of moisture protection according to classification of appliance		**P**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
	NOTE- The external enclosure is carefully wiped to remove any surplus water (IEC 60335-1/A2)		**P**
15.1.1	Appliance subjected to test as specified	IPX0	**N/A**
	Withstand electric strength test specified in 16.3		**N/A**
	No trace of water on insulation which cab result in a reduction of distances and clearances below values specified in 29.1		**N/A**
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test		**N/A**
	Built-in appliance installed according to the manufacturer's instruction		**N/A**
	Other appliances tested as specified		**N/A**
15.2	Spillage of liquid does not affect the electrical insulation		**P**
	Overfilling test with additional amount of liquid (l):		**P**
	Withstand electric strength test in 16.3		**P**
	No trace of water on insulation which can result in reduction of distances and clearances below values specified in 29.1		**P**
15.3	Humidity treatment for 48 h	25°C, 95% R.H. for 48h	**P**
	Withstanding the test of Cl. 16		**P**

16.	LEAKAGE CURRENT AND ELECTRIC STRENGTH		**P**
16.1	No excessive leakage current and adequate insulation and electric strength (tests 16.2 and 16.3)		**P**
16.2	Leakage current measurements	(see appended table)	**P**
16.3	Electric strength tests (values in table 5) See added NOTE in Interpretation Sheet I-SH 02 August 1994	(see appended table)	**P**

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		**P**
	Appliance supplied with 1,06 or 0,94 times rated voltage and the most unfavourable short-circuit or overload likely to occur in normal use applied	(see appended table)	**P**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
	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		**P**
	Temperature of the winding not exceeding the value specified in table 6,		**P**
	however limits do not apply to fail-safe transformers complying with IEC 61558-1 (IEC 60335-1/A2)	Not fail-safe transformer	**N/A**

19.	ABNORMAL OPERATION		**P**
19.1	The risk of fire or mechanical damage under abnormal or careless operation obviated		**P**
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe		**P**
19.2	Test of appliance with heating elements with restricted heat dissipation; test voltage (V): power input of 0,85 times rated power input :	No heating elements	**N/A**
19.3	Test of 19.2 repeated; test voltage (V): power input of 1,24 times rated power input :		**N/A**
19.4	Test conditions as in Cl. 11, the power input being 1,15 times rated power input, any control limiting the temperature during tests of Cl. 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 elements sheath		**N/A**
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		**N/A**
19.6	Appliances with PTC heating elements tested as specified. Supplied at rated voltage, establishing steady conditions,	No PTC heating elements	**N/A**
	then the voltage increased in steps by 5% until 1,5 times rated voltage is reached or until the heating element ruptures.		**N/A**
	The working voltage is increased by 5% and operated until steady conditions are re-established. The voltage is then increased to 1,5 times working voltage or until the PTC heating element ruptures (IEC 60335-1/A2)		**N/A**
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque or locking moving parts	No rotor	**N/A**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
	Locked rotor, motor capacitors open-circuited or short-circuited, if required		**N/A**
	Appliances with timer or controller supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed		**N/A**
	Winding temperatures not exceeding limiting temperature; type of appliance; insulation class; measured temperature (°C);maximum allowed winding temperature (°C):		**N/A**
19.8	Three-phase motors operated at rated voltage with one phase disconnected	No motors	**N/A**
19.9	Running overload test of appliance incorporating motors intended to be remotely or automatically controlled or liable to be operated continuously; motor windings insulation class; measured temperature (°C); allowed temperature (°C) :		**N/A**
19.10	Series motor operated at 1,3 times rated voltage for 1 min		**N/A**
	Test is repeated for accessories but with no additional load		**N/A**
	Coffee mills and grain grinders are only tested for 30 s		**N/A**
	Safety not impaired, windings and connections have not worked loose		**N/A**
	During the test, parts shall not be ejected from the appliance (IEC 60335-1/A2)		**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 they comply with the conditions specified in 19.11.1	(see appended table)	**P**
19.11.1	Before applying the fault conditions a) to f) in 19.11.2, it is checked if circuits or parts of circuit meet both of the following conditions:		**N/A**
	- 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**
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction in other parts of the appliance does not rely on the correct functioning of the electronic circuit		**N/A**
19.11.2	Fault conditions applied one at a time, the appliance operated under conditions specified in Cl. 11, but supplied at rated voltage, the duration of the tests as specified:	(see appended table)	**P**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
	a) short circuit of creepage distances and clearances between live parts of different potential, if these distances are less than the values specified in 29.1, unless the relevant part is adequately encapsulated		**N/A**
	b) open circuit at the terminals of any component		**P**
	c) short circuit of capacitors, unless they comply with IEC 60384-14 (IEC 60335-1/A2)		**P**
	d) short circuit of any two terminals of an electronic component, other than integrated circuits. This fault condition is not applied between the circuits of an optocoupler		**P**
	e) failure of triacs in the diode mode		**N/A**
	f) failure of an integrated circuit. In this case the possible hazardous situations of the appliance are assessed to ensure that safety does not rely on the correct functioning of such a component		**P**
	During and after each test the following is checked:		**P**
	- the temperature rise of the windings do not exceed the values specified in table 6		**P**
	- the appliance complies with the conditions specified in 19.13		**P**
	- live parts not accessible to the test finger or test pin as specified in Cl. 8		**P**
	- any current flowing through protective impedance not exceeding the limits specified in 8.14		**P**
	If a conductor of a printed board becomes open-circuited, the appliance is considered to have withstood the particular test, provided all three of the following conditions are met:		**N/A**
	- the material of the printed circuit board withstands the burning test of subclause 20.1 of IEC 65		**N/A**
	- any loosened conductor does not reduce the creepage distances or clearances between live part and accessible metal parts		**N/A**
	- the appliance withstands the tests of 19.11.2 with open-circuited conductor bridged		**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 127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A) :	(see appended table)	**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 7	(see appended table)	**P**
	Enclosures not deformed to such an extent that compliance with Cl. 8 is impaired		**P**
	If the appliance still is operable it is complying with 20.2		**P**
	Appliance, other than Class III, withstands the electric strength test of 16.3, however, the test voltage being:		**P**
	- basic insulation: 1000 V	Between two live pins of inlet	**P**
	- supplementary insulation: 2750 V		**N/A**
	- reinforced insulation: 3750 V	(see appended table)	**P**

20.	STABILITY AND MECHANICAL HAZARDS		**P**
20.1	Adequate stability		**P**
	Tilting test through an angle of 10° (appliance placed on an inclined plane/horizontal plane); appliance does not overturn	Not floor standing appliance	**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 7		**N/A**
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury	No moving parts	**N/A**
	Protective enclosures, guards and similar parts are non-detachable		**P**
	Adequate mechanical strength and fixing of protective enclosures		**P**
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard, if unexpectedly reclosed		**N/A**
	Not possible to touch dangerous moving parts with test finger		**N/A**

21.	MECHANICAL STRENGTH		**P**
	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		**P**

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Clause	Requirement – Test	Result - Remark	Verdict
	No damage after three blows applied to various parts of the enclosure, impact energy 0,5 ± 0,04 Nm		**P**
	If necessary, supplementary or reinforced insulation subjected to the electric strength test of 16.3		**P**
	If necessary, repetition of groups of three blows on a new sample		**N/A**

22.	CONSTRUCTION		**P**
22.1	Appliance marked with the first numeral of the IP system: relevant requirements of IEC 529 are fulfilled	IPX0	**P**
22.2	Stationary appliance: means to provide all-pole disconnection from the supply provided, the following means being available:	Not stationary appliance	**N/A**
	- a supply cord fitted with a plug		**N/A**
	- a switch complying with 24.3		**N/A**
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided		**N/A**
	- an appliance coupler		**N/A**
	Single-phase Class I appliance with heating elements, intended to be permanently connected to fixed wiring, incorporating single-pole switches or single-pole protective devices for the disconnection of the heating element(s): the switches/devices being connected in the phase conductor		**N/A**
22.3	Appliance provided with pins: no undue strain on socket-outlets	Inlet used	**N/A**
	Applied torque not exceeding 0,25 Nm		**N/A**
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets		**N/A**
22.5	No risk of electric shock when touching the pins of the plug	Max. measured V: 6,7 V	**P**
22.6	Electrical insulation not affected by condensing water or leaking liquid		**N/A**
	Electrical insulation of Class II appliances not affected in case of a hose rupture or seal leak		**N/A**
22.7	Adequate safeguards against the risk of excessive pressure in appliances provided with steam-producing devices	No steam-producing device.	**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
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 which are likely to be cleaned in normal use	No cleaning is needed.	**N/A**
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances	Not intended to exposed to such things.	**P**
	Adequate insulating properties of oil or grease to which insulation is exposed		**N/A**
22.10	Location or protection of reset buttons of non-self-resetting controls is so that accidental resetting is unlikely	No such button.	**N/A**
22.11	Reliable fixing of non-detachable parts which provide the necessary degree of protection against electric shock, moisture or contact with moving parts	No such parts used.	**P**
	Obvious locked position of snap-in devices used for fixing such parts	No snap-in device.	**N/A**
	No deterioration of the fixing properties of snap-in devices used in parts which are likely to be removed during installation or servicing		**N/A**
	Tests		**N/A**
22.12	Handles, knobs etc. fixed in a reliable manner	No such components	**N/A**
	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible		**N/A**
	Axial force 15 N applied to parts, the shape of which being so that an axial pull is unlikely to be applied		**N/A**
	Axial force 30 N applied to parts, the shape of which being so that an axial pull is likely to be applied		**N/A**
22.13	Unlikely that handles, when gripped as in normal use, make the operators hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only		**N/A**
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		**N/A**
	No exposed pointed ends of self tapping screws etc., liable to be touched by the user in normal use or during user maintenance		**N/A**
22.15	Storage hooks and the like for flexible cords smooth and well rounded		**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands, no undue wear of contacts	No such things	**N/A**
	Cord reel tested with 6000 operations, as specified		**N/A**
	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		**N/A**
22.18	Current-carrying parts and other metal parts resistant to corrosion under normal conditions of use		**P**
22.19	Driving belts not used as electrical insulation		**N/A**
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless material used is non-corrosive, non-hygroscopic and non-combustible	The PCB is UL approved V-1 or better material.	**P**
	Compliance is checked by inspection and, if necessary, by appropriate test (IEC 60335-1/A2)		**P**
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless impregnated	No such things used.	**P**
22.22	Appliances shall not contain asbestos (IEC 60335-1/A2)	No asbestos used.	**P**
22.23	Oils containing polychlorinated biphenyl (PCB) not used	No such oils used.	**P**
22.24	Bare heating elements adequately supported	No heating elements.	**N/A**
	In case of rupture, the heating conductor is unlikely to come in contact with earthed metal parts or accessible metal parts		**N/A**
22.25	Sagging heating conductors cannot come into contact with accessible metal parts		**N/A**
22.26	The insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation	The transformer is used as a double insulation system.	**P**
22.27	Parts connected by protective impedance separated by double or reinforced insulation		**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 protection against electric shock is maintained after installation		**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	Creepage distances and clearances over supplementary and reinforced insulation not reduced below values specified in 29.1 as a result of wear		**P**
	Creepage distances and clearances over supplementary or reinforced insulation not reduced to less than 50% of values specified in 29.1 if wires, screws etc. becomes loose		**P**
22.32	Supplementary and reinforced insulation designed or protected against deposition of dirt or dust		**P**
	Ceramic material not tightly sintered, similar material or beads alone not used as supplementary or reinforced insulation	No such material	**N/A**
	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 29.1	No rubber used	**N/A**
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature	No oxygen bomb used.	**N/A**
	See added NOTE (“In case of doubt “) in Interpretation Sheet I - SH 01, February 1993.		**N/A**
22.33	Conductive liquids which are or may become accessible in normal use are not in direct contact with live parts. Electrodes shall not be used (IEC 60335-1/A2)	No liquid.	**N/A**
	For class II constructions, conductive liquids which are or may become accessible in normal use shall not be in direct contact with basic or reinforced insulation (IEC 60335-1/A2)		**N/A**
	For class II constructions, conductive liquids which are in contact with live parts, shall not be in direct contact with reinforced insulation (IEC 60335-1/A2)		**N/A**
22.34	Shafts of operating knobs, handles, levers etc. not live, unless the shaft is not accessible when the part is removed	No such parts.	**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
22.35	Handles, levers and knobs, held or actuated in normal use, not becoming live in the event of an insulation fault	No such parts.	**N/A**
	Such parts being of metal, and their shafts or fixings are likely to become live in the event of an insulation fault, they 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 other than those of electrical components, provided they are either reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal		**N/A**
22.36	Handles continuously held in the hand in normal use are so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless they are separated from live parts by double or reinforced insulation	No handles	**N/A**
22.37	Capacitors in Class II appliances not connected to accessible metal parts, unless complying with 22.42		**P**
	Metal casings of capacitors in Class II appliances separated from accessible metal parts by supplementary insulation, unless complying with 22.42		**P**
22.38	Capacitors not connected between the contacts of a thermal cut-out	No thermal cut-out.	**N/A**
22.39	Lamp holders only used for the connection of lamps	No lamp holders	**N/A**
22.40	Motor-operated appliances and combined appliances, intended to be moved while in operation, are fitted with a switch to control the motor. The actuating member of this switch shall be easily visible and accessible (IEC 60335-1/A2)	No moving parts.	**N/A**
22.41	Mercury switches mounted according to the requirement		**N/A**
22.42	Protective impedance consisting of at least two separate components	Two Y2 capacitor used.	**P**
	Values specified in 8.1.4 not exceeded if any one of the components is short-circuited or open-circuited		**P**
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur		**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
22.44	Appliances are not allowed to have an enclosure which is shaped or decorated so that the appliance is likely to be treated as toy by children (IEC 60335-1/A2)		**P**
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	No wire holes.	**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 or corners	No such things.	**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		**N/A**
	Flexible metallic tubes not causing damage to insulation of conductors		**N/A**
	Open-coil springs not used		**P**
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		**N/A**
	No damage after 10 000 flexings		**N/A**
	Electric strength test, 1000 V between live parts and metal parts		**N/A**
23.4	Bare internal wiring sufficiently rigid and fixed	No such things	**N/A**
23.5	The basic insulation of internal wiring withstanding the electrical stress likely to occur in normal use	The internal wire are UL-approved.	**P**
	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**
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by positive means		**N/A**
23.7	Only the colour combination green/yellow used for earthing conductors	Class II appliance	**N/A**
23.8	Aluminium wires not used for internal wiring	No aluminium used.	**P**
23.9	No lead-tin soldering of stranded conductors where they are subject to contact pressure, unless	No such part.	**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
	clamping means so constructed that there is no risk of bad contact due to cold flow of the solder		**N/A**

24.	COMPONENTS		**P**
24.1	Components comply with safety requirements in relevant IEC standards	All components related to safety are approved.	**P**
24.1.1	Capacitors likely to be permanently subjected to the supply mains voltage and used for radio interference suppression or for voltage dividing, shall comply with annex Q (IEC 60335-1/A2)	The X2 capacitor is VDE approved.	**P**
	Small lampholders: compliance with requirements for E10 lampholders	No lampholder.	**N/A**
	Safety isolating transformers which have not been separately tested and found to comply with IEC 61558-2-6 shall comply with annex R (IEC 60335-1/A2)	The isolating transformer is tested with appliance.	**P**
	Appliance couplers for IPx0 appliances: compliance with IEC 320		**P**
	Other appliance couplers: compliance with IEC 309		**N/A**
	Automatic controls: compliance with IEC 730, unless tested with the appliance		**N/A**
	Switches: compliance with IEC 61058-1, unless tested with the appliance (IEC 60335-1/A2)		**N/A**
24.1.2	Automatic controls not separately tested and found to comply with IEC 730: additional tests according to this standard and subclauses 11.3.5 to 11.3.8 and clause 17 of IEC 730 as type 1 controls, the cycles of operation being:	No such components	**N/A**
	- thermostats: 10 000		**N/A**
	- temperature limiters: 1 000		**N/A**
	- self-resetting thermal cut-outs: 300		**N/A**
	- non-self-resetting thermal cut-outs: 30		**N/A**
	- energy regulators: 10 000 (IEC 60335-1/A2)		**N/A**
	- timers: 3000 (IEC 60335-1/A2)		**N/A**
24.1.3	Switch tested separately according to subclause 17.2.7 of IEC 61058-1, for 10 000 cycles of operation (IEC 60335-1/A2)	No switch.	**N/A**
	or if not separately tested, tested according to annex S (IEC 60335-1/A2)		**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
	Switches for no-load-operation and operable only with the aid of a tool, are not subjected to the tests of clauses 15 and 16 of IEC 328. This applies also to switches operated by hand, and with interlock for no-load-operation (IEC 60335-1)		**N/A**
	Switches without this interlock subjected to the test of Cl. 16 for 100 cycles of operation (IEC 60335-1)		**N/A**
	Switches for no-load-operation and operable only with the aid of a tool, are not subjected to the tests of clause 17 of IEC 61058-1. This applies also to switches operated by hand, and with interlock for no-load-operation but switches without this interlock are subjected to the test of subclause 17.2.7 of IEC 61058 for 100 cycles of operation (IEC 60335-1/A2)		**N/A**
24.1.4	Components marked with their operating characteristics are used in the appliance in accordance with these markings	All components marked with their operating characteristics are used in the appliance in accordance with these markings.	**P**
	Component which have to comply with other standard is tested separately, according to the relevant standard		**N/A**
	Component used within the limits of its marking, tested in accordance with conditions occurring in the appliance		**P**
	Component not marked, or not used in accordance with its marking, or no IEC standard exists, tested under the conditions occurring in the appliance		**P**
	Components not mentioned in table 3 tested as part of the appliance		**P**
24.1.5	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**
	Requirement s for capacitors in appliances for which 30.2.3 is appliacable and which are permanently connected in series with a motor winding (IEC 60335-1/A2)		**N/A**
	List of components		**N/A**
24.2	No switches or automatic controls in flexible cords		**P**
	No devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance		**P**
	No thermal cut-outs which can be reset by soldering		**P**

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Clause	Requirement – Test	Result - Remark	Verdict
24.3	Switch intended for all-pole disconnection of stationary appliances is directly connected to the supply terminals, having a contact separation of at least 3 mm in each pole	No switch.	**N/A**
24.4	Plugs and socket-outlets for heating elements and extra-low voltage circuits, not interchangeable with plugs and	No such thing.	**N/A**
	socket-outlets complying with IEC 60083 or IEC 60906 (IEC 60335-1/A2)		**N/A**
	connectors and appliance inlets complying with IEC 320		**N/A**
24.5	Plugs and socket-outlets etc. for interconnection cords, not interchangeable with plugs and socket-outlets complying with IEC 60083 or IEC 60906 (IEC 60335-1/A2)		**N/A**
	connectors and appliance inlets complying with IEC 320, if direct supply from the mains could give rise to a hazard		**N/A**
24.6	Motors connected to the supply mains and having inadequate basic insulation for the rated voltage of the appliance, comply with the requirements of Annex F	No motor	**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		**N/A**
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance		**P**
	- pins for insertion into socket-outlets		**N/A**
25.2	Appliance not provided with more than one means of connection to the supply		**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		**N/A**
25.3	Connection of supply wires for appliance intended to be permanently connected to fixed wiring possible after the appliance has been fixed to its support		**N/A**
	Appliance provided with a set of terminals for the connection of cables or fixed wiring, cross-sectional areas specified in 26.3		**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
	Appliance provided with a set of terminals allowing the connection of a flexible cord		**N/A**
	Appliance provided with a set of supply leads accommodated in a suitable compartment (IEC 60335-1)		**N/A**
	Appliance provided with a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate type of cable or conduit		**N/A**
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimensions according to table 8		**N/A**
	Introduction of conduit or cable does not affect the protection against electric shock or reduce creepage distances and clearances below values specified in 29.1		**N/A**
25.5	Method for assemble supply cord with the appliance:	Appliance inlet used	**N/A**
	- type X attachment		**N/A**
	- type Y attachment		**N/A**
	- type Z attachment, if allowed in part 2		**N/A**
	Type X attachment other than those with a specially prepared cord, shall not be used for flat twin tinsel cords		**N/A**
25.6	Plugs fitted with only one flexible cord		**N/A**
25.7	Appliance supply cord not lighter than:		**N/A**
	- braided cord (245 IEC 51)		**N/A**
	- ordinary tough rubber sheathed cord (245 IEC 53)		**N/A**
	- flat twin tinsel cord (227 IEC 41)		**N/A**
	- light polyvinyl chloride sheathed cord (227 IEC 52), appliance not exceeding 3 kg		**N/A**
	- ordinary polyvinyl chloride sheathed cord (227 IEC 53), appliance exceeding 3 kg		**N/A**
	Temperature rise of external metal parts exceeding 75 K, PVC cord not used		**N/A**
	PVC cord used: appliance so constructed that the supply cord is not likely to touch external metal parts in normal use		**N/A**
	PVC supply cord appropriate for higher temperatures, type Y or type Z attachment used		**N/A**
25.8	Nominal cross-sectional area of supply cords according to table 9; rated current (A); cross-sectional area (mm^2):		**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
25.9	Supply cord not in contact with sharp points or edges		**N/A**
25.10	Green/yellow core for earthing purposes in Class I appliance		**P**
25.11	Conductors of supply cords not consolidated by lead-tin soldering where they are subject to contact pressure, unless		**N/A**
	clamping means so constructed that there is no risk of bad contacts due to cold flow of the solder		**N/A**
25.12	Moulding the cord to part of the enclosure does not damage the insulation of the supply cord		**N/A**
25.13	Inlet opening provided with a bushing, or is so constructed, that there is no risk of damage to the supply cord when introduced	Insulating enclosure	**P**
25.13.1	Inlet bushing so shaped as to prevent damage to the supply cord	No inlet bushing	**N/A**
	Inlet bushing not detachable		**N/A**
25.13.2	At inlet openings, the insulation between the conductor of a supply cord and the enclosure of the appliance is consisting of the insulation of the conductor, and in addition:		**P**
	- for Class 0 appliances: at least one separate insulation		**N/A**
	- for other appliances: at least two separate insulations		**P**
	Only one separate insulation is required if the enclosure at the inlet opening is of insulating material		**P**
	The separate insulation consists of:		**P**
	- the sheath of a supply cord at least equivalent to that of a cord complying with IEC 227 or 245		**P**
	- a lining or bushing of insulating material complying with the requirements of 29.2 for supplementary insulation		**N/A**
25.14	Supply cords adequately protected against excessive flexing		**N/A**
	Flexing test; applied force (N); number of flexings:		**N/A**
	The test does not result in:		**N/A**
	- short circuit between the conductors		**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**

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Clause	Requirement – Test	Result - Remark	Verdict
	- damage, within the meaning of the standard, to the cord or the cord guard		**N/A**
	- broken strands piercing the insulation and becoming accessible		**N/A**
25.15	Conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorages		**N/A**
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		**N/A**
	Pull and torque test of supply cord, values shown in table 10: pull (N); torque (not on automatic cord reel) (Nm) :		**N/A**
	Max. 2 mm displacement of the cord, and conductors not moved more than 1 mm in the terminals		**N/A**
	Creepage distances and clearances not reduced below values specified in 29.1		**N/A**
25.16	Cord anchorages for type X attachments so constructed and located that:	Appliance inlet used.	**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 cord		**N/A**
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless separated from		**N/A**
	- 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 part of a specially prepared cord		**N/A**
	- screws which have to be operated when replacing the cord do not fix any other component, if applicable		**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 a failure of the insulation of the cord does not make accessible metal parts live		**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
	- for Class II appliances: they are of insulating material, or if of metal, they are insulated from accessible metal parts by supplementary insulation		**N/A**
25.17	Adequate cord anchorages for type Y and Z attachment		**N/A**
25.18	Cord anchorages only accessible with the aid of a tool,		**N/A**
	or so constructed that the cord only can be fitted with the aid of a tool		**N/A**
25.19	Type X attachment, glands not used as cord anchorage in portable appliances	Appliance inlet used.	**N/A**
	Tying the cord into a knot or tying the cord with string not used		**N/A**
25.20	Conductors of the supply cord for type Y and Z attachment adequately additionally insulated		**N/A**
25.21	Space for supply cable for fixed wiring or supply cord for type X attachment constructed to permit checking of conductors with respect to correct positioning and connection before fitting any cover, no risk of damage, no contact with accessible metal parts if a conductor becomes loose, etc.		**N/A**
	For portable appliances, the uninsulated end of a conductor prevented from any contact with accessible metal parts, unless the end of the cord is such that the conductors are unlikely to slip free		**N/A**
25.22	Appliance inlet:		**P**
	- live parts not accessible during insertion or removal		**P**
	- connector can be inserted without difficulty		**P**
	- the appliance is not supported by the connector		**P**
	- is not for cold conditions if temp. rise of external metal parts exceeds 75 K, unless the supply cord is not likely to touch such metal parts	No external metal parts	**N/A**
25.23	Interconnection cords comply with the requirements for the supply cord, except as specified	No interconnection cords	**N/A**
	If necessary, electric strength test of 16.3		**N/A**
25.24	Interconnection cords not detachable without the aid of a tool		**N/A**

26.	TERMINALS FOR EXTERNAL CONDUCTORS	**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
26.1.1	Appliances with type X attachment and appliances for connection to fixed wiring provided with terminals in which connection is made by means of screws, nuts or equally effective devices	No terminals for external conductors	**N/A**
	Screws and nuts serve only to clamp supply conductors, except		**N/A**
	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		**N/A**
26.1.2	For type X attachment soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone		**N/A**
	Soldering alone used, barriers provided, creepage distances and clearances satisfactory if the conductor becomes free		**N/A**
	For type Y and Z attachment: soldered, welded, crimped and 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**
	For Class II appliances: soldering, welding or crimping alone used, barriers provided, creepage distances and clearances satisfactory if the conductor becomes free		**N/A**
26.2	Terminals for type X attachment and for connection to fixed wiring suitable for connection of conductors with required cross-sectional area according to table 11; rated current (A); nominal cross-sectional area (mm^2) :		**N/A**
	Terminals only suitable for a specially prepared cord		**N/A**
26.3	Terminals for the supply cord suitable for their purpose		**N/A**
	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless conductors ends fitted with a device suitable for screw terminals		**N/A**
	Pull test of 5 N to the connection		**N/A**
26.4	Terminals for type X attachment and those for connection to fixed wiring so fixed that when tightening or loosening the clamping means:		**N/A**
	- the terminal does not loosen		**N/A**
	- internal wiring is not subjected to stress		**N/A**
	- creepage distances and clearances are not reduced below the values in 29.1		**N/A**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
	Compliance checked by inspection and by the test of subclause 8.6. of IEC 999, the torque applied being equal to two-thirds of the torque specified. Nominal diameter of thread (mm); screw category; torque (Nm);		**N/A**
	test of subclause 8.6 of IEC 60999 (IEC 60335-1/A2)		**N/A**
26.5	Terminals for type X attachment and for connection to fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure and without damaging the conductor		**N/A**
26.6	Terminals for type X attachment, no special preparation of conductors required, and so constructed and placed that conductors prevented from slipping out, except those with a specially prepared cord and those for connection to fixed wiring		**N/A**
26.7	Terminals of the pillar type constructed and located as specified		**N/A**
26.8	Terminals for the connection to fixed wiring located close to each other, including the earthing terminal		**N/A**
26.9	Terminals for type X attachment accessible after removal of a cover or part of the enclosure		**N/A**
26.10	Terminals shall only be accessible after removable of a non-detachable part (IEC 60335-1/A2)		**N/A**
26.11	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection between live parts and accessible metal parts,		**N/A**
	and for Class II construction, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		**N/A**
	Stranded conductor test, 8 mm insulation removed		**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		**N/A**
	Earthing terminals not connected to neutral terminal		**N/A**
	Class 0, II and III appliance have no provision for earthing	Class II appliance	**P**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
27.2	Screwless terminals comply with IEC 685-2-1 (IEC 60335-1)	No such terminals.	**N/A**
	Terminals used 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		**N/A**
	Conductors cannot be loosened without the aid of a tool		**N/A**
	Clamping means adequately secured against accidental loosening		**N/A**
	Compliance is checked by inspection and by manual test (IEC 60335-1/A2)		**N/A**
27.3	Earth connection "made before" and "separated after" current-carrying connections		**N/A**
	Current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		**N/A**
27.4	No risk of corrosion resulting from contact between metal of earthing terminal and other metal		**N/A**
	Adequate resistance to corrosion of coated or uncoated parts providing earthing continuity, other than parts of a metal frame or enclosure		**N/A**
	Parts of steel providing earthing continuity provided at the essential areas with an electroplated coating, 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 case of aluminium alloys precautions taken to avoid risk of corrosion		**N/A**
27.5	Low resistance of connection between earthing terminal and earthed metal parts		**N/A**
	Resistance not exceeding 0,1 Ω at the specified low-resistance test		**N/A**
27.6	The printed conductors of printed circuit boards shall not be used to provide earthing continuity in hand held appliances. they may be use to provide earthing continuity in other appliances if		**N/A**
	- at least two tracks are used with independent soldering points and the appliance complies with requirements of 27.5 for each circuit;		**N/A**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
	- the material of the printed circuited board complies with IEC 60249-2-4 or IEC 60249-2-5 (IEC 60335-1/A2)		**N/A**

28.	SCREWS AND CONNECTIONS		**P**
28.1	Fixings and electrical connections and connections providing earthing continuity withstand mechanical stresses (IEC 60335-1/A2)		**P**
	Screws not of soft metal liable to creep, such as zinc or aluminium		**P**
	Diameter of screws of insulating material min. 3 mm	No insulating material screw.	**N/A**
	Screws of insulating material not used for any electrical connection	No insulating material screw.	**N/A**
	Screws transmitting electrical contact only screwing into metal	No such screw.	**N/A**
	Screws used for electrical connections or for connections providing earthing continuity shall screw into metal (IEC 60335-1/A2)	No such screw.	**N/A**
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		**N/A**
	Type X attachment, screws to be removed for replacement of supply cord, or for users maintenance, not of insulating material if their replacement by a metal screw can impair basic insulation		**N/A**
	For screws and nuts; test as specified (IEC 60335-1/A2)		**N/A**
	Screws and nuts transmitting contact pressure or which are likely to be tightened during user maintenance or installation subjected to torque test as specified, applying torque as shown in table 12		**N/A**
28.2	Contact pressure not transmitted through insulating material liable to shrink or distort, unless shrinkage or distortion compensated		**P**
28.3	Space-threaded (sheet metal) screws only used for electrical connections if they clamp these parts directly in contact with each other (IEC 60335-1/A2)		**N/A**
	Thread-cutting (self-tapping) screws not used for electrical connections, unless generating a full form standard machine screw thread (IEC 60335-1/A2)		**N/A**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer unless the thread is formed by a swaging action		**N/A**
	Use of thread-cutting and space-threaded screws for earthing continuity according to specification		**N/A**
28.4	Screws for current-carrying mechanical connection or screws providing earthing continuity secured against loosening		**N/A**
	Rivets for current-carrying connections subject to torsion secured against loosening		**N/A**
29.	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH INSULATION		**P**
29.1	Creepage distances and clearances not less than specified in table 13. See added text to notes 4 and 5 in Interpretation Sheet I-SH 01, February 1993	(see appended table)	**P**
	Values increased by 4 mm in case of reinforced insulation when resonance voltage		**N/A**
29.2	Distances through insulation not less than 1,0 mm for supplementary insulation, and 2,0 mm for reinforced insulation Interpretation of this requirement: See Interpretation Sheet I-SH 02, August 1994	The opto-coupler is VDE approved reinforce insulated type.	**P**
29.2.1	Supplementary insulation applied in thin sheet form, other than mica or similar scaly material, consists of at least two layers, each of the layers withstands the electric strength test of 16.3 for supplementary insulation		**N/A**
	Reinforced insulation applied in thin sheet form, other than mica or similar scaly material, consists of at least three layers, and any two of the layers together withstand the electric strength test of 16.3 for reinforced insulation	Approved triple insulated wire used.	**P**
29.2.2	Supplementary or reinforced insulation inaccessible and does not exceed the maximum permissible temperature values		**N/A**
	Supplementary or reinforced insulation, after conditioning as specified, withstands the electric strength test as specified in 16.3, both at the oven temperature and room temperature		**N/A**
30.	RESISTANCE TO HEAT, FIRE AND TRACKING		**P**
30.1	See Annex H		**P**
	Relevant external parts of non-metallic material		**N/A**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
	Parts supporting live parts and parts providing supplementary or reinforced insulation sufficiently resistant to heat	PCB; enclosure	**P**
	Ball-pressure test with a force of 20 N, diameter of impression not exceeding 2 mm	(See appended table)	**P**
	External parts: 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) :		**N/A**
	Parts supporting live parts: 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; Enclosure T1 bobbin is phenolic material and accepted without test.	**P**
	Or, for parts providing supplementary or reinforced insulation, 25°C plus the maximum temperature rise determined during clause 19 if this is higher; temperature (°C) :		**N/A**
30.2	Relevant parts of non-metallic material adequately resistant to ignition and spread of fire	PCB and bobbin used in appliance and enclosure are rated V-1 or better.	**P**
30.2.1	Possible burning test of relevant parts according to Annex J		**N/A**
	Glow-wire test of Annex K made at temperature 550 °C		**N/A**
30.2.2	Appliances operated while attended, parts of insulating material supporting connections carrying a current exceeding 0,5 A in normal operation, subjected to the glow-wire test of Annex K at 650 °C		**N/A**
30.2.3	Appliances operated while unattended, possible bad-connection test according to Annex L		**N/A**
	Glow-wire test of Annex K made at 750 °C (IEC 60335-1)		**P**
	Possible needle-flame test according to Annex M		**N/A**
30.2.4	Parts of non-metallic material within a distance of 50 mm from parts not withstanding the tests of 30.2.2 or 30.2.3, subjected to the needle-flame test of Annex M		**N/A**
30.3	Relevant insulating material have adequate resistance to tracking		**N/A**
	Tracking test at 175 V according to Annex N		**N/A**
	Tracking test at 250 V according to Annex N		**N/A**
	No hazard other than fire, tracking test at 175 V according to Annex N, and in addition needle-flame test of surrounding parts according to Annex M		**N/A**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
	Possible needle-flame test of non-metallic material		**N/A**
31.	RESISTANCE TO RUSTING		**P**
	Relevant ferrous parts adequately protected against rusting		**P**
32.	RADIATION, TOXICITY AND SIMILAR HAZARDS		**P**
	Appliance does not emit harmful radiation		**P**
	Appliance does not present a toxic or similar hazard		**P**
A	ANNEX A, NORMATIVE REFERENCES		**P**
	The annex contains a list of standards which are referred to, and thus become part of, this standard		**P**
B	ANNEX B, TESTING OF APPLIANCES POWERED BY RECHARGEABLE BATTERIES, SEE AMENDMENT 1:1994 (IEC 60335-1)		**N/A**
B.2	Definitions (IEC 60335-1)		**N/A**
B.2.2.9	Appliance operated under the following condition (IEC 60335-1)		**N/A**
	- the appliance operated by its fully charged battery is operated as specified in part 2 (IEC 60335-1)		**N/A**
	- the appliance is charged, the battery being initially discharged to such an extent that the appliance cannot operate (IEC 60335-1)		**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 part 2 (IEC 60335-1)		**N/A**
B.4	General conditions for the tests (IEC 60335-1)		**N/A**
B.4.101	Unless otherwise specified, appliances supplied from the supply mains are tested as specified for motor-operated appliances (IEC 60335-1)		**N/A**
B.7	Marking and instructions (IEC 60335-1)		**N/A**
B.7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage and polarity of the terminals (IEC 60335-1)		**N/A**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
B7.12	The instructions for appliances incorporating batteries intended to be replaced by the user includes required information (IEC 60335-1)		**N/A**
	Details about how to remove batteries containing materials hazardous to the environment given (IEC 60335-1)		**N/A**
B.7.15	Markings placed on the part connected to the supply mains (IEC 60335-1)		**N/A**
B.8	Protection against access to live parts (IEC 60335-1)		**N/A**
B.8.2	Basic insulation between live parts and parts accessible during and after removal of the battery (IEC 60335-1)		**N/A**
	Appliances having battery which may be replaced by the user (IEC 60335-1/A2)		**N/A**
B.11	Heating (IEC 60335-1)		**N/A**
B.11.7	Charging time for the battery (IEC 60335-1)		**N/A**
B.19.	Abnormal operation (IEC 60335-1)		**N/A**
B.19.101	Charging time at rated voltage (IEC 60335-1)		**N/A**
B.19.102	Short-circuiting of the battery, fully charged, for appliances having batteries which can be removed without the aid of a tool (IEC 60335-1)		**N/A**
B.19.103	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 (IEC 60335-1)		**N/A**
B.21	Mechanical strength (IEC 60335-1)		**N/A**
B.21.101	Appliances having pins for insertion into socket-outlets, checked according to procedure 2 of IEC 68-2-32 (IEC 60335-1)		**N/A**
	Mass of part not exceeding 250 g, 100 falls (IEC 60335-1)		**N/A**
	Mass of part exceeding 250 g, 50 falls (IEC 60335-1)		**N/A**
B.22	Construction (IEC 60335-1)		**N/A**
B.22.3	See NOTE (IEC 60335-1)		**N/A**
B.25	Supply connection and external flexible cords (IEC 60335-1)		**N/A**
B.25.13.2	See NOTE (IEC 60335-1)		**N/A**
B.30	Resistance to heat, fire and tracking (IEC 60335-1)		**N/A**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
B.30.2	For parts connected to the supply mains during the charging period, 30.2.3 applies (IEC 60335-1)		**N/A**
	For other parts, 30.2.2 applies (IEC 60335-1)		**N/A**
B.4	General conditions for the tests (IEC 60335-1)		**N/A**
B.4.101	Unless otherwise specified, appliances supplied from the supply mains are tested as specified for motor-operated appliances (IEC 60335-1)		**N/A**
B.7	Marking and instructions (IEC 60335-1)		**N/A**
B.7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage and polarity of the terminals (IEC 60335-1)		**N/A**
B7.12	The instructions for appliances incorporating batteries intended to be replaced by the user includes required information (IEC 60335-1)		**N/A**
	Details about how to remove batteries containing materials hazardous to the environment given (IEC 60335-1)		**N/A**
B.7.15	Markings placed on the part connected to the supply mains (IEC 60335-1)		**N/A**
B.8	Protection against access to live parts (IEC 60335-1)		**N/A**
B.8.2	Basic insulation between live parts and parts accessible during and after removal of the battery (IEC 60335-1)		**N/A**
B.11	Heating (IEC 60335-1)		**N/A**
B.11.7	Charging time for the battery (IEC 60335-1)		**N/A**
B.19.	Abnormal operation (IEC 60335-1)		**N/A**
B.19.101	Charging time at rated voltage (IEC 60335-1)		**N/A**
B.19.102	Short-circuiting of the battery, fully charged, for appliances having batteries which can be removed without the aid of a tool (IEC 60335-1)		**N/A**
B.19.103	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 (IEC 60335-1)		**N/A**
B.21	Mechanical strength (IEC 60335-1)		**N/A**
B.21.101	Appliances having pins for insertion into socket-outlets, checked according to procedure 2 of IEC 68-2-32 (IEC 60335-1)		**N/A**
	Mass of part not exceeding 250 g, 100 falls (IEC 60335-1)		**N/A**
	Mass of part exceeding 250 g, 50 falls (IEC 60335-1)		**N/A**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
B.22	Construction (IEC 60335-1)		**N/A**
B.22.3	See NOTE (IEC 60335-1)		**N/A**
B.25	Supply connection and external flexible cords (IEC 60335-1)		**N/A**
B.25.13.2	See NOTE (IEC 60335-1)		**N/A**
B.30	Resistance to heat, fire and tracking (IEC 60335-1)		**N/A**
B.30.2	For parts connected to the supply mains during the charging period, 30.2.3 applies (IEC 60335-1)		**N/A**
	For other parts, 30.2.2 applies (IEC 60335-1)		**N/A**

C	ANNEX C, AGEING TEST ON MOTORS		**N/A**
	Test carried out when doubt with regard to the classification of the insulating system of a motor winding	No motors	**N/A**

D	ANNEX D, ALTERNATIVE REQUIREMENTS FOR PROTECTED MOTOR UNITS (IEC 60335-1)		**N/A**
	Test of 19.7 carried out on a separate motor protector according to the specification (IEC 60335-1)		**N/A**

E	ANNEX E, MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		**P**
	Methods of measuring creepage distances and clearances, specified in 29.1, indicated in 10 different cases		**P**

F	ANNEX F, MOTORS NOT ISOLATED FROM THE SUPPLY MAINS AND HAVING BASIC INSULATION NOT DESIGNED FOR THE RATED VOLTAGE OF THE APPLIANCE		**N/A**
	Motors having a working voltage not exceeding 42 V, not being isolated from the supply mains, and having basic insulation not designed for the rated voltage of the appliance are tested according to this annex		**N/A**
	All clauses of this standard apply, unless otherwise specified in this annex		**N/A**
F.8	Protection against accessibility to live parts		**N/A**
F.11.8	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**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
F.16	Leakage current and electric strength		**N/A**
F.19	Abnormal operation		**N/A**
F.19.101	Appliance operated at rated voltage with each of the following defects:		**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 (IEC 60335-1/A2)		**N/A**
	- open circuit of the supply to the motor		**N/A**
	- open circuit of any shunt resistor during operation of the motor		**N/A**
F.22	Construction		**N/A**
F.22.101	Class I appliance 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**

G	ANNEX G, CIRCUIT FOR MEASURING LEAKAGE CURRENTS		**P**
	A suitable circuit for measuring leakage currents is shown		**P**

H	ANNEX H, (informative). SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30		**P**

J	ANNEX J, BURNING TEST		**N/A**
	The burning test is made in accordance with IEC 707, and method FH is used		**N/A**
	Category FH3 applies, the maximum burning rate being 40 mm/min		**N/A**

K	ANNEX K, GLOW-WIRE TEST		**P**
	The glow-wire test is made in accordance with IEC 695-2-1 (clause numbers between parentheses refer to IEC 695-2-1)		**P**
(4)	Description of test apparatus: the last paragraph before the note is replaced		**P**
(5)	Severities: the duration of application of the tip of the glow-wire to the specimen being (30 ± 1) s		**P**
(10)	Observations and measurements: item c) does not apply		**P**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
L	ANNEX L, BAD-CONNECTION TEST WITH HEATERS		**N/A**
	The bad-connection test with heaters is made in accordance with IEC 695-2-3 (clause numbers between parentheses refer to IEC 695-2-3)		**N/A**
(3)	General description of the test: additions concerning crimped connections		**N/A**
(4)	Description of test apparatus: replacements of some of the test specifications and the first paragraph of the note		**N/A**
(6)	Severities: the duration of application of the test power being (30 ± 1) min		**N/A**
(8)	Test procedure: subclause 8.6 replaced		**N/A**
(11)	Information to be given in the relevant specification: item h), the first dashed paragraph, does not apply		**N/A**
M	ANNEX M, NEEDLE-FLAME TEST		**N/A**
	The needle-flame test is made in accordance with IEC 695-2-2 (clause numbers between parentheses refer to IEC 695-2-2)		**N/A**
(4)	Description of the apparatus: the sixth paragraph is replaced		**N/A**
(5)	Severities: the duration of application of the test flame is (30 ± 1) s		**N/A**
(8)	Test procedure: some changes in the test specifications		**N/A**
(10)	Evaluation of the test results: addition in the test specification		**N/A**
N	ANNEX N, PROOF TRACKING TEST		**N/A**
	The proof tracking test is made in accordance with IEC 112 (clause numbers between parentheses refer to IEC 112)		**N/A**
(3)	Test specimen: the last sentence of the first paragraph does not apply		**N/A**
(5)	Test apparatus: some changes in the subclauses		**N/A**
(6)	Procedure: adjustments of the test specifications		**N/A**
P	ANNEX P, SEVERITY OF DUTY CONDITIONS OF INSULATING MATERIAL WITH RESPECT TO THE RISK OF TRACKING		**N/A**
	Normal duty conditions		**N/A**
	Severe duty conditions		**N/A**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
	Extra-severe duty conditions		**N/A**

Q	ANNEX Q, CAPACITORS		**N/A**
1.5	Terminology		**N/A**
1.6	Marking		**N/A**
4.1	Visual examination and check of dimensions		**N/A**
4.2	Electrical tests		**N/A**
4.12	Applicable		**N/A**
4.13	Applicable		**N/A**
4.17	Applicable		**N/A**
4.18	Applicable		**N/A**

R	ANNEX R, SAFETY ISOLATING TRANSFORMERS (IEC 60335-1/A2)		**P**
	Safety isolating transformers, tested with the appliance, comply with this standard and the following additional requirements		**P**
7	Marking and instructions		**P**
7.1	Transformers for specific use marked with: (See NOTE)		**P**
	- name, trademark or identification mark of the manufacturer or responsible vendor	DVE	**P**
	- model or type reference	See table 24.1	**P**
17	Overload protection of transformers and associated equipment		**P**
	The temperature limits specified for the windings do not apply to fail-safe transformers. Such transformers comply with subclause 15.5 of IEC 61558-1 (See NOTE)		**N/A**
22	Construction		**P**
22.501	Subclauses 19.1 and 19.1.2 of IEC 61558-1 are applicable		**P**
29	Creepage distances, clearances and distances through insulation	(see appended table)	**P**
29.1	The distances specified in table 13 of IEC 61558-1 items 2a, 2b and 3 apply. See NOTE		**P**

S	ANNEX S, SWITCHES (IEC 60335-1/A2)	**N/A**

IEC 60 335-1			
Clause	Requirement – Test	Result - Remark	Verdict
	Switches tested with the appliance comply with this standard and the following clauses of IEC 61058-1, as modified:	No switch	**N/A**
	- The tests of IEC 61058-1 carried out under the conditions occurring in the appliance		**N/A**
	- Unless otherwise specified, the tests are carried out on the switch incorporated in the appliance		**N/A**
	- Before being tested in the appliance, switches are operated 20 times without load		**N/A**
8	Marking and documentation		**N/A**
	Switches are not required to be marked except that incorporated switches shall be marked with the manufacturer's name or trade mark and the type reference. See NOTE.		**N/A**
13	Mechanism		**N/A**
	Applicable (See NOTE)		**N/A**
15	Insulation resistance and dielectric strength		**N/A**
15.1 and 15.2	Not applicable		**N/A**
15.3	Applicable for full disconnection and micro-disconnection (See NOTE)		**N/A**
17	Endurance		**N/A**
	Applicable. (See NOTE)		**N/A**
20	Clearances, creepage distances and distances through insulation		**N/A**
	Applicable for creepage distances and clearances for live parts of different potential only, as stated in table 18 for operational insulation, and across full disconnection and micro-disconnection		**N/A**

IEC 60 335-1

10	TABLE: input deviation measurements				P
input deviation dP of/at:	Irated (A)	I (A)	dI	required dI	remark
For Model GTH81081-6012-T2					
100V 50Hz	1,5	1,15	-23,3%	+20%	With normal load
100V 60Hz	1,5	1,10	-26,7%	+20%	With normal load
240V 50Hz	1,5	0,54	-64,0%	+20%	With normal load
240V 60Hz	1,5	0,53	-64,7%	+20%	With normal load
For Model GTH81081-6012-T2-CC					
100V 50Hz	1,5	1,17	-33,0%	+20%	With normal load
100V 60Hz	1,5	1,09	-27,3%	+20%	With normal load
240V 50Hz	1,5	0,55	-63,3%	+20%	With normal load
240V 60Hz	1,5	0,53	-64,7%	+20%	With normal load
For Model GTH81081-6020-0.9-T2					
100V 50Hz	1,5	1,10	-26,7%	+20%	With normal load
100V 60Hz	1,5	1,07	-28,7%	+20%	With normal load
240V 50Hz	1,5	0,51	-66,0%	+20%	With normal load
240V 60Hz	1,5	0,50	-66,7%	+20%	With normal load
For Model GTH81081-6020-0.9-T2-CC					
100V 50Hz	1,5	1,10	-26,7%	+20%	With normal load
100V 60Hz	1,5	1,06	-29,3%	+20%	With normal load
240V 50Hz	1,5	0,51	-66,0%	+20%	With normal load
240V 60Hz	1,5	0,50	-66,7%	+20%	With normal load
For Model GTH81081-6024-T2					
100V 50Hz	1,5	1,12	-25,3%	+20%	With normal load
100V 60Hz	1,5	1,07	-28,7%	+20%	With normal load
240V 50Hz	1,5	0,54	-64,0%	+20%	With normal load
240V 60Hz	1,5	0,53	-64,7%	+20%	With normal load
For Model GTH81081-6024-T2-CC					
100V 50Hz	1,5	0.94	-37,3%	+20%	With normal load
100V 60Hz	1,5	0.95	-36,7%	+20%	With normal load
240V 50Hz	1,5	0,48	-68,0%	+20%	With normal load
240V 60Hz	1,5	0,47	-68,7%	+20%	With normal load

IEC 60 335-1			
11.8	TABLE: temperature rise measurements		**P**
	t1 (°C) : °C	--	—
	t2 (°C) : °C	--	—
	test voltage (V) :	254 / 90	—
temperature rise dT of part/at:		dT (K)	max. allowed dT (K)
For Model GTH81081-6024-T2			
T1 winding		38 / 41	70
LF1 winding		27 / 68	80
LF3 winding		19 / 37	80
T1 core		32 / 34	--
PCB under Q1		30 / 42	90
PCB under D5		37 / 39	90
Capacitor C1		26 / 41	65
Capacitor CX1		22 / 30	60
Capacitor CY3		31 / 37	85
Opto-coupler IC2		34 / 38	60
Inlet		11 / 22	30
Output cord		16 / 18	40
Enclosure (inside)		19 / 21	--
Enclosure (outside)		11 / 12	45
Ambient		41°C / 41°C	--
For Model GTH81081-6024-T2-CC			
T1 winding		33 / 33	70
LF1 winding		22 / 43	80
LF3 winding		17 / 26	80
T1 core		27 / 26	--
PCB under Q1		26 / 30	90
PCB under D5		33 / 32	90
Capacitor C1		21 / 29	65
Capacitor CX1		18 / 23	60
Capacitor CY3		26 / 27	85
Opto-coupler IC2		29 / 30	60
Inlet		10 / 18	30
Output cord		18 / 17	40
Enclosure (inside)		17 / 17	--
Enclosure (outside)		12 / 9	45

IEC 60 335-1		
Ambient	41°C / 41°C	--
For Model GTH81081-6020-0.9-T2		
T1 winding	44 / 51	70
LF1 winding	33 / 65	80
LF3 winding	27 / 42	80
T1 core	38 / 43	--
PCB under Q1	40 / 51	90
PCB under D5	45 / 47	90
Capacitor C1	32 / 47	65
Capacitor CX1	28 / 37	60
Capacitor CY3	37 / 44	85
Opto-coupler IC2	40 / 45	60
Inlet	12 / 20	30
Output cord	19 / 21	40
Enclosure (inside)	26 / 29	--
Enclosure (outside)	18 / 20	45
Ambient	40°C / 41°C	--
For Model GTH81081-6020-0.9-T2-CC		
T1 winding	47 / 53	70
LF1 winding	33 / 62	80
LF3 winding	26 / 40	80
T1 core	42 / 46	--
PCB under Q1	40 / 50	90
PCB under D5	46 / 48	90
Capacitor C1	33 / 47	65
Capacitor CX1	27 / 35	60
Capacitor CY3	39 / 45	85
Opto-coupler IC2	42 / 47	60
Inlet	16 / 28	30
Output cord	28 / 29	40
Enclosure (inside)	24 / 28	--
Enclosure (outside)	16 / 19	45
Ambient	41°C / 40°C	--
For Model GTH81081-6012-T2		
T1 winding	49 / 52	70
LF1 winding	39 / 68	80

IEC 60 335-1		
LF3 winding	32 / 44	80
T1 core	48 / 50	--
PCB under Q1	44 / 53	90
PCB under D5	50 / 50	90
Capacitor C1	38 / 48	65
Capacitor CX1	33 / 40	60
Capacitor CY3	42 / 47	85
Opto-coupler IC2	46 / 48	60
Inlet	20 / 30	30
Output cord	27 / 28	40
Enclosure (inside)	28 / 29	--
Enclosure (outside)	20 / 21	45
Ambient	41°C / 41°C	--
For Model GTH81081-6012-T2-CC		
T1 winding	42 / 52	70
LF1 winding	31 / 70	80
LF3 winding	24 / 43	80
T1 core	41 / 49	--
PCB under Q1	36 / 50	90
PCB under D5	44 / 49	90
Capacitor C1	30 / 47	65
Capacitor CX1	26 / 36	60
Capacitor CY3	34 / 43	85
Opto-coupler IC2	39 / 45	60
Inlet	15 / 27	30
Output cord	27 / 30	40
Enclosure (inside)	20 / 24	--
Enclosure (outside)	12 / 14	45
Ambient	41°C / 41°C	--

	winding temperature rise measurements:	--
	insulation class :	—

temperature rise dT of winding:	R_1 (Ω)	R_2 (Ω)	dT (K)	max. dT (K)	insulation class
--	--	--	--	--	--
--	--	--	--	--	--

IEC 60 335-1

13.2	TABLE: leakage current measurements at operating temperature		**P**
	heating appliances: at 1,15 times rated input (W) :	--	—
	motor-operated and combined appliances: at 1,06 times rated voltage (V) :	254,4	—

leakage current I between:	I (mA)	max. allowed I (mA)
Input – output	0,16	0,25
Input - enclosure	0,01	0,25
--		

13.3	TABLE: electric strength measurements at operating temperature	**P**

test voltage applied across:	test voltage (V)	breakdown
Primary circuit – output	5300Vdc	No
Primary winding – secondary winding of T1	3750Vac	No
Seconday winding – core of T1	3750Vac	No
Primary circuit – enclosure	3750Vac	No
--		

16.2	TABLE: leakage current measurements		**P**
	at 1,06 times rated voltage (V) :	254,4	—

leakage current I between:	I (mA)	max. allowed I (mA)
Input – output	0,17	0,25
Input - enclosure	0,01	0,25
--		

16.3	TABLE: electric strength measurements	**P**

test voltage applied across:	test voltage (V)	breakdown
Primary circuit – output	5300Vdc	No
Primary winding – secondary winding of T1	3750Vac	No
Seconday winding – core of T1	3750Vac	No
Primary circuit – enclosure	3750Vac	No
--		

IEC 60 335-1			
17.	TABLE: overload protection, temperature rise measurements		**P**
17.1	at 1,06 or 0,94 times rated voltage (V) :	254,4	—
temperature rise dT of part/at:		dT (K)	max. allowed dT (K)
For model GTH81081-6024-T2			
LF1 winding		45	135
T1 winding		66	135
Output cord		42	55
Enclosure		37	60
For model GTH81081-6024-T2-CC			
LF1 winding		52	135
T1 winding		69	135
Output cord		43	55
Enclosure		37	60
For model GTH81081-6020-0.9-T2			
LF1 winding		47	135
T1 winding		79	135
Output cord		36	55
Enclosure		46	60
For model GTH81081-6020-0.9-T2-CC			
LF1 winding		52	135
T1 winding		77	135
Output cord		52	55
Enclosure		38	60
For model GTH81081-6012-T2			
LF1 winding		46	135
T1 winding		64	135
Output cord		41	55
Enclosure		31	60
For model GTH81081-6012-T2-CC			
LF1 winding		51	135
T1 winding		67	135
Output cord		51	55
Enclosure		34	60

IEC 60 335-1			
19.13	TABLE: fault condition tests		**P**
	ambient temperature (°C) .....:	25 ℃	—
	model/type of power supply .....:	GTH81081-6024-T2	—
	manufacturer of power supply .....:	Dee Van	—
	rated markings of power supply .....:	See page 4	—

No.	Component no.	Fault	Test voltage (V)	Test time	Fuse no.	Fuse current (A)	Result
For model GTH81081-6024-T2							
1	BD1	s-c	240	1 s	F1	--	Fuse opened, no hazards
2	C1	s-c	240	1 s	F1	--	Fuse opened, no hazards
3	D1	s-c	240	1 min	F1	0,48	Normal operation, no hazards
4	C2	s-c	240	3 min	F1	0,48	Normal operation, no hazards
5	D7	s-c	240	5 min	F1	0,50	Normal operation, no hazards
6	D2	s-c	240	1 s	F1	0,06	Circuit protected, no hazards
7	Q1 G-S	s-c	240	1 s	F1	--	Unit shut down, no hazards
8	Q1 D-S	s-c	240	1 s	F1	--	Fuse opened, Q1, R19A and R19B damaged, no hazards
9	Q1 G-D	s-c	240	1 s	F1	0,05	Fuse opened, Q1 damaged, no hazards
10	T1 pin 6-4	s-c	240	1 s	F1	0,05	Circuit protected, no hazards
11	T1 pin S-F	s-c	240	21s	F1	--	Fuse opened, Q1, D5 damaged, no hazards
12	R19A	s-c	240	1 s	F1	--	Fuse opened, Q1 damaged, no hazards
13	R19A	o-c	240	1 min	F1	0,48	Normal operation, no hazards
14	ZD3	s-c	240	1 s	F1	0,06	Circuit protected, no hazards
15	C4	s-c	240	1 s	F1	0,06	Circuit protected, no hazards
16	U4 pin1-2	s-c	240	1 s	F1	0,06	Circuit protected, no hazards
17	U4 pin 3-4	o-c	240	2.2 hr	F1	0,62	Steady state, output current 2.8A. No hazards. T1 winding: 114.5℃

IEC 60 335-1							
18	D5	s-c	240	5 s	F1	12,95	Fuse opened, Q1 damaged, no hazards
19	Output	s-c	240	1 s	F1	0,05	Unit shut down, no hazards
For model GTH81081-6024-T2-CC							
20	Output	s-c	240	1 s	F1	0,05	Unit shut down, no hazards
For model GTH81081-6020-0.9-T2							
21	Output	s-c	240	1 s	F1	0,05	Unit shut down, no hazards
For model GTH81081-6020-0.9-T2-CC							
22	Output	s-c	240	1 s	F1	0,05	Unit shut down, no hazards
For model GTH81081-6012-T2							
23	Output	s-c	240	1 s	F1	0,06	Unit shut down, no hazards
For model GTH81081-6012-T2-CC							
24	Output	s-c	240	1 s	F1	0,06	Unit shut down, no hazards
Note(s): s-c for short circuit; o-c for open circuit							

24.1	TABLE: components				**P**
object / part No.	manufacturer / trademark	type / model	technical data	standard	mark(s) of conformity)
Transformer (T1)	Dee Van Enterprise Co., Ltd.	90E266012-00F; 90E266016-00F; 90E266020-00F	Pri. Winding (pin 3-1): Φ0,45x1x35Ts Auxiliary primary winding(pin 6-4): Φ0,16x4x6Ts Sec. Winding (pin S-F): for 90E266012-00F: Φ0,65x3x6Ts 90E266016-00F: Φ0,60x2x8Ts; 90E266020-00F: Φ0,50x2x10Ts Class B	IEC/EN 60335-1	Tested with appliance
Primary line choke (LF3)	Dee Van Enterprise Co., Ltd.	30R200010-00F	Pin a-c: Φ0,60x1x10Ts Pin b-d: Φ0,60x1x10Ts 130°C	IEC/EN 60335-1	Tested with appliance
Triple insulated wire (secondary winding of T1, winding of a-c of LF3	Furukawa Electric Co., Ltd.	TEX-B	130°C	IEC/EN 60950	VDE

IEC 60 335-1					
Primary line choke (LF1)	Dee Van Enterprise Co., Ltd.	30R022058-00F	Pin a-d: Φ0,45x1x60Ts Pin b-c: Φ0,45x1x60Ts 130°C	IEC/EN 60335-1	Tested with appliance
Fuse (F1)	Bel	MRT	T3,15AL; 250Vac; Φ 8,5x8mm	IEC/EN 60127	VDE
(Alternative)	SCHURTER	MST250	T3,15AL; 250Vac; Φ 8,5x8mm	IEC/EN 60127	VDE
(Alternative)	Wickmann	372	T3,15AL; 250Vac; Φ 8,5x8mm	IEC/EN 60127	VDE
Resistor between L/N (R1A; R1B; R1C)	--	--	1MΩ ± 5%; 1/4W	IEC/EN 60335-1	Tested with appliance
Bridging capacitor (CY3, CY4), Y2 type	Success	SB	Max. 3300pF; Min. 250VAC; 30/125/56	IEC 60384-14	VDE
(Alternative)	Success	SE	Max. 3300pF; Min. 250VAC; 30/125/56	IEC 60384-14	VDE
(Alternative)	TDK	CD	Max. 3300pF; Min. 250VAC; 25/125/21	IEC 60384-14	VDE
(Alternative)	TDK	CS	Max. 3300pF; Min. 250VAC; 25/125/21	IEC 60384-14	VDE
(Alternative)	Murata	KX, KY	Max. 3300pF; Min. AC250V; 25/125/21	IEC 60384-14	VDE
(Alternative)	JYA-NAY	JN, JY	Max. 3300pF; Min. AC250V; 25/125/21/C	IEC 60384-14	VDE
Photo Coupler (PC1)	Sharp	PC817; PC123	Cr. =Min. 4,8mm; Dti. > 0,4mm	VDE 0884 IEC/EN 60950	VDE
(Alternative)	Lite-on	LTV-817	Cr. =Min. 5,2mm; Dti. = 0,8mm	VDE 0884 IEC/EN 60950	VDE
(Alternative)	Cosmo	K1010; KP1010	Cr. =Min. 5,3mm; Dti. = 0,5mm	VDE 0884 IEC/EN 60950	VDE
(Alternative)	Q.T.C Corporation	H11A817B	Cr. > 7,0mm; Dti. > 1mm	VDE 0884 IEC/EN 60950	VDE

IEC 60 335-1					
X-Cap. (CX1)	Chiefcon	CKX	Max. 0,47µF; Min. 275VAC; 40/100/21/C; X2 type	IEC 60384-14	VDE
(alternative)	Iskra	KNB1560; KNB1530	Max. 0.47µF; Min. 275VAC; 40/100/21/C; X2 type	IEC 60384-14	VDE
(alternative)	Carli	MPX	Max. 0.47µF; Min. 275VAC; 40/100/21/C; X2 type	IEC 60384-14	VDE
(Alternative)	UTX	HQX	Max. 0.47µF; Min. 275VAC; 25/100/21/C; X2 type	IEC 60384-14	VDE
(alternative)	PILKOR	PCX2 335M	Max. 0.47µF; Min. 275VAC; 40/100/21/C; X2 type	IEC 60384-14	ENEC
X-Cap. (CX2)	Chiefcon	CKX	Max. 0.15µF; Min. 275VAC; 40/100/21/C; X2 type	IEC 60384-14	VDE
(Alternative)	UTX	HQX	Max. 0.15µF; Min. 275VAC; 25/100/21/C; X2 type	IEC 60384-14	VDE
(alternative)	PILKOR	PCX2 335M	Max. 0.15µF; Min. 275VAC; 40/100/21/C; X2 type	IEC 60384-14	ENEC
(alternative)	Iskra	KNB1560; KNB1530	Max. 0.15µF; Min. 275VAC; 40/100/21/C; X2 type	IEC 60384-14	VDE
(alternative)	Carli	MPX	Max. 0.15µF; Min. 275VAC; 40/100/21/C; X2 type	IEC 60384-14	VDE
Storage Cap. (C1)	Various	Various	47-120µF; Min. 400VDC; 105°C	--	--
Inlet	SUNFAIR	S-01	2,5A; 250VAC	IEC/EN 60320-1	VDE
(Alternative)	Rong Feng	RF180	2,5A; 250VAC	IEC/EN 60320-1	VDE

IEC 60 335-1					
(Alternative)	Sokao	SO-222	250V, 2.5A	IEC/EN 60320-1	VDE
(Alternative)	Bei Er Jia	ST-A03-005	2.5A, 250VAC	IEC/EN60320-1	FIMKO
Enclosure	GE Plastics Co., Ltd.	SE1	PPE+PS; V-1; 105°C; thickness: min. 2,0mm	--	UL
Insulation tape	Four Pillars (SYMBIO)	35660Y	130°C	--	UL
Output cord	Various	SPT-1	80°C; min. 18AWG	--	UL
Heat shrinkable tube	Various	Various	125°C; 600V; VW-1	--	UL
Extruded tube	Various	Various	105°C; 300V; VW-1	--	UL
PCB	Various	Various	V-1 or better; min. 130°C	--	UL

IEC 60 335-1									
29.1	TABLE: creepage distance and clearance through insulation measurements								**P**
creepage (cr) and clearance (cl) distance (mm):		Class III appliances		other appliances, U working:					remark
				< 130 V		130-250 V		250-440 V	
		cr	cl	cr	cl	cr	cl	cr	cl	
between live parts of different polarity:									P
- if protected against deposition of dirt		1,0	1,0	1,0	1,0	2,0	2,0	2,0	2,0	N/A
- if not protected against deposition of dirt		2,0	1,5	2,0 ***3,1***	1,5 ***3,1***	3,0 ***3,1***	2,5 ***3,1***	4,0	3,0	P
- if lacquered or enamelled windings		1,0	1,0	1,5	1,5	2,0	2,0	3,0	3,0	N/A
- for positive temperature coefficient (PTC) resistors including their connecting wires, if protected against deposition of moisture or dirt		-,-	-,-	1,0	1,0	1,0	1,0	-,-	-,-	N/A
between live parts and other metal parts over basic insulation:										N/A
- if protected against deposition of dirt:										N/A
. if of ceramic material or pure mica and the like		1,0	1,0	1,0	1,0	2,5	2,5	-,-	-,-	N/A
. if of other material		1,5	1,0	1,5	1,0	3,0	2,5	-,-	-,-	N/A
- if not protected against deposition of dirt		2,0	1,5	2,0 ***4,3***	1,5 ***4,3***	4,0 ***4,3***	3,0 ***4,3***	-,-	-,-	P
- if the live parts are lacquered or enamelled windings		1,0	1,0	1,5	1,5	2,0	2,0	-,-	-,-	N/A
- at the end of tubular sheathed-type heating elements		-,-	-,-	1,0	1,0	1,0	1,0	-,-	-,-	N/A
between live parts and other metal parts over reinforced insulation										P
- if the live parts are lacquered or enamelled windings		-,-	-,-	6,0 ***10,0***	6,0 ***10,0***	6,0 ***10,0***	6,0 ***10,0***	-,-	-,-	P
- for other live parts		-,-	-,-	8,0 ***8,1***	8,0 ***8,1***	8,0 ***8,1***	8,0 ***8,1***	-,-	-,-	P
between metal parts separated by supplementary insulation		-,-	-,-	4,0	4,0	4,0	4,0	-,-	-,-	N/A
between live parts in recesses in the mounting face of the appliance and the surface to which it is fixed		2,0	2,0	6,0	6,0	6,0	6,0	-,-	-,-	N/A

National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict

APPENDIX	Argentina National Differences according to CB Bulletin No. 109B, December 2005 (IEC Publication 60335-1:1991)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N=Not applicable. Placed in the column to the right.			
	Plug must comply with relevant IRAM Standard (IRAM 2063 Class II appliance and IRAM 2073).	Inlet used	**N/A**
	Class 0 and Class 01 are not allowed.	Class II appliance.	**P**
	Ratings 220 Vac – 50 Hz.	100-240V 56/60Hz	**P**
	Residual current breakers with external power are not allowed.	No residual current breakers	**P**

National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict
APPENDIX	Japanese National Differences according to CB Bulletin No. 109B, December 2005 (IEC Publication 60335-1:1991)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N=Not applicable. Placed in the column to the right.			
6.1	Addition: Note – Class 0 is allowed for only the appliances of rated voltage not exceeding 150V and indoor use.	Class II appliance	**N/A**
11.8 Table 3	Delete the reference to E27. Replace the second sentence of footnote 3) by the following, In other case, they shall comply with the requirements as shown in Attachment 1. Addition in footnote 4): Materials for which temperature limits are not specified in the table, but which comply with the requirements as shown in Attachment 1 are considered to be acceptable. Replacement of footnote 5): The temperature rise has to be determined in order that the tests of Clause 30.1 can be carried out.		**P**
16.2	Replacement of 2nd paragraph: The test voltage is 1.06 times rated voltage.		**P**
19.12	Addition: Note4 – If the fusing characteristics are differenet from IEC 60127, those characteristics are taken into consideration.		**N/A**
22.31	Addition to note as 5th indent: Hooking the wire into a hole in the terminal before soldering is considered to be a suitable means for keeping clearance and creepage distances over basic insulation.		**N/A**
25.8, Table 9	Addition to footnote 1): In this case, a fuse with the rated current not exceeding 3A and the rated breaking capacity at least 500A has to be incorporated inside the plug.		**N/A**
26.1.1	Addition after 2nd paragraph: paragraph, Twist-on connecting devices for clamping copper conductors shall not be used. Figure 6: Replace “ N ” by the earth pole. Figure 7: Replace “ N ” by the earth pole. Figure 8: Replace “ N ” by the earth		**N/A**
Annex JA	Addition: Annex JA (normative) Uniformity of Heat Sensing Wires If heat sensing wires are used in appliances to prevent excessive temperature rise, those heat sensing wires shall comply with the following table after the measurement specified		**N/A**

National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict
	thereafter: Mean operating temperature ( ) 1) Deviation ( ) 120 >120 7 10 Heat Sensing System **Measuring procedure** A system in which the heat sensing wires are short circuited due to melting of the insulation between the said wires or the resistance between the said wires decreases significantly due to the said melting. Divide the whole length of heat sensing wire evenly into 10, cut each division to a length of 20 cm excluding terminal treatment parts at both ends to prepare specimen heat sensing wires (place the said length at one measurement point in a thermostatic chamber and carry out the measurement for a heat sensing wire which will cause error in the operating temperature due to cutting) mount the specimen to the device shown in Fig.1, apply the rated voltage and pass the rated current of the circuit to which the heat sensing wire is connected, and measure the operating temperature of specimen while raising the temperature of specimen at a rate of 1 per minute by externally heating it. A system which utilizes change in electrical characteristics (resistance, capacitance, impedance, etc. the same meaning applies in this Table), or utilizes change in electric characteristics of heat sensing component wire itself. (1) Divide the whole length of heat sensing wire evenly into 10 place each division into a thermostatic chamber at a temperature equal to the nominal operating temperature of the heat sensing wire 2 for 1 h, and then measure the electrical characteristics in the chamber. (2) Take out a specimen which shows a characteristic value most close to the average of 10 measured values in the procedure of (1), maintain it in a thermostatic chamber at the nominal operating temperature of the heat sensing wire plus (15 2) and also minus (-15 2) each for 1 h, and then measure the electrical characteristics in the chamber. **(3) Prepare a graph showing the relation between the temperature and the electrical characteristic value from the data obtained in (1) and (2) as illustrated in Fig.2, and convert the dispersion of the electrical**		

National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict
	characteristic value into that of the temperature. Note: Impedance measurement is to be carried out by means of an a.c. power.		

National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict

APPENDIX	Korea National Differences according to CB Bulletin No. 109B, December 2005 (IEC Publication 60335-1:1991)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N=Not applicable. Placed in the column to the right.			
Limitations	(Voltage Rating) As national supply voltage is subject to be increased to 220V, only is to be allowed to obtain type approval in Korea. Either an appliance rated 110V or 220/110V is not allowed. When an appliance is supplied in Korea, it shall be set to and marked with 220V. (Frequency) Only appliances having supply frequency of 60Hz or a frequency range including 60Hz are accepted. When an appliance is supplied in Korea, it shall be set to and marked with 60Hz. (Instruction) Instruction manuals and appliance marking related safety, including nameplate shall be in Korean or graphical symbols in IEC Pub. 417. More details are available from KTL (c/o KTL) on request.	100-240V	**P**
14	Addition Radio frequency Interference The apparatus shall comply with the relevant CISPR requirement.		**P**
24.4	Plugs for the connection of the apparatus to the supply main shall comply with the Korean requirement(KSC 8305).	Inlet used	**N/A**
24.5	Plugs for the connection of the apparatus to the supply main shall comply with the Korean requirement(KSC 8305).	Will be evaluated when national approval	**N/A**

National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict
APPENDIX	Group National Differences according to CB Bulletin No. 109B, December 2005 (IEC Publication 60335-1:1991)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N=Not applicable. Placed in the column to the right.			
Foreword	Delete.		**N/A**
Introduction	Delete the last paragraph. Add: The essential safety requirements of the following European directives, which could be applicable to household and similar appliances, are covered by this standard: - 73/23/EEC - Low voltage directive; - 89/392/EEC - Machinery directive; - 89/106/EEC - Construction products directive. This standard is a product-family standard dealing with the safety of household and similar electrical appliances and takes precedence over horizontal and generic standards covering the same subject.		**P**
2.7.2	Add the following note: Z1 A part is not considered to be detachable if, according to the instructions, it has to be removed with the aid of a tool in order to discard batteries before scrapping the appliance.	No batteries	**N/A**
3	General requirements Delete notes 1 and 2.		**N/A**
4.2	Add to note 1: If the tests of 24.1.3 are carried out, three switches or three additional appliances are needed.	No switch	**N/A**
4.8.1	Replace the second paragraph by: Appliances which are not marked with rated frequency are tested with 50 Hz. Appliances which are marked with a frequency range of 50 Hz to 60 Hz are tested with 50 Hz or 60 Hz, whichever is more unfavourable.	50/60 Hz	**P**
6.1	Delete "Class 0, Class 01".	Deleted	**P**
7.1	Add to the requirement: The marking of the rated voltage or rated voltage range shall cover - 230 V for single-phase appliances; - 400 V for multi-phase appliances.	100-240V	**P**

National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict
7.12	Add: The instructions for appliances incorporating batteries which contain materials which are hazardous to the environment, shall state that the batteries must be removed from the appliance before it is scrapped and that they are disposed of safely. The instructions shall state that the appliance must be disconnected from the supply and give details how to remove the batteries. NOTE Z1 - Refer to annex ZA.	No batteries	**N/A**
7.12.2	Add: If a stationary appliance is provided with a supply cord and a plug, the instructions shall state that the appliance must positioned so that the plug is accessible. NOTE Z1 - This requirement does not apply if the appliance incorporates other means for disconnection from the supply.	Not stationary appliance	**N/A**
8.1.2	Add: NOTE Z1 - Appliance outlets are not considered to be socket-outlets.		**N/A**
8.1.5	Replace the test specification by: Compliance is checked by inspection and by the test of 8.1.1.		**N/A**
8.2	Add: Appliances having batteries which, according to the instructions for use, may be replaced by the user need only have basic insulation between live parts and the inner surface of the battery compartment. If the appliance can be operated without the batteries, double insulation or reinforced insulation is required.		**N/A**
11.8	Add a third note after the table: Z1 The temperature rise limit for metal applies to parts having a metal coating at least 0,1 mm thick and to metal parts having a plastic coating less than 0,3 mm thick.		**N/A**
15.1	Add: NOTE Z1 - Before inspection, the enclosure of the appliance is dried and care has to be taken when dismantling to avoid displacing any water.	IPX0	**N/A**
19.5	Add the following note: Z1 Refer to annex ZA.		**N/A**
19.7 and 19.9	Delete note 2.		**N/A**
19.10	Replace the second paragraph by: During the test, parts shall not be ejected from the appliance.	No motor	**N/A**
19.11.2	Add: NOTE Z1 - Refer to annex ZA.		**N/A**

National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict
22.2	Add: NOTE Z1 - Refer to annex ZA.		**N/A**
22.32	Add the following note: Z1 Refer to the footnote1.		**N/A**
22.40	Replace the requirement by: Motor-operated appliances and combined appliances which are intended to be moved while in operation or which have accessible moving parts, shall be fitted with a switch to control the motor. The actuating member of this switch shall be easily visible and accessible.		**N/A**
22.Z1	Add: Appliances are not allowed to have an enclosure which is shaped and decorated so that the appliance is likely to be treated as a toy by children. Compliance is checked by inspection. NOTE - Examples are enclosures representing animals or persons or resembling scale models.		**P**
22.Z2	Fully halogenated chlorofluorocarbons (CFC's) shall not be used. Compliance is checked by inspection.		**N/A**
23.5	In the first paragraph of the test specification replace "insulation" by "basic insulation" (in two places). Add the following note: Z1 For Class II constructions, the requirements for supplementary insulation and reinforced insulation apply except that the sheath of a cord complying with IEC 227 or IEC 245 may provide supplementary insulation.	Inlet used	**N/A**
24.1	Add: NOTE Z1 - Unless otherwise specified, the requirements of clause 29 apply between live parts of components and accessible parts of the appliance.		**P**
24.1.1	Replace the first paragraph by: Capacitors likely to be permanently subjected to the supply mains voltage and used for radio interference suppression or for voltage dividing, shall comply with annex ZC. Replace "IEC 328" by "IEC 1058".		**P**
24.1.2	Add to the list of controls: - energy regulators 3 000 - timers 10 000		**N/A**

National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict
24.1.3	Replace by: For switches, the test of subclause 17.2.7 of IEC 1058-1 is carried out for 10 000 cycles of operation. Switches which have not been separately tested and found to comply with IEC 1058-1 under conditions covering those occurring in the appliance, shall comply with annex ZE. Switches intended for operation under no load and which can be operated only with the aid of a tool are not subjected to the tests of clause 17 of IEC 1058-1. This applies also for such switches operated by hand which are interlocked so that they cannot be operated under load by switches without this interlock are subjected to the test of subclause 17.2.7 for 100 cycles of operation. NOTE - The test of subclause 17.2.7 of IEC 1058-1 is only carried out on switches required by this standard.	No switch	**N/A**
25.3	Delete the third dashed item.		**N/A**
25.4	Delete from table 8 the note with its reference and the values in parentheses.		**N/A**
25.6	Add: Supply cord of single-phase portable appliances having a rated current not exceeding 16 A shall be provided with a plug complying with the following standard sheets of IEC 83: - for class I appliances standard sheet C2b, C3b or C4; - for class II appliances standard sheet C5 or C6. NOTE Z1 - Refer to annex ZA.	Inlet used	**N/A**
25.7	Add after the second dashed item: - ordinary polychloroprene sheathed flexible cord (code designation 245 IEC 57); Add to the notes: Z1 The harmonized code designations corresponding to the IEC types are given in annex ZF.		**N/A**
25.8	Add: NOTE Z1 - Refer to annex ZA.		**N/A**
27.2	Replace "IEC 685-2-1" by "IEC 998-2-2" (in two places).		**N/A**

National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict
27.Z1	The printed conductors of printed circuit boards shall not be used to provide earthing continuity in hand-held appliances. 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 requirement of 27.5 for each circuit; - the material of the printed circuit board complies with IEC 249-2-4 or IEC 249-2-5. Compliance is checked by inspection and by the relevant tests.	Not hand-held appliance	**N/A**
28.1	Add: The test is not carried out on screws and nuts transmitting contact pressure for earthing continuity provided at least two screws or nuts are used.		**N/A**
28.2	Add: This requirement does not apply to electrical connections in circuits carrying a current not exceeding 0,5 A.		**N/A**
29.1	Add after note 6: Z1 The values specified in the table do not apply to creepage distances and clearances over reinforced insulation of appliance outlets, provided that the distance is at least 5,7 mm. Add: NOTE Z2 - refer to the footnote2		**N/A**
30	Delete the first paragraph of the note.		**N/A**
30.2.3	In the first paragraph, replace "750 °C" by "850 °C". Delete the text after note 2.	PCB; bobbin	**P**
Annex D	Delete the text and replace by "-Void-".		**N/A**
Annex H	In the box "glow-wire test, 750 °C annex K", replace "750 °C".		**P**
Annex ZC	CAPACITORS The following clauses and subclauses of IEC 384-14 apply to capacitors likely to be permanently subjected to the supply mains voltage and used for radio interference suppression or for voltage dividing, with the following modifications.		**N/A**
4.3	This subclause is applicable. Capacitors of Class X are tested as capacitors of Class X2.		**N/A**
4.4	This subclause is applicable.		**N/A**
6.1	Items a) and b) of this subclause are applicable.		**N/A**

National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict
8.1	Table II, group 0, group 2 and group 3 are applicable as follows: - group 0: subclauses 10.1, 10.2, 11.1 and 11.3 - group 2: subclause 12.10 - group 3: subclause 12.11		**N/A**
10.1	This subclause is applicable.		**N/A**
10.2	This subclause is applicable for the marking required by 6.1 a) and b).		**N/A**
11.1	This subclause is applicable.		**N/A**
11.3	In this subclause only "Table VI" applies and the climatic category is -/-/21. The values for test A apply. However for capacitors in heating appliances the values for test B or C apply.		**N/A**
12.10	This subclause is applicable. NOTE: Only insulation resistance and voltage proof are checked (see table X).		**N/A**

National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict
12.11	This subclause is applicable together with its subclauses 12.11.2 and 12.11.6 modified as follows: Add before the first paragraph: Capacitors are subjected to an impulse voltage test if they are incorporated: - in appliances liable to be operated while unattended; - in other appliances where they are liable to remain under electric stress while the on-off switch or control is in the off position, irrespective of the position of the plug in the socket outlet. The wave form of the impulse is 1,2/50 with a peak value of 2,5 kV. Alternatively, the test may be carried out with an impulse voltage having any front time but with a time to half value not exceeding 100 _s. The peak value of the impulse voltage is adjusted by a suitable means such as an impulse proof capacitor of low inductance and having a capacitance similar to that of the capacitor under test. Notes to table 13; add the following text to notes 4 and 5: The distance of 1,0 mm is allowed if the following two conditions are met: - the isulating material at the end of the tubular sheathed element is track resistant (CTI,250). This material could be the magnesium oxide powder or sealing material; - the environment at the end of the tubular sheathed element is protected against the deposition of dirt by a cover. This cover is to be close to the end of the element but not necessarily in contact with it. . In general the enclosure of the appliance does not provide sufficient protection. . If a cap or a plug of ceramic or silicon rubber is fitted to the end of the element, the normal creepage distances and clearances apply to the outer surface of the cap or plug. The impulse voltage is applied 3 times with at least 1 s between the impulses. There shall be no flash-over and no visible damage. NOTE: When capacitors are used for voltage dividing purposes, the impulse voltage is applied to the terminals of the appliance.		**N/A**

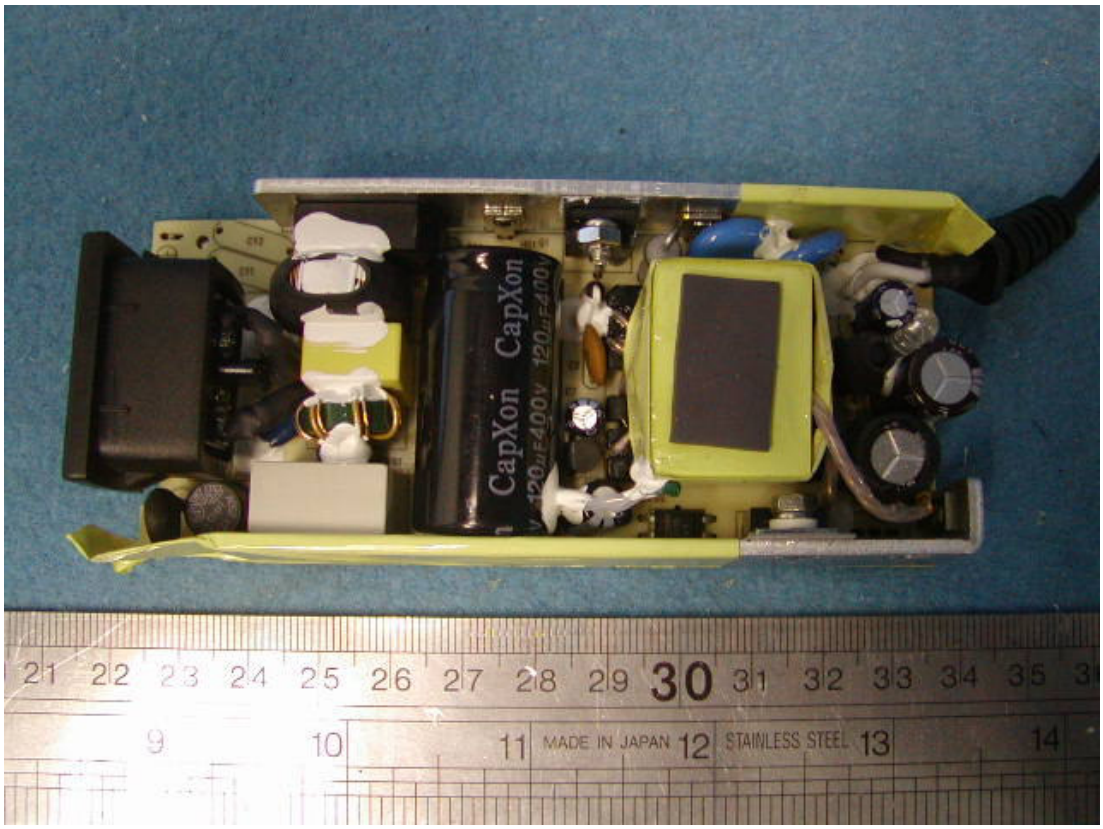
National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict
12.11.6	Add: NOTE: Only insulation resistance and voltage proof are checked (see table XI) together with a visual examination to ensure that there is no visible damage.		**N/A**
Annex ZD	SAFETY ISOLATING TRANSFORMERS Safety isolating transformers which are tested with the appliance shall comply with this standard and the following additional requirements.		**P**
7.1	Transformes for specific use shall be marked with: - name, trademark or identification mark of the manufacturer or responsible vendor; - model or type reference NOTE: The definition of transformers for specific use is given in EN 60742		**P**
17	The temperature limits specified for the windings do not apply to fail-safe transformers. However, such transformers shall comply with subclause 14.5 of EN 60742. NOTE: The definition of fail-safe transformers is given in EN 60742.		**N/A**
22.501	Subclause 8.6 of EN 60742 is applicable.		**N/A**
29.1	The distances specified in table XV of EN 60742 items 1a, 1c and 2 apply. NOTE: The values stated for normal pollution are applicable.		**N/A**
Annex ZE	SWITCHES Switches which are tested with the appliance shall comply with this standard and with the following clauses of IEC 1058-1, as modified: The tests of IEC 1058-1 are carried out under the conditions occuring in the appliance. Unless otherwise specified, the tests are carried out on the switch incorporated in the appliance. Before being tested in the appliance, switches are operated 20 times without load.		**N/A**
8	Switches are not required to be marked except that incorporated switches shall be marked with the manufacturer's name or trade mark and the type reference. NOTE: An incorporated switch is a switch which can be tested separately from the appliance.		**N/A**
13	This clause is applicable. NOTE: The tests may be carried out on a separate sample.		**N/A**
15.1 and 15.2	These are not applicable.		**N/A**

National Deviation			
Clause	Requirement – Test	Result - Remark	Verdict
15.3	This is applicable for full disconnection and micro-disconnection. NOTE: This test is carried out immediately after the humidity test of 15.3 of EN 60335-1.		**N/A**
17	This clause is applicable. Compliance is checked on three separate appliances or switches. At the end of the tests, the temperature rise of the terminals shall not have increased by more than 30 K. NOTE: The text of the second dashed item of 17.3 is deleted.		**N/A**
20	This clause is applicable for creepage distances and clearances for live parts of different potential only, as stated in table 18 for operational insulation and across full disconnection and micro-disconnection.		**N/A**

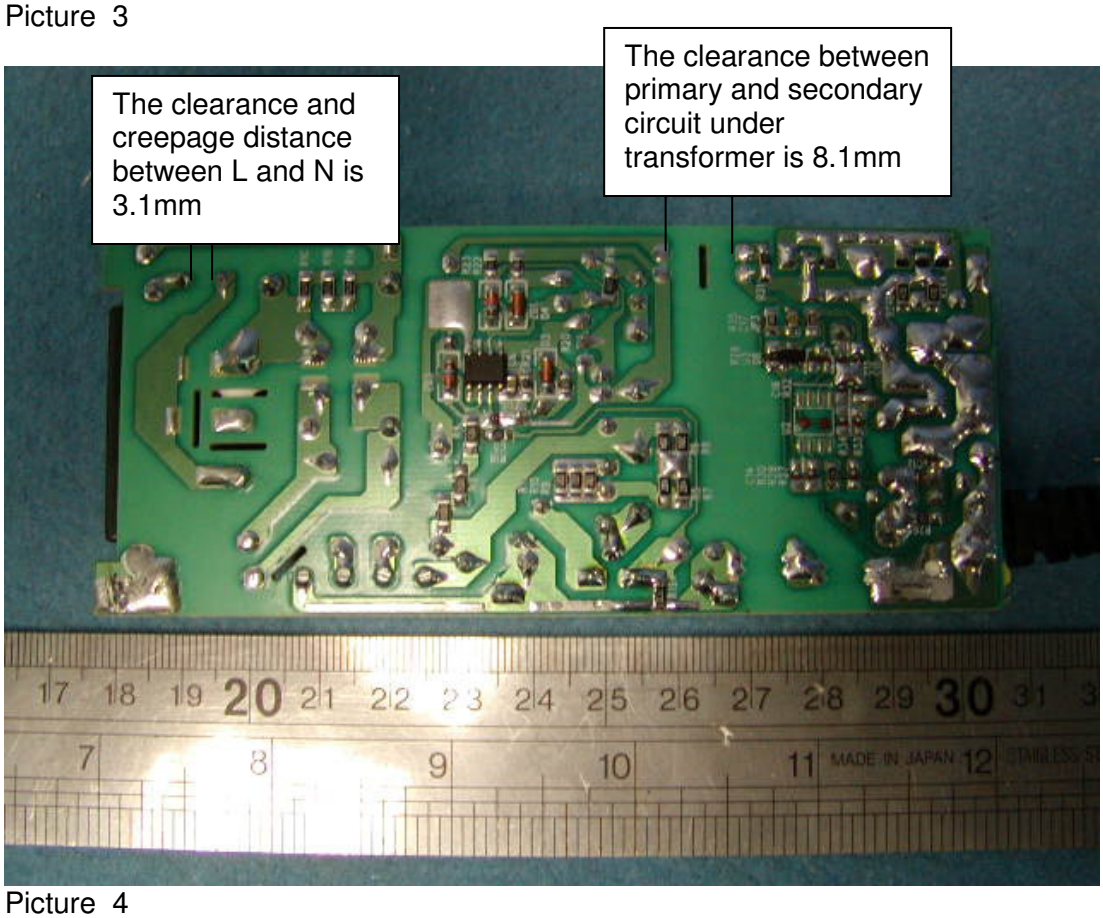
--End of report--

Picture 1

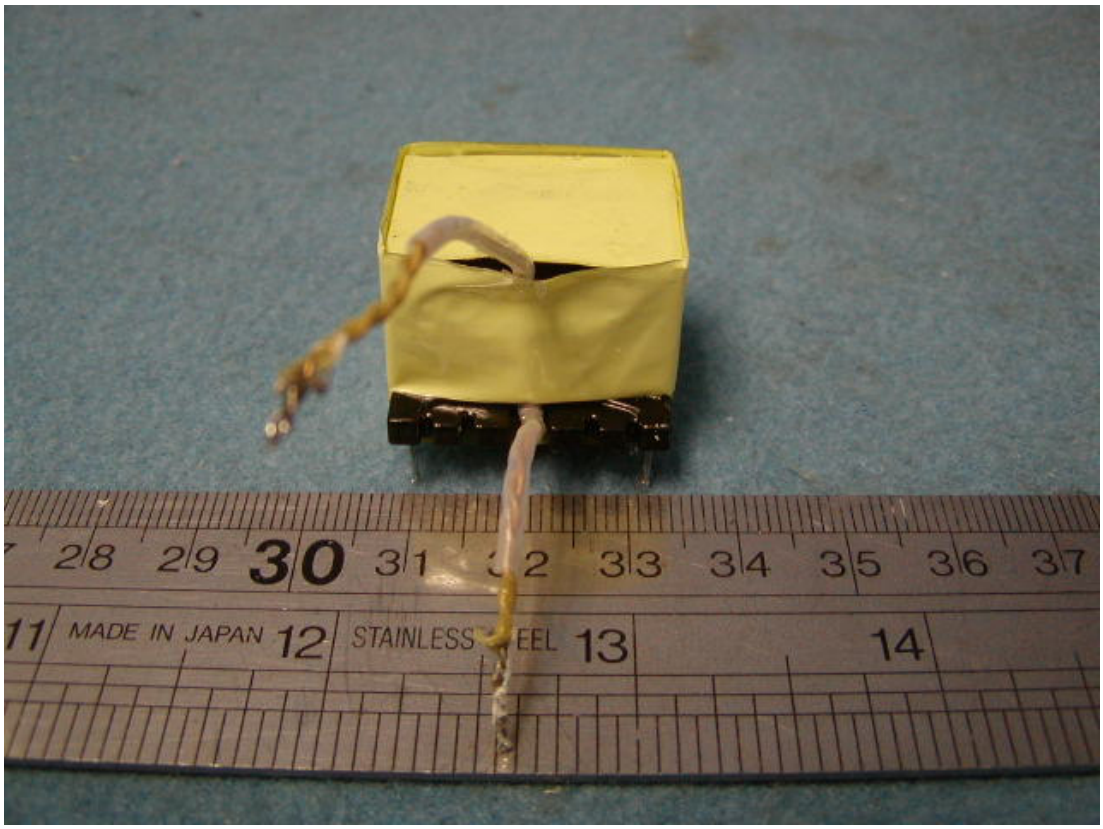
Picture 2



Picture 3



Picture 4



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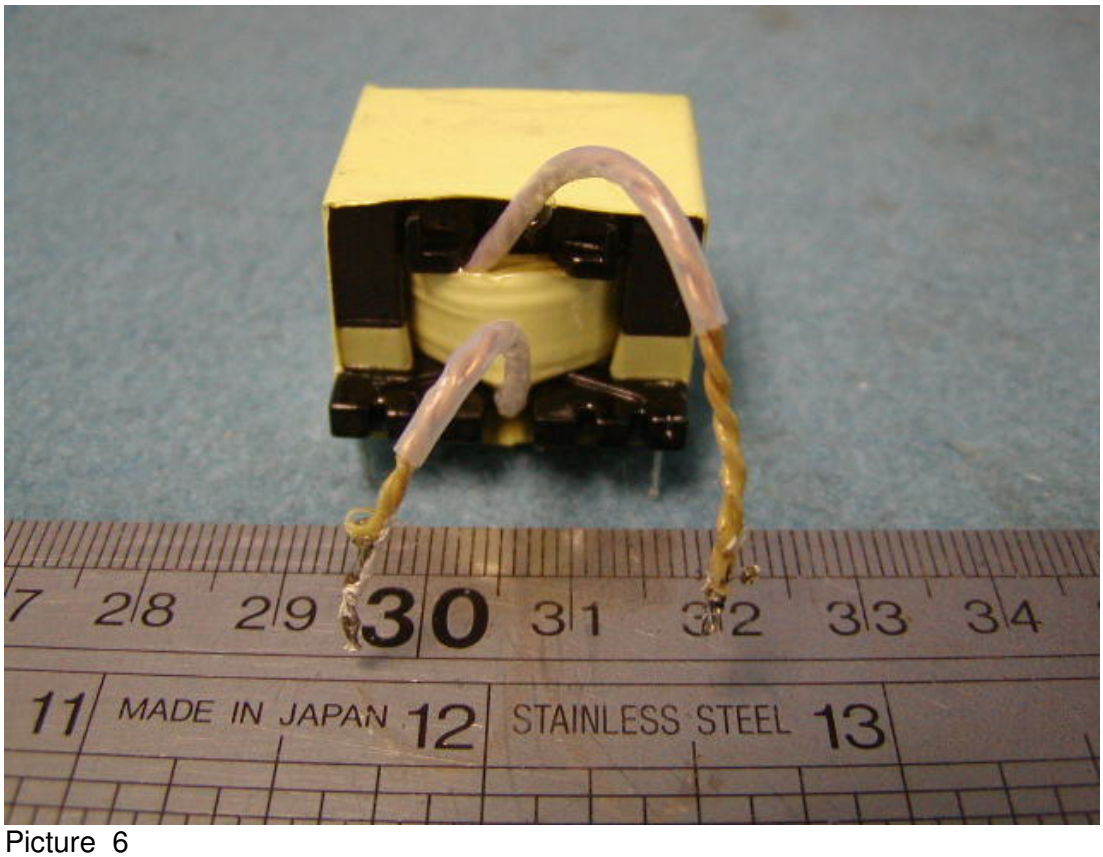
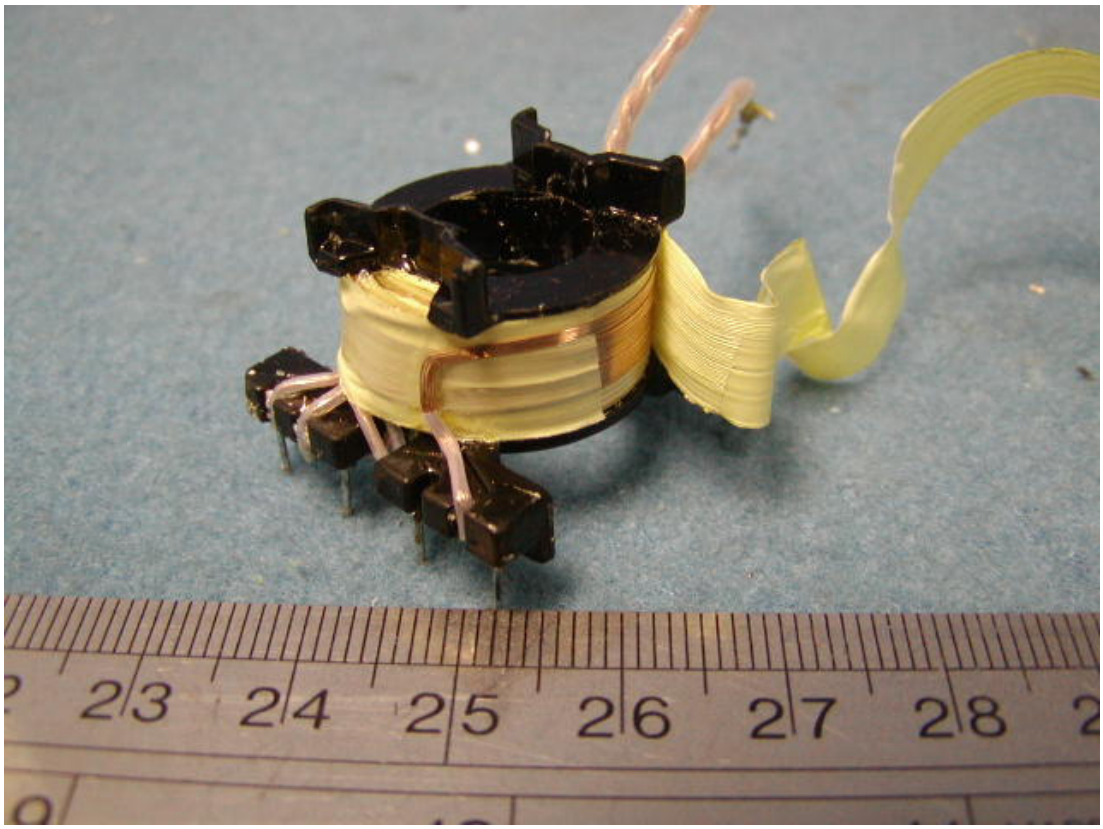
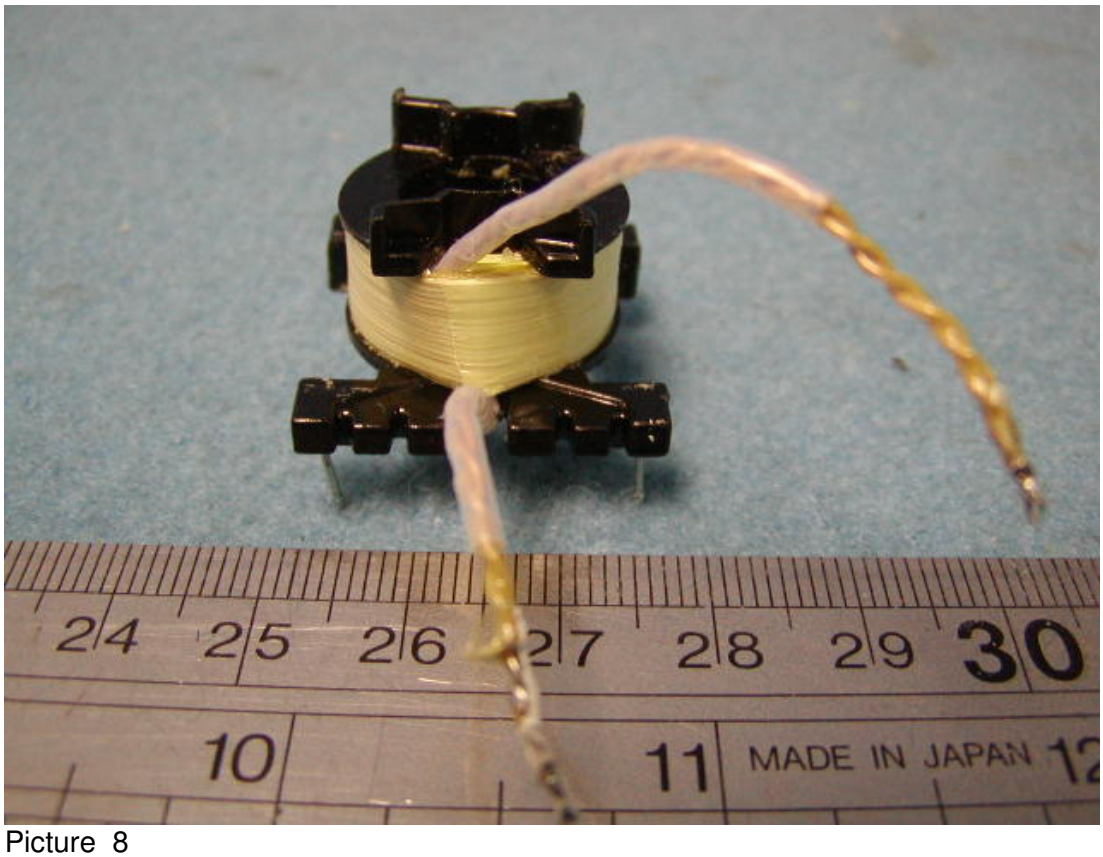


Picture 6



Picture 7



Picture 8