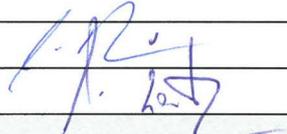
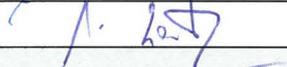




Test Report issued under the responsibility of:



TEST REPORT IEC 60335-2-49 Safety of household and similar electrical appliances Part 2 : Particular requirements for commercial electric hot cupboards	
Report Number	T211-0077/17
Date of issue	2017-02-10
Total number of pages	133
Name of Testing Laboratory preparing the Report	SIQ Ljubljana <i>Testing Laboratory is accredited by Slovenian Accreditation, Reg. No. LP-009</i> Tržaska cesta 2, SI-1000 Ljubljana, Slovenia
Applicant's name	MODULINE srl
Address	Via dell'industria, 11 Zona Ind. di S.Giacomo di Veglia, I-31029 Vittorio Veneto (TV), Italy
Test specification:	
Standard	IEC 60335-2-49:2002 (Fourth Edition) + A1:2008 in conjunction with IEC 60335-1:2010 (Fifth Edition) incl. Corr. 1:2010 and Corr. 2:2011 + A1:2013 incl. Corr. 1:2014
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No.	IEC60335_2_49G
Test Report Form(s) Originator	IMQ S.p.A.
Master TRF	Dated 2015-05
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General disclaimer:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

Test item description	Commercial electric hot cupboard	
Trade Mark	MODULINE	
Manufacturer	MODULINE srl Via dell'industria, 11 Zona Ind. di S.Giacomo di Veglia, I-31029 Vittorio Veneto (TV), Italy	
Model/Type reference	HSH, HSW, HHT, HHB series (see general product information)	
Ratings	See general product information	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	SIQ Ljubljana <i>Testing Laboratory is accredited by Slovenian Accreditation, Reg. No. LP-009</i>
Testing location/ address		Tržaska cesta 2, SI-1000 Ljubljana, Slovenia
<input type="checkbox"/>	Associated CB Testing Laboratory:	
Testing location/ address		
Tested by (name, function, signature)		Andrej Perko 
Approved by (name, function, signature) ..		Matej Žontar 
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
<input type="checkbox"/>	Testing procedure: CTF Stage 2:	
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) .. :		
<input type="checkbox"/>	Testing procedure: CTF Stage 3:	
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) .. :		
Supervised by (name, function, signature) :		

- List of Attachments (including a total number of pages in each attachment):**
- Attachment 1 - European Group Differences and National Differences according to EN 60335-2-49:2003 + A1:2008 + A11:2012, EN 60335-1:2012, EN 62233:2008 (14 pages);
 - Attachment 2 - European Group Differences and National Differences according to EN 60335-1:2012/A11:2014 (1 page);
 - Attachment 3 - Photo documentation (13 pages)

Summary of testing:

<p>Tests performed (name of test and test clause): All the applicable tests were performed on representative models HHT282E and HSH052E.</p>	<p>Testing location: EMF testing (EN 62233) SIQ Ljubljana Trpinčeva ulica 37 A, SI-1000 Ljubljana, Slovenia All other testing: SIQ Ljubljana Tržaška cesta 2, SI-1000 Ljubljana, Slovenia</p>
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Summary of compliance with National Differences

List of countries addressed:
European Group Differences and National Differences

The product fulfils the requirements of
IEC 60335-2-49:2002 (Fourth Edition) + A1:2008, IEC 60335-1:2010 (Fifth Edition) + A1:2013
EN 60335-2-49:2003 + A1:2008 + A11:2012, EN 60335-1:2012 + A11:2014
EN 62233:2008

Copy of marking plate

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

<p>MODULINE srl Via dell'industria, 11 Zona Ind. di S.Giacomo di Veglia 31029 VITTORIO VENETO (TV) ITALY T. +39 0438 5063 r.a. - F +39 0438 912323 www.moduline.it</p>	
TYP HHT282E	MODEL HHT282E
2015	NR 1500417002C
AC 220-240V 50/60 HZ	
TOT 3 KW	
IPX4	
IT08060000005254	
TARGHETTA CARATTERISTICA	

<p>MODULINE srl Via dell'industria, 11 Zona Ind. di S.Giacomo di Veglia 31029 VITTORIO VENETO (TV) ITALY T. +39 0438 5063 r.a. - F +39 0438 912323 www.moduline.it</p>	
TYP HHT282E	MODEL HHT282E
2015	NR 1500417002C
AC 230V 50 HZ	
TOT 3 KW	
IPX4	
IT08060000005254	
TARGHETTA CARATTERISTICA	

<p>MODULINE srl Via dell'industria, 11 Zona Ind. di S.Giacomo di Veglia 31029 VITTORIO VENETO (TV) ITALY T. +39 0438 5063 r.a. - F +39 0438 912323 www.moduline.it</p>	
TYP HSH052E	MODEL HSH052E
2015	NR 1500417001C
AC 220-240V 50/60 HZ	
TOT 1,5 KW	
IPX4	
IT08060000005254	
TARGHETTA CARATTERISTICA	

<p>MODULINE srl Via dell'industria, 11 Zona Ind. di S.Giacomo di Veglia 31029 VITTORIO VENETO (TV) ITALY T. +39 0438 5063 r.a. - F +39 0438 912323 www.moduline.it</p>	
TYP HSH052E	MODEL HSH052E
2015	NR 1500417001C
AC 230V 50 HZ	
TOT 1,5 KW	
IPX4	
IT08060000005254	
TARGHETTA CARATTERISTICA	

Test item particulars	
Classification of installation and use	Stationary class I appliances
Supply Connection	Power supply cord fitted with the plug
.....	Type Y attachment
Possible test case verdicts:	
- test case does not apply to the test object	N/A
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)
Testing	
Date of receipt of test item	2015-04-16, 2016-12-01
Date (s) of performance of tests	From 2015-06-01 to 2017-02-09
General remarks:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</p>	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC60335-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)	MODULINE srl Via dell'industria, 11 Zona Ind. di S.Giacomo di Veglia, I-31029 Vittorio Veneto (TV), Italy

General product information:

The products are commercial electric hot cupboard for maintaining the food at required temperature. Maximal operating temperature for all models is 120°C.

Model /Type	Ratings	Dimensions (W x D x H)	Weight	Tray capacity and max. load	Opening
HSH031E / HSH031E 	220-240 V 50/60 Hz or 230 V 50 Hz; 0,7 kW; IPX4; class I	450x635x405 mm	23 kg	3 x GN 1/1 11 kg	1 door
HSH051E / HSH051E 	220-240 V 50/60 Hz or 230 V 50 Hz; 1,0 kW; IPX4; class I	450x635x555 mm	28 kg	5 x GN 1/1 18 kg	1 door
HSH052E / HSH052E 	220-240 V 50/60 Hz or 230 V 50 Hz; 1,5 kW; IPX4; class I	655x755x555 mm	39 kg	5 x GN 2/1 10 x GN 1/1 36 kg	1 door
HSW001E / HSW001E 	220-240 V 50/60 Hz or 230 V 50 Hz; 0,7 kW; IPX4; class I	450x650x300 mm	27 kg	1 x GN 1/1 6 kg	1 drawer
HSW002E / HSW002E 	220-240 V 50/60 Hz or 230 V 50 Hz; 1,0 kW; IPX4; class I	450x650x510 mm	40 kg	2 x GN 1/1 12 kg	2 drawer
HSW003E / HSW003E 	220-240 V 50/60 Hz or 230 V 50 Hz; 1,0 kW; IPX4; class I	450x650x720 mm	54kg	3 x GN 1/1 18 kg	3 drawer

Model /Type	Ratings	Dimensions (W x D x H)	Weight	Tray capacity and max. load	Opening
 <p>HSW011E / HSW011E</p>	220-240 V 50/60 Hz or 230 V 50 Hz; 0,7 kW; IPX4; class I	660x585x300 mm	32 kg	1 x GN 1/1 6 kg	1 drawer
 <p>HSW012E / HSW012E</p>	220-240 V 50/60 Hz or 230 V 50 Hz; 1,0 kW; IPX4; class I	660x585x510 mm	50 kg	2 x GN 1/1 12 kg	2 drawers
 <p>HSW013E / HSW013E</p>	220-240 V 50/60 Hz or 230 V 50 Hz; 1,0 kW; IPX4; class I	660x585x720 mm	67 kg	3 x GN 1/1 18 kg	3 drawers
 <p>HHT052E / HHT052E</p>	220-240 V 50/60 Hz or 230 V 50 Hz; 1,5 kW; IPX4; class I	755x855x790 mm	55 kg	5 x GN 2/1 10 x GN 1/1 36 kg	1 door
 <p>HHT081E / HHT081E</p>	220-240 V 50/60 Hz or 230 V 50 Hz; 1,0 kW; IPX4; class I	550x735x1010 mm	49 kg	8 x GN 1/1 29 kg	1 door

Model /Type	Ratings	Dimensions (W x D x H)	Weight	Tray capacity and max. load	Opening
<p>HHT082E / HHT082E</p> 	<p>220-240 V 50/60 Hz or 230 V 50 Hz; 1,5 kW; IPX4; class I</p>	<p>755x855x1010 mm</p>	<p>69 kg</p>	<p>8 x GN 2/1 16 x GN 1/1 58 kg</p>	<p>1 door</p>
<p>HHT161E / HHT161E</p> 	<p>220-240 V 50/60 Hz or 230 V 50 Hz; 2,0 kW; IPX4; class I</p>	<p>550x735x1760 mm</p>	<p>92 kg</p>	<p>16 x GN 1/1 58 kg</p>	<p>2 doors</p>
<p>HHT162E / HHT162E</p> 	<p>220-240 V 50/60 Hz or 230 V 50 Hz; 3,0 kW; IPX4; class I</p>	<p>765x845x1760 mm</p>	<p>104 kg</p>	<p>16 x GN 2/1 32 x GN 1/1 115 kg</p>	<p>2 doors</p>

Model /Type	Ratings	Dimensions (W x D x H)	Weight	Tray capacity and max. load	Opening
 <p>HHT282E / HHT282E</p>	<p>220-240 V 50/60 Hz or 230 V 50 Hz; 3,0 kW; IPX4; class I</p>	<p>765x845x1760 mm</p>	<p>109 kg</p>	<p>8 x GN 2/1 + 8 x GN 2/1 115 kg</p>	<p>2 doors</p>
 <p>HHB048E / HHB048E</p>	<p>220-240 V 50/60 Hz or 230 V 50 Hz; 0,75 kW; IPX4; class I</p>	<p>910x860x1040 mm</p>	<p>83 kg</p>	<p>8 x GN 2/1 16 x GN 1/1 57,5 kg</p>	<p>1 door</p>
 <p>HHB096E / HHB096E</p>	<p>220-240 V 50/60 Hz or 230 V 50 Hz; 1,5 kW; IPX4; class I</p>	<p>920x855x1820 mm</p>	<p>142 kg</p>	<p>16 x GN 2/1 32 x GN 1/1 115 kg</p>	<p>2 doors</p>

Model /Type	Ratings	Dimensions (W x D x H)	Weight	Tray capacity and max. load	Opening
<p>HHB128E / HHB128E</p> 	<p>220-240 V 50/60 Hz or 230 V 50 Hz; 2,25 kW; IPX4; class I</p>	<p>1170x855x1820 mm</p>	<p>180 kg</p>	<p>16 x GN 2/1 32 x GN 1/1 115 kg</p>	<p>2 doors</p>
<p>HHB192E / HHB192E</p> 	<p>220-240 V 50/60 Hz or 230 V 50 Hz; 3,0 kW; IPX4; class I</p>	<p>1760x855x1820 mm</p>	<p>284 kg</p>	<p>32 x GN 2/1 64 x GN 1/1 230 kg</p>	<p>4 doors</p>

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
5	GENERAL CONDITIONS FOR THE TESTS		P
	Tests performed according to clause 5, e.g. nature of supply, sequence of testing, etc.		P
5.10	Appliances intended for installation in a bank of other appliances or to be fixed to an installation wall enclosed to obtain protection against electric shock and harmful ingress of water equivalent to that obtained when installed in accordance with the instructions provided with the appliance (IEC 60335-2-49)	Stationary appliances	N/A
5.101	Appliances are tested as heating appliances, even if they incorporate a motor (IEC 60335-2-49)	No motors	P
5.102	Appliances, when assembled in combination with or incorporation other appliances, are tested in accordance with the requirements of this standard. The other appliance are operated simultaneously in accordance with the requirements of the relevant standard (IEC 60335-2-49)		N/A
6	CLASSIFICATION		P
6.1	Protection against electric shock: Class 0, 0I, I, II, III	Class I	P
	Appliances of Class I with respect to protection against electric shock (IEC 60335-2-49)	Class I	P
6.2	Protection against harmful ingress of water	IPX4	P
	Appliances normally used on a table are at least IPX3. Other appliance are at least IPX4 (IEC60335-2-49/A1)	IPX4	P
7	MARKING AND INSTRUCTIONS		P
7.1	Rated voltage or voltage range (V).....	220-240 V or 230 V	P
	Symbol for nature of supply, or.....		N/A
	Rated frequency (Hz).....	50 Hz at 230 V 50/60 Hz at 220-240 V	P
	Rated power input (W), or.....	0,7 kW / 0,75 kW / 1,0 kW / 1,5 kW / 2,0 kW /2,25 kW / 3,0 kW	P
	Rated current (A)		N/A
	Manufacturer's or responsible vendor's name, trademark or identification mark	MODULINE	P
	Model or type reference	HSH, HSW, HHT, HHB series (see general product information)	P
	Symbol IEC 60417-5172, for class II appliances	Class I	N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	IP number, other than IPX0.....:	IPX4	P
	Symbol IEC 60417-5018, for class II and class III appliances incorporating a functional earth	Class I	N/A
	the appliance is operated by batteries only		N/A
	Symbol IEC 60417-5036, for the enclosure of electrically-operated water valves in external hose-sets for connection of an appliance to the water mains, if the working voltage exceeds extra-low voltage	No valves	N/A
	Water pressure or range of pressures, in kilopascals (kPa), for appliances intended to be connected to a water supply unless this is indicated in the instruction sheet. (IEC60335-2-49)	No connection to water mains	N/A
	Appliances incorporating induction heating sources		N/A
	- operating frequency or operating frequency range in kilohertz (kHz) (IEC60335-2-49/A1)	No induction heating sources	N/A
	- the total power input of all the induction heating units which can operate simultaneously, in kilowatts, unless this is indicated in the instruction sheet (IEC60335-2-49/A1)		N/A
	- the total power input of all the non-induction heating units which can operate simultaneously in watts or kilowatts, unless this is indicated in the instruction sheet (IEC60335-2-49/A1)		N/A
	Any cover giving access to live parts with a working voltage exceeding 250 V marked by the following: " WARNING – DANGEROUS VOLTAGE " or symbol of dangerous voltage(IEC60335-2-49/A1)	No voltages higher than 250 V	N/A
	Covers giving access to induction coils marked by the following: " CAUTION- MAGNETIC FIELD " or by the symbol for non-ionizing electromagnetic radiation (IEC60335-2-49/A1)	No induction heating sources	N/A
7.2	Warning for stationary appliances for multiple supply	No multiple supply	N/A
	Warning placed in vicinity of terminal cover		N/A
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen	220-240 V	P
	Different rated values marked with the values separated by an oblique stroke	50/60 Hz	P
7.4	Appliances adjustable for different rated voltages or rated frequencies, the voltage or the frequency setting is clearly discernible	No adjustable rated voltages	N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	Requirement met if frequent changes are not required and the rated voltage or rated frequency to which the appliance is to be adjusted is determined from a wiring diagram		N/A
7.5	Appliances with more than one rated voltage or one or more rated voltage ranges, marked with rated input or rated current for each rated voltage or range, unless		N/A
	the power input is related to the arithmetic mean value of the rated voltage range	220-240 V or 230 V	P
	Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear		N/A
7.6	Correct symbols used		P
	Symbol for nature of supply placed next to rated voltage	Marked with the frequency	N/A
	Symbol for class II appliances placed unlikely to be confused with other marking	Class I	N/A
	Units of physical quantities and their symbols according to international standardized system		P
	[symbol IEC 60417-5041 (DB:2002-10)] Caution, hot surface (IEC60335-2-49/A1)	Symbol is used	P
	[symbol IEC 60417-5140 (DB:2003-04)] Non –ionizing electromagnetic radiation (IEC60335-2-49/A1)	No induction heating sources	N/A
7.7	Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply, unless	One supply cord	N/A
	correct mode of connection is obvious		N/Av
7.8	Except for type Z attachment, terminals for connection to the supply mains indicated as follows:		P
	- marking of terminals exclusively for the neutral conductor (letter N)		N/A
	- marking of protective earthing terminals (symbol IEC 60417-5019)	Symbol is at the supply terminal	P
	- marking not placed on removable parts	Symbol is at the supply terminal	P
	- marking of functional earthing terminals (symbol IEC 60417-5018)	No functional earth	N/A
7.9	Marking or placing of switches which may cause a hazard	Markings of knobs of electronic control	P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means	Knobs of electronic control are marked with symbols, letters, signal lamps	P
	This applies also to switches which are part of a control		P
	If figures are used, the off position indicated by the figure 0	ON/OFF symbol is used	P
	The figure 0 indicates only OFF position, unless no confusion with the OFF position	ON/OFF symbol is used	P
7.11	Indication for direction of adjustment of controls		P
7.12	Instructions for safe use provided		P
	Details concerning precautions during user maintenance		P
	The instructions state that:		P
	- the appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction	This requirement is not applicable according to standard IEC 60335-2-49/A1.	N/A
	- children being supervised not to play with the appliance	This requirement is not applicable according to standard IEC 60335-2-49/A1	N/A
	For a part of class III construction supplied from a detachable power supply unit, the instructions state that the appliance is only to be used with the unit provided	No detachable class III constructions	N/A
	Instructions for class III appliances state that it must only be supplied at SELV, unless	Class I	N/A
	it is a battery-operated appliance, the battery being charged outside the appliance		N/A
	For appliances for altitudes exceeding 2000 m, the maximum altitude is stated		N/A
	The instructions for appliances incorporating a functional earth states that the appliance incorporates an earth connection for functional purposes only	No functional earth	N/A
	The instruction sheet of appliances provided with wheels or similar means shall also state the maximum load, in kilograms, of the appliance (IEC 60335-2-49)		P
	The instruction sheet of appliances provided with wheels or similar means shall also state the maximum load, in kilograms, of the appliance (IEC 60335-2-49)		P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	If symbols IEC 60417-5041 (DB:2002-10). IEC 60417-5140 (DB:2003-04) are marked on the appliance, their meaning are explained (IEC60335-2-49/A1)	The meanings of all symbols used are explained in the instructions	P
	The instructions for appliances incorporating induction heating sources are include the Substance of the following warning and information: – WARNING: If the surface of coil carriers changes to darker colour or shows cracks, immediately disconnect the appliance from the supply. (IEC60335-2-49/A1)	No induction heating sources	N/A
	– metallic objects such as kitchen utensils, cutlery, etc., are not placed on the induction tray within zones provided for the induction crockery since they could get hot; (IEC60335-2-49/A1)	No induction heating sources	N/A
	– only use induction crockery and induction trays recommended by the manufacturer; – users with heart pacemakers should consult with the manufacturer (unless specific details are given) (IEC60335-2-49/A1)	No induction heating sources	N/A
7.12.1	Sufficient details for installation supplied		P
	For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated	No water connection	N/A
	If different rated voltages or different rated frequencies are marked, the instructions state what action to be taken to adjust the appliance		N/A
	Appliance accompanied by an instruction sheet detailing any special precautions necessary for installation (IEC 60335-2-49)		P
	Details of how to ensure appropriate protection against electric shock and harmful ingress of water for appliances intended for installation in a bank of other appliances or to be fixed to an installation wall (IEC 60335-2-49)		N/A
	Detailed installation instructions, if the controls of more than one appliance are combined in a separate enclosure (IEC 60335-2-49)	No separate control	N/A
	Instructions for user maintenance, for example cleaning (IEC 60335-2-49)		P
	Instructions state that such on appliance shall not be cleaned with a water jet (IEC 60335-2-49)		P
	Recommendations regarding the rating and installation of protective devices for appliances which are permanently connected to a fixed wiring and for which leakage currents may exceed 10 mA (IEC 60335-2-49)		N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	Instructions for appliances incorporating swivelling radiant heaters (IEC60335-2-49/A1)	No swivelling radiant heaters	N/A
	the instructions are state that any repairs are carried out only by persons trained or recommended by the manufacturer (IEC60335-2-49/A1)		N/A
7.12.2	Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules	The appliances are provided with the supply cord fitted with the plug.	N/A
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause 11; instructions state that the fixed wiring must be protected	The appliances are provided with the supply cord fitted with the plug.	N/A
7.12.4	Instructions for built-in appliances:		N/A
	- dimensions of space		N/A
	- dimensions and position of supporting and fixing		N/A
	- minimum distances between parts and surrounding structure		N/A
	- minimum dimensions of ventilating openings and arrangement		N/A
	- connection to supply mains and interconnection of separate components		N/A
	- allow disconnection of the appliance after installation, by accessible plug or a switch in the fixed wiring, unless		N/A
	a switch complying with 24.3		N/A
	separate control panels of built-in appliance. (IEC 60335-2-49)		N/A
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord		N/A
	Replacement cord instructions, type Y attachment		P
	Replacement cord instructions, type Z attachment		N/A
7.12.6	Caution in the instructions for appliances incorporating a non-self-resetting thermal cut-out that is reset by disconnection of the supply mains, if this cut-out is required to comply with the standard	No non-self-resetting thermal cut-out that reset by disconnection of the supply mains	N/A
7.12.7	Instructions for fixed appliances stating how the appliance is to be fixed	Stationary appliance	N/A
7.12.8	Instructions for appliances connected to the water mains:		N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	- max. inlet water pressure (Pa)..... :		N/A
	- min. inlet water pressure, if necessary (Pa) :		N/A
	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets		N/A
7.13	Instructions and other texts in an official language	English	P
7.14	Marking clearly legible and durable, rubbing test as specified		P
7.15	Markings on a main part	Main marking plate is attached on the back side of the appliance	P
	Marking clearly discernible from the outside, if necessary after removal of a cover		P
	For portable appliances, cover can be removed or opened without a tool		N/A
	For stationary appliances, name, trademark or identification mark and model or type reference visible after installation	Main marking plate is attached on the back side of the appliance	P
	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions		N/A
	Indications for switches and controls placed on or near the components. Marking not on parts which can be positioned or repositioned in such a way that the marking is misleading		P
	The symbol IEC 60417-5018 placed next to the symbol IEC 60417-5172 or IEC 60417-5180		N/A
	When it is not practical to place the marking of fixed appliances so that it is visible after the appliance has been installed, relevant information included in the instruction for use or (IEC 60335-2-49)	Stationary appliance	N/A
	Additional label (IEC 60335-2-49)		N/A
	Additional label for appliances incorporating induction heating sources (IEC60335-2-49/A1)	No induction heating source	N/A
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link	5 A; 8 A; 12,5 A; 16 A	P
7.101	Equipotential bonding terminals indicated by the equipotential symbol (IEC 60335-2-49)	Equipotential terminal is placed at the back or on the bottom side of the ovens.	P
7.102	Instructions for use and installation if a swivel radiant heater can be swung over (IEC60335-2-49/A1)	No radiant heater	N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	WARNING: If this radiant heater is positioned adjacent to other areas or appliances, it is recommended that, within the range of the radiation, these areas or appliances be made of non-combustible material, otherwise, they are clad with a non-combustible heat-insulating material, and attention is to be paid to fire prevention regulations. (IEC60335-2-49/A1)		N/A
7.103	Food warming areas of radiant heaters adjacent to the appliance shall be permanently marked if the temperature rise during Clause 11 exceeds 65 K. This marking is not required if the swivelling area is between a bank of other appliances (IEC60335-2-49/A1)	No radiant heater	N/A
7.104	The side of the radiant heater case facing the user (front side) shall be permanently marked with symbol IEC 60417-5041(2002-10) (IEC60335-2-49/A1)	No radiant heater	N/A
7.105	The zones on induction trays where the induction crockery is to be placed are marked permanently, e.g. by an appropriate design. (IEC60335-2-49/A1)	No induction heating sources	N/A
8	PROTECTION AGAINST ACCESS TO LIVE PARTS		P
8.1	Adequate protection against accidental contact with live parts		P
8.1.1	Requirement applies for all positions, detachable parts removed		P
	Lamps behind a detachable cover not removed, if conditions met	No lamps	N/A
	Insertion or removal of lamps, protection against contact with live parts of the lamp cap		N/A
	Use of test probe B of IEC 61032, with a force not exceeding 1 N: no contact with live parts		P
	Use of test probe B of IEC 61032 through openings, with a force of 20N: no contact with live parts		P
8.1.2	Use of test probe 13 of IEC 61032, with a force not exceeding 1 N, through openings in class 0 appliances and class II appliances/constructions: no contact with live parts		P
	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts		P
8.1.3	For appliances other than class II, use of test probe 41 of IEC 61032, with a force not exceeding 1 N: no contact with live parts of visible glowing heating elements		N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
8.1.4	Accessible part not considered live if:		P
	- safety extra-low a.c. voltage: peak value not exceeding 42.4 V		N/A
	- safety extra-low d.c. voltage: not exceeding 42.4 V	Max voltage 15 V d.c.	P
	- or separated from live parts by protective impedance	No protective impedance	N/A
	If protective impedance: d.c. current not exceeding 2 mA, and		N/A
	a.c. peak value not exceeding 0.7 mA		N/A
	- for peak values over 42.4 V up to and including 450 V, capacitance not exceeding 0,1 μ F		N/A
	- for peak values over 450 V up to and including 15 kV, discharge not exceeding 45 μ C		N/A
	- for peak values over 15kV, the energy in the discharge not exceeding 350 mJ		N/A
8.1.5	Live parts protected at least by basic insulation before installation or assembly:		N/A
	- built-in appliances		N/A
	- fixed appliances		N/A
	- appliances delivered in separate units		N/A
8.2	Class II appliances and constructions constructed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only	Class II constructions	P
	Only possible to touch parts separated from live parts by double or reinforced insulation		P
9	STARTING OF MOTOR-OPERATED APPLIANCES		N/A
9.101	Fan motors providing a cooling effect in order to comply with the requirements of Cl. 11 start under all voltage conditions which may occur in use (IEC 60335-2-49)	No fan	N/A
	Starting test three times at 0,85 times rated voltage (IEC 60335-2-49)		N/A
	Starting tests three times at 1,06 times rated voltage (except for motors with centrifugal starting switch) (IEC 60335-2-49)		N/A
	In all cases, the safety is not affected and overload protection devices does not operate (IEC 60335-2-49)		N/A
10	POWER INPUT AND CURRENT		P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
10.1	The power input of appliances without induction heating sources, shown in Table 1. (IEC60335-2-49/A1)	(see appended table)	P
	The power input of appliances having only induction heating sources, are not deviate from the rated power input by more than 10 %. (IEC60335-2-49/A1)	No induction heating source	N/A
	The power input of the induction heating sources and the non-induction heating sources is measured separately, in each case using a combination of heating units that can be on at (IEC60335-2-49/A1)	No induction heating source	N/A
	For induction heating sources, the power input so measured are not deviate from the power input marked or declared by the manufacturer (see 7.1) by more than 10 %. For non-induction heating sources, the power input so measured shall not deviate from the power input marked or declared by the manufacturer (see 7.1) by more than the deviation shown in Table 1 for heating appliances (IEC60335-2-49/A1)	No induction heating source	N/A
	In addition, the power input of the appliance when the induction and non-induction heating sources are operated simultaneously are not deviate from the rated power input by more than 10 %. (IEC60335-2-49/A1)	No induction heating source	N/A
	For appliances having more than one heating unit, the total power input may be determined by measuring the power input of each heating unit separately (IEC 60335-2-49)	Total input power was measured with all heating units in operation	N/A
	the rated power input is related to the arithmetic mean value	At rated voltage 220-240 V	P
10.2	Current at normal operating temperature, rated voltage and normal operation not deviating from rated current by more than shown in table 2.....:	(see appended table)	N/A
	If the current varies throughout the operating cycle and the maximum value of the current exceeds, by a factor greater than two, the arithmetic mean value of the current occurring during a representative period, the current is the maximum value that is exceeded for more than 10 % of the representative period		N/A
	Otherwise the current is the arithmetic mean value		N/A
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		N/A
	the rated current is related to the arithmetic mean value of the range		N/A
11	HEATING		P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
11.1	No excessive temperatures in normal use		P
	For radiant heaters, 11.101 applies Add the following sub-clause (IEC60335-2-49/A1)	No radiant heaters	N/A
11.2	The appliance is held, placed or fixed in position as described	The appliance was placed in the test corner	P
	Appliances intended to be fixed on the floor, and appliances with a mass > 40 kg and not provided with rollers, castors or similar means are installed in accordance with the manufacturer's instructions (IEC 60335-2-49)	Appliances can be used on the floor or on the table.	P
	If no instructions are given, these appliances are considered as appliances normally placed on the floor (IEC 60335-2-49)	Appliances can be used on the floor or on the table.	P
11.3	Temperature rises, other than of windings, determined by thermocouples		P
	Temperature rises of windings determined by resistance method, unless	Transformer	P
	the windings are non-uniform or it is difficult to make the necessary connections		N/A
	NOTE 101 If the measurements can be unduly influenced by emissions from an induction heating source, i.e. the magnetic field, this must be taken into account. (IEC60335-2-49/A1)	No induction heating source	N/A
	In general, the use of thermocouples is not recommended because of the expected faulty heating-up of the thermocouples caused by the induction heating source. (IEC60335-2-49/A1)	No induction heating source	N/A
11.4	The non-induction heating units of the appliance are operated under normal operation at 1,15 times the power input marked or declared.(IEC60335-2-49/A1)	$1,15 \times (240/230)^2 \times 1500 \text{ W} = 1878 \text{ W}$ $1,15 \times (240/230)^2 \times 3000 \text{ W} = 3757 \text{ W}$	P
	Induction heating units are operated simultaneously and supplied separately at the most unfavourable voltage between 0,94 times minimum rated voltage and 1,06 times maximum rated voltage (IEC60335-2-49/A1)	No induction heating source	N/A
	If it is not possible to switch on all heating elements or induction heating sources at the same time, the test is made with each of the combinations that the switch arrangement will allow, the highest load possible with each switching arrangement being in circuit (IEC60335-2-49/A1)		N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	If the appliance is provided with a control which limits the total power input, the test is made with whichever combination of heating units, as may be selected by the control, imposes the severest condition (IEC 60335-2-49)	No control limiting power	N/A
	If the temperature rise limits of motors, transformers or electronic circuits are exceeded, the test is repeated with 1,06 times rated voltage (only for measurements of motor, transformer and electronic circuit) (IEC 60335-2-49)	Temperatures are within the limits	N/A
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V)	Heating appliance	N/A
11.6	Combined appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V)	Heating appliance	N/A
11.7	Appliances incorporating induction heating sources are operated at maximum setting of the controls for one cycle, which consists of a heating-up phase and a keeping warm. (IEC 60335-2-49/A1)	No induction heating source	N/A
	Appliances without induction heating sources are operated until steady conditions are established. (IEC 60335-2-49/A1)		P
11.8	Temperature rises monitored continuously and not exceeding the values in table 3	(see appended table)	P
	If the temperature rise of a motor winding exceeds the value of table 3, or	Temperatures are within the limits	N/A
	if there is doubt with regard to classification of insulation,		N/A
	tests of Annex C are carried out		N/A
	Sealing compound does not flow out	No sealing compound	N/A
	Protective devices do not operate, except	No operation of protective device	P
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4	No protective electronic circuit	N/A
11.101	For radiant heaters, the temperature rise limit of 65 K applies to the areas, including walls, which are reached by the radiation. If this temperature rise limit is exceeded, the requirements of 7.102 apply (IEC 60335-2-49/A1)	No radiant heaters	N/A
13	LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE		P
13.1	Leakage current not excessive and electric strength adequate		P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	Heating appliances operated at 1.15 times the rated power input (W)	1,15 x (240/230) ² x 1500 W = 1878 W 1,15 x (240/230) ² x 3000 W = 3757 W	P
	Motor-operated appliances and combined appliances supplied at 1.06 times the rated voltage (V)		N/A
	Protective impedance and radio interference filters disconnected before carrying out the tests	No protective impedance or radio interference filters	N/A
13.2	For class 0, class II and class III appliances, and class II constructions, leakage current measured by means of the circuit described in figure 4 of IEC 60990	Class I appliance; circuit described in figure 4 of IEC 60990 was used	P
	For class 0I and class I appliances, a low impedance ammeter may be used	Circuit described in figure 4 of IEC 60990 was used	N/A
	Leakage current measurements	(see appended table)	P
	Instead of the permissible leakage current to stationary Class I appliances, the following applies :	(IEC 60335-2-49)	P
	- cord and plug connected appliances: 1 mA/kW rated power input of the appliance (max. of 10 mA) (IEC 60335-2-49)		P
	- other appliances: 1 mA/kW rated power input of the appliance (without max.) (IEC 60335-2-49)		N/A
13.3	The appliance is disconnected from the supply		P
	Electric strength tests according to table 4	(see appended table)	P
	No breakdown during the tests		P
14	TRANSIENT OVERVOLTAGES		N/A
	Appliances withstand the transient over-voltages to which they may be subjected		N/A
	Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6	(see appended table)	N/A
	No flashover during the test, unless		N/A
	of functional insulation if the appliance complies with clause 19 with the clearance short-circuited		N/A
15	MOISTURE RESISTANCE		P
15.1	Enclosure provides the degree of moisture protection according to classification of the appliance	IPX4	P
	Compliance checked as specified in 15.1.1, taking into account 15.1.2, followed by the electric strength test of 16.3		P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	No trace of water on insulation which can result in a reduction of clearances or creepage distances below values specified in clause 29		P
	Additional splash test for IPX0, IPX1, 1PX2, IPX3 and IPX4 appliances : (IEC 60335-2-49)		P
	- 5 min (IEC 60335-2-49)		P
	- water splashes up 150 mm above the bottom (IEC 60335-2-49)		P
	- the bowl is placed on the floor, or 50 mm below the lowest edge of the appliance (IEC 60335-2-49)		P
15.1.1	Appliances, other than IPX0, subjected to tests as specified in IEC 60529	IPX4	P
	Water valves containing live parts in external hoses for connection of an appliance to the water mains tested as specified for IPX7 appliances		N/A
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test	Appliances used on the floor or table	N/A
	Built-in appliances installed according to the instructions	Appliances used on the floor or table	N/A
	Appliances placed or used on the floor or table placed on a horizontal unperforated support		P
	Appliances normally fixed to a wall and appliances with pins for insertion into socket-outlets are mounted on a wooden board	Appliances used on the floor or table	N/A
	For IPX3 appliances, the base of wall mounted appliances is placed at the same level as the pivot axis of the oscillating tube		N/A
	For IPX4 appliances, the horizontal centre line of the appliance is aligned with the pivot axis of the oscillating tube, and		P
	for appliances normally used on the floor or table, the movement is limited to two times 90° for a period of 5 min, the support being placed at the level of the pivot axis of the oscillating tube		P
	Wall-mounted appliances, take into account the distance to the floor stated in the instructions		N/A
	Appliances normally fixed to a ceiling are mounted underneath a horizontal unperforated support, the pivot axis of the oscillating tube located at the level of the underside of the support, and	Appliances used on the floor or table	N/A
	for IPX4 appliances, the movement of the tube is limited to two times 90° from the vertical for a period of 5 min		N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	Appliances with type X attachment fitted with a flexible cord as described	Type Y attachment	N/A
	Detachable parts subjected to the relevant treatment with the main part	No removable parts	N/A
	However, if a part has to be removed for user maintenance and a tool is needed, this part is not removed		N/A
	Appliances normally used on a table are placed on a support having dimensions which are 15 cm ± 5 cm in excess of those of the orthogonal projection of the appliance on the support (IEC 60335-2-49)		P
15.2	Spillage of liquid does not affect the electrical insulation		P
	Appliances with Type X attachment are fitted with the lightest permissible type of flexible cable or cord of the smallest cross-sectional area specified in Cl. 26.2 and other appliances are tested as delivered (IEC 60335-2-49)	Type Y attachment	N/A
	Appliances provided with an appliance inlet are tested with or without an appropriate connector in position, whichever is the more unfavourable. Detachable parts are removed. (IEC 60335-2-49)	No appliance inlet	N/A
	A litre of cold water containing approximately 1% NaCl is poured steadily over a period of 1 min on to the centre of any heated surface. (IEC 60335-2-49)		P
	Appliances with type X attachment fitted with a flexible cord as described	Type Y attachment	N/A
	Appliances incorporating an appliance inlet tested with or without a connector, whichever is most unfavourable	No appliance inlet	N/A
	The appliance withstands the electric strength test of 16.3		P
	No trace of water on insulation that can result in a reduction of clearances or creepage distances below values specified in clause 29	No water on insulation	P
15.3	Appliances proof against humid conditions		P
	Checked by test Cab: Damp heat steady state in IEC 60068-2-78		P
	Detachable parts removed and subjected, if necessary, to the humidity test with the main part	No detachable parts	N/A
	Humidity test for 48 h in a humidity cabinet		P
	Reassembly of those parts that may have been removed		N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	The appliance withstands the tests of clause 16		P
16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		P
16.1	Leakage current not excessive and electric strength adequate		P
	Protective impedance disconnected from live parts before carrying out the tests	No protective impedance	N/A
	Tests carried out at room temperature and not connected to the supply		P
16.2	Single-phase appliances: test voltage 1.06 times rated voltage (V).....:	254,4 V	P
	Three-phase appliances: test voltage 1.06 times rated voltage divided by $\sqrt{3}$ (V)		N/A
	Leakage current measurements	(see appended table)	P
	Limit values doubled if:		N/A
	- all controls have an off position in all poles, or		N/A
	- the appliance has no control other than a thermal cut-out, or		N/A
	- all thermostats, temperature limiters and energy regulators do not have an off position, or		N/A
	- the appliance has radio interference filters		N/A
	With the radio interference filters disconnected, the leakage current do not exceed limits specified	(see appended table)	N/A
	Instead of the permissible leakage current to stationary Class I appliances, the following applies :	(IEC 60335-2-49)	P
	- cord and plug connected appliances: 1 mA/kW rated power input of the appliance (max. of 10 mA) (IEC 60335-2-49)		P
	- other appliances: 1 mA/kW rated power input of the appliance (without max.) (IEC 60335-2-49)		N/A
16.3	Electric strength tests according to table 7	(see appended table)	P
	Test voltage applied between the supply cord and inlet bushing and cord guard and cord anchorage as specified	(see appended table)	P
	No breakdown during the tests		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	(see appended table)	P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	Appliance supplied with 1.06 or 0.94 times rated voltage under the most unfavourable short-circuit or overload likely to occur in normal use (V)..... :	254,4 V or 206,8 V	P
	Basic insulation is not short-circuited		P
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K		P
	Temperature of the winding not exceeding the value specified in table 8		P
	However, limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1		N/A
18	ENDURANCE		N/A
	Requirements and tests are specified in part 2 when necessary		N/A
19	ABNORMAL OPERATION		P
19.1	The risk of fire, mechanical damage or electric shock under abnormal or careless operation obviated		P
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe	(see appended table)	P
	Appliances incorporating heating elements subjected to the tests of 19.2 and 19.3, and		P
	if the appliance also has a control that limit the temperature during clause 11 it is subjected to the test of 19.4, and		P
	if applicable, to the test of 19.5		P
	Appliances incorporating PTC heating elements are also subjected to the test of 19.6	No PTC heating elements	N/A
	Appliances incorporating motors subjected to the tests of 19.7 to 19.10, as applicable	No motors	N/A
	Appliances incorporating electronic circuits subjected to the tests of 19.11 and 19.12, as applicable		P
	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11		P
	Appliances incorporating voltage selector switches subjected to the test of 19.15	No voltage selector switch	N/A
	Unless otherwise specified, the tests are continued until a non-self-resetting thermal cut-out operates, or		P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	until steady conditions are established		P
	If a heating element or intentionally weak part becomes open-circuited, the relevant test is repeated on a second sample	During the abnormal operation thermal cut-out or current fuse link operates.	N/A
	A control or switching device that is intended for different settings corresponding to different functions of the same part of the appliance and that are covered by different standards is, in addition, set in the most severe setting, irrespective of the manufacturer's instructions. (IEC 60335-2-49)		N/A
	Appliances incorporating induction heating sources are also subjected to the tests of 19.101 and 19.102. For radiant heaters, 19.103 applies (IEC 60335-2-49/A1)	No induction heating sources	N/A
19.2	Test of appliances with heating elements with restricted heat dissipation; test voltage (V), power input of 0.85 times rated power input (W)	$0,85 \times (220/230)^2 \times 1500 \text{ W} = 1166 \text{ W}$ $0,85 \times (220/230)^2 \times 3000 \text{ W} = 2333 \text{ W}$	P
	Test with fan motor rendered inoperative (IEC 60335-2-49)	No fan	N/A
	Doors or lids are open or closed, whichever is the more unfavourable (IEC 60335-2-49)		P
	Surfaces incorporating heating elements and heated tops heated indirectly by the hot cupboard heating elements are covered with a layer of felt having a mass of $4 \text{ kg/m}^2 \pm 0,4 \text{ m}^2$ and a thickness of 25 mm (IEC 60335-2-49)	No heated tops	N/A
	Detachable reflectors and similar detachable parts are placed in any position or removed, whichever is the more unfavourable (IEC 60335-2-49)	No reflectors	N/A
	Appliances incorporating induction heating sources are operated fully loaded, with empty induction crockery without covers (cloches) in their position, until steady conditions are established. (IEC 60335-2-49/A1)	No induction heating sources	N/A
19.3	Test of 19.2 repeated; test voltage (V), power input of 1.24 times rated power input (W)	$1,24 \times (240/230)^2 \times 1500 \text{ W} = 2025 \text{ W}$ $1,24 \times (240/230)^2 \times 3000 \text{ W} = 4050 \text{ W}$	P
	Induction heating sources are supplied with a voltage of 1,06 times the rated voltage. (IEC 60335-2-49/A1)	No induction heating sources	N/A
19.4	Test conditions as in clause 11, any control limiting the temperature during tests of clause 11 short-circuited		P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	The main contacts of the contactor intended for switching on and off the heating elements in normal use are locked in "ON" position. However, if two contactors operate independently of each other or if one contactor operates two independent sets of main contacts, these contacts are locked in "ON" position in turn. (IEC 60335-2-49)	No contactor	N/A
19.5	Test of 19.4 repeated on Class 0I and I appliances with tubular sheathed or embedded heating elements. No short-circuiting, but one end of the element connected to the sheath		N/A
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		N/A
	The test is not carried out on appliances intended to be permanently connected to fixed wiring and on appliances where an all-pole disconnection occurs during the test of 19.4	Non-self-resetting thermal cut-out with all-pole disconnection is used	P
19.6	Appliances with PTC heating elements tested at rated voltage, establishing steady conditions	No PTC heating element	N/A
	The working voltage of the PTC heating element is increased by 5% and the appliance is operated until steady conditions are re-established. The voltage is then increased in similar steps until 1.5 times working voltage or until the PTC heating element ruptures (V)		N/A
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque, or	No moving parts	N/A
	locking moving parts of other appliances		N/A
	Locked rotor, capacitors open-circuited one at a time		N/A
	Test repeated with capacitors short-circuited one at a time, unless		N/A
	capacitor is of class P2 of IEC 60252-1		N/A
	Appliances with timer or programmer supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed		N/A
	An electronic timer or programmer that operates to ensure compliance with the test before the maximum period under the conditions of Clause 11 is reached, is a protective electronic circuit	No timer to ensure compliance	N/A
	Other appliances supplied with rated voltage for a period as specified		N/A
	Winding temperatures not exceeding values specified in table 8	(see appended table)	N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
19.8	Compliance is checked as for 19.7 (IEC 60335-2-49)	No moving parts	N/A
19.9	Running overload test on appliances incorporating motors intended to be remotely or automatically controlled or liable to be operated continuously	No motors	N/A
	Motor-operated and combined appliances for which 30.2.3 is applicable and that use overload protective devices relying on electronic circuits to protect the motor windings, are also subjected to the test		N/A
	Winding temperatures not exceeding values as specified	(see appended table)	N/A
19.10	Series motor operated at 1.3 times rated voltage for 1 min (V).....	No motors	N/A
	During the test, parts not being ejected from the appliance		N/A
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless		P
	they comply with the conditions specified in 19.11.1	No low-power circuit	N/A
	Appliances incorporating an electronic circuit that relies upon a programmable component to function correctly, subjected to the test of 19.11.4.8, unless		P
	restarting does not result in a hazard		P
	Appliances having a device with an off position obtained by electronic disconnection, or a device placing the appliance in a stand-by mode, subjected to the tests of 19.11.4		N/A
	If the safety of the appliance under any of the fault conditions depends on the operation of a miniature fuse-link complying with IEC 60127, the test of 19.12 is carried out		P
	During and after each test the following is checked:		P
	- the temperature of the windings do not exceed the values specified in table 8		P
	- the appliance complies with the conditions specified in 19.13		P
	- any current flowing through protective impedance not exceeding the limits specified in 8.1.4	No protective impedance	N/A
	If a conductor of a printed board becomes open-circuited, the appliance is considered to have withstood the particular test, provided both of the following conditions are met:		N/A
	- the base material of the printed circuit board withstands the test of Annex E		N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	- any loosened conductor does not reduce clearance or creepage distances between live parts and accessible metal parts below the values specified in clause 29		N/A
19.11.1	Fault conditions a) to g) in 19.11.2 are not applied to circuits or parts of circuits meeting both of the following conditions:		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	No low power circuit	N/A
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction of other parts of the appliance does not rely on the correct functioning of the electronic circuit		N/A
19.11.2	Fault conditions applied one at a time, the appliance operating under conditions specified in clause 11, but supplied at rated voltage, duration of the tests as specified:		P
	a) short circuit of functional insulation if clearances or creepage distances are less than the values specified in clause 29		P
	b) open circuit at the terminals of any component		P
	c) short circuit of capacitors, unless		P
	they comply with IEC 60384-14	No capacitors complying with IEC 60384-14	N/A
	d) short circuit of any two terminals of an electronic component, other than integrated circuits		P
	This fault condition is not applied between the two circuits of an optocoupler	No optocouplers	N/A
	e) failure of triacs in the diode mode	No triacs	N/A
	f) failure of microprocessors and integrated circuits		P
	g) failure of an electronic power switching device		N/A
	Each low power circuit is short-circuited by connecting the low-power point to the pole of the supply source from which the measurements were made	No low power circuit	N/A
19.11.3	If the appliance incorporates a protective electronic circuit which operates to ensure compliance with clause 19, the relevant test is repeated with a single fault simulated, as indicated in a) to g) of 19.11.2	No protective electronic circuit	N/A
19.11.4	Appliances having a device with an off position obtained by electronic disconnection, or		P
	a device that can be placed in the stand-by mode,		N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	subjected to the tests of 19.11.4.1 to 19.11.4.7, the device being set in the off position or in the stand-by mode		N/A
	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, the tests being carried out after the protective electronic circuit has operated, except that		N/A
	appliances operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena.		N/A
	Surge protective devices disconnected, unless		N/A
	They incorporate spark gaps		N/A
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4		N/A
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, test level 3		N/A
19.11.4.3	The appliance is subjected to fast transient bursts in accordance with IEC 61000-4-4, test level 3 or 4 as specified		N/A
19.11.4.4	The power supply terminals of the appliance subjected to voltage surges in accordance with IEC 61000-4-5, test level 3 or 4 as specified		N/A
	An open circuit test voltage of 2 kV is applicable for the line-to-line coupling mode		N/A
	An open circuit test voltage of 4 kV is applicable for the line-to-earth coupling		N/A
	Earthed heating elements in class I appliances disconnected		N/A
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3		N/A
19.11.4.6	Appliances having a rated current not exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-11		N/A
	Appliances having a rated current exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-34		N/A
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2		N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
19.11.4.8	The appliance is supplied at rated voltage and operated under normal operation. After 60s the power supply is reduced to a level such that the appliance ceases to respond or parts controlled by the programmable component cease to operate		P
	The appliance continues to operate normally, or		P
	requires a manual operation to restart		N/A
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 60127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A)	Measured current during short circuits on PCB > 45 A; Rated current of fuse-link: 5 A; 8 A; 12,5 A; 16 A	P
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		P
	Temperature rises not exceeding the values shown in table 9	(see appended table)	P
	Compliance with clause 8 not impaired		P
	If the appliance can still be operated it complies with 20.2		P
	Insulation, other than of class III appliances or class III constructions that do not contain live parts, withstands the electric strength test of 16.3, the test voltage as specified in table 4:		P
	- basic insulation (V)	1000 V	P
	- supplementary insulation (V)	1750 V	P
	- reinforced insulation (V).....	3000 V	P
	For appliances incorporating induction heating sources having working voltages above 250 V, the following test voltages apply: (IEC 60335-2-49/A1)	No induction heating elements	N/A
	The temperature of the induction windings shall not exceed the values specified in table 8. (IEC 60335-2-49/A1)	No induction windings	N/A
	After operation or interruption of a control, clearances and creepage distances across the functional insulation withstand the electric strength test of 16.3, the test voltage being twice the working voltage	480 V	P
	The appliance does not undergo a dangerous malfunction, and		P
	no failure of protective electronic circuits, if the appliance is still operable	No protective electronic circuit	N/A
	Appliances tested with an electronic switch in the off position, or in the stand-by mode:		N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	- do not become operational, or		N/A
	- if they become operational, do not result in a dangerous malfunction during or after the tests of 19.11.4		N/A
	If the appliance contains lids or doors that are controlled by one or more interlocks, one of the interlocks may be released provided that:		N/A
	- the lid or door does not move automatically to an open position when the interlock is released, and	No interlock	N/A
	- the appliance does not start after the cycle in which the interlock was released		N/A
19.14	Appliances operated under the conditions of clause 11, any contactor or relay contact operating under the conditions of clause 11 being short-circuited	Short-circuit of relay	P
	For a relay or contactor with more than one contact, all contacts are short-circuited at the same time	One contact	N/A
	A relay or contactor operating only to ensure the appliance is energized for normal use is not short-circuited		N/A
	If more than one relay or contactor operates in clause 11, they are short-circuited in turn	One relay	N/A
19.15	For appliances with a mains voltage selector switch, the switch is set to the lowest rated voltage position and the highest value of rated voltage is applied	No mains voltage selector switch	N/A
19.101	Appliances incorporating induction heating sources shall be constructed so that the risk of fire, mechanical hazard or electric shock is obviated as far as is practicable in the event of incorrect operation or the development of defects in control devices or circuit components. (IEC 60335-2-49/A1)	No induction heating sources	N/A
19.102	Appliances incorporating induction heating sources are constructed so that a small piece of metal being situated on a coil carrier shall not cause the temperature of the windings of this coil carrier to exceed. (IEC 60335-2-49/A1)	No induction heating sources	N/A
19.103	For radiant heaters, the limit of 125 K temperature rise applies to the areas, including walls, which are reached by the radiation. If this temperature rise limit is exceeded, the requirements of 7.102 apply (IEC 60335-2-49/A1)	No radiant heaters	N/A
20	STABILITY AND MECHANICAL HAZARDS		P
20.1	Appliances having adequate stability		P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	Tilting test through an angle of 10°, appliance placed on an inclined plane/horizontal support, not connected to the supply mains; appliance does not overturn		P
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°		P
	Appliances provided with doors, covers or lids, racks and other accessories are tested with doors open or closed, racks partially or fully extended, with or without covers or lids or other accessories, whichever is the more unfavourable. (IEC 60335-2-49)		P
	Appliance provided with wheels or similar means are also subjected to the following test: (IEC 60335-2-49)	HHB and HHT series	P
	Crockery dispenser are loaded with dishes so that the load obtained is equal to one-third of the load declared by the manufacturer. (IEC 60335-2-49)	No crockery dispenser	N/A
	The load is placed on the highest usable parts of the appliance. The dishes used are as specified in IEC 436 (IEC 60335-2-49)		N/A
	If special dishes are specified by the manufacturer, these are used. (IEC 60335-2-49)		N/A
	Other appliances are loaded with one-third of the load declared by the manufacturer, placed on the highest usable parts of the appliance. (IEC 60335-2-49)	Test was performed on model HHT282E; max. load declared by manufacturer 163 kg; used was 1/3 of declared: 54,3 kg	P
	Appliances provided with doors, covers or lids and other accessories are tested with door open or closed, with or without covers or lids or other accessories, whichever is the more unfavourable. (IEC 60335-2-49)		P
	The appliance is then placed in the most unfavourable position against an edge with a height equal to the radius of the wheels plus 10 mm. If the wheels differ in size, the edge height which is the most unfavourable is chosen. (IEC 60335-2-49)	The height of the edge 85 mm (radius of the wheels 75 mm)	P
	A force equal to 8 % of the mass of the fully loaded appliance is applied horizontally to the middle of the top edge of the appliance but not higher than 900 mm, in the most unfavourable direction. (IEC 60335-2-49)	Force 215 N	P
	Possible heating test in overturned position; temperature rise does not exceed values shown in table 9	Appliances do not overturns	N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
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, and		N/A
	have adequate mechanical strength		N/A
	Enclosures that can be opened by overriding an interlock are considered to be detachable parts	No interlocks	N/A
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard by unexpected closure		P
	Not possible to touch dangerous moving parts with the test probe described	No moving parts	N/A
	Moving parts of motor and fan assemblies of appliances where the fan motor can be operated when the door is open shall be arranged or enclosed so that adequate protection against injury is provided during normal use including cleaning. (IEC 60335-2-49)	No moving parts	N/A
20.101	Guards fitted over motor and fan assemblies in order to comply with the requirements of 20.2 shall not be detachable unless: (IEC 60335-2-49)	No motors	N/A
	- a suitable interlock assembly is fitted which prevents the motor or fan from operating when the guard is removed (IEC 60335-2-49)		N/A
	- the guard forms an integral parts of the internal lining (IEC 60335-2-49)		N/A
21	MECHANICAL STRENGTH		P
21.1	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		P
	Checked by applying 3 blows to every point of the enclosure like to be weak, in accordance with test Ehb of IEC 60068-2-75, spring hammer test, with an impact energy of 0,5 J	(see appended table)	P
	The appliance shows no damage impairing compliance with this standard, and		P
	compliance with 8.1, 15.1 and clause 29 not impaired		P
	If doubt, supplementary or reinforced insulation subjected to the electric strength test of 16.3		N/A
	If necessary, repetition of groups of three blows on a new sample		N/A
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements		P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	Test not applicable if the thickness of supplementary insulation is at least 1 mm and reinforced insulation at least 2 mm		P
	The insulation is tested as specified, and does withstand the electric strength test of 16.3		N/A
22	CONSTRUCTION		P
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled	IPX4	P
22.2	Stationary appliance: means to ensure all-pole disconnection from the supply being provided:		P
	- a supply cord fitted with a plug, or		P
	- a switch complying with 24.3, or		N/A
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided, or		N/A
	- an appliance inlet		N/A
	Single-pole switches and single-pole protective devices for the disconnection of heating elements in single-phase, permanently connected class 01 and class I appliances, connected to the phase conductor		N/A
22.3	Appliance provided with pins: no undue strain on socket-outlets		N/A
	Applied torque not exceeding 0.25 Nm		N/A
	Pull force of 50N to each pin after the appliance has being placed in the heating cabinet; when cooled to room temperature the pins are not displaced by more than 1mm		N/A
	Each pin subjected to a torque of 0.4Nm; the pins are not rotating, unless		N/A
	rotating does not impair compliance with this standard		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, for appliances having a capacitor with rated capacitance equal to or greater than 0,1 µF, the appliance being disconnected from the supply at the instant of voltage peak	No capacitor permanently subjected to the supply voltage	N/A
	Voltage not exceeding 34 V (V)		N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	If compliance relies on the operation of an electronic circuit, the electromagnetic phenomena tests of 19.11.4.3 and 19.11.4.4 are applied		N/A
	The discharge test is then repeated three times, voltage not exceeding 34 V (V).....:		N/A
22.6	Electrical insulation not affected by condensing water or leaking liquid		P
	Electrical insulation of Class II appliances not affected if a hose ruptures or seal leaks		N/A
	In case of doubt, test as described		N/A
22.7	Adequate safeguards against the risk of excessive pressure in appliances containing liquid or gases or having steam-producing devices		N/A
22.8	Electrical connections not subject to pulling during cleaning of compartments to which access can be gained without the aid of a tool, and that are likely to be cleaned in normal use		P
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances, unless		P
	the substance has adequate insulating properties		N/A
22.10	Not possible to reset voltage-maintained non-self-resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance, if:	No voltage-maintained non-self-resetting thermal cut-outs	N/A
	- a non-self-resetting thermal cut-out is required by the standard, and		N/A
	- a voltage maintained non-self-resetting thermal cut-out is used to meet it		N/A
	Non-self-resetting thermal motor protectors have a trip-free action, unless		N/A
	they are voltage maintained		N/A
	Reset buttons of non-self-resetting controls so located or protected that accidental resetting is unlikely	Reset button of thermal cut-out is protected against accidental resetting.	P
22.11	Reliable fixing of non-detachable parts that provide the necessary degree of protection against electric shock, moisture or contact with moving parts		P
	Obvious locked position of snap-in devices used for fixing such parts	Snap-in of the handles for carrying the oven at HSH and HSW series.	P
	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing	No removal of the handles during installation or servicing	N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	Tests as described	Push 50 N; pull 50 N	P
22.12	Handles, knobs etc. fixed in a reliable manner		P
	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible		P
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied		N/A
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied	Handles for carrying the oven at HSH and HSW models and handles for moving the HHT and HHB models.	P
22.13	Unlikely that handles, when gripped as in normal use, make the operator's hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only	No excessive temperatures	P
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		P
	No exposed pointed ends of self-tapping screws or other fasteners, likely to be touched by the user in normal use or during user maintenance		P
22.15	Storage hooks and the like for flexible cords smooth and well rounded	HHT and HHB models are provided with the storage hook.	P
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands and no undue wear of contacts	No cord reel	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	No spacers	N/A
22.18	Current-carrying parts and other metal parts resistant to corrosion		P
22.19	Driving belts not relied upon to provide the required level of insulation, unless	No driving belts	N/A
	constructed to prevent inappropriate replacement		N/A
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless		P
	material used is non-corrosive, non-hygroscopic and non-combustible		P
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless		P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	impregnated		P
	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements	Embedded heating elements	N/A
22.22	Appliances not containing asbestos		P
22.23	Oils containing polychlorinated biphenyl (PCB) not used		N/A
22.24	Bare heating elements, except in class III appliances or class III constructions that do not contain live parts, adequately supported	No bare heating elements	N/A
	In case of rupture, the heating conductor is unlikely to come in contact with accessible metal parts		N/A
22.25	Sagging heating conductors, except in class III appliances or class III constructions that do not contain live parts, cannot come into contact with accessible metal parts	Heating element is insulated by basic insulation	P
22.26	For class III constructions the insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation		P
22.27	Parts connected by protective impedance separated by double or reinforced insulation	No protective impedance	N/A
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	Class I appliance	N/A
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of access to live parts is maintained after installation	Class I appliance provided with supply cord fitted with a plug.	N/A
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or		P
	so constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly incomplete		P
22.31	Neither clearances nor creepage distances over supplementary and reinforced insulation reduced below values specified in clause 29 as a result of wear		P
	Neither clearances nor creepage distances between live parts and accessible parts reduced below values for supplementary insulation if wires, screws etc. become loose		P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
22.32	Supplementary and reinforced insulation constructed or protected against pollution so that clearances or creepage distances are not reduced below the values in clause 29		P
	Supplementary insulation of natural or synthetic rubber resistant to ageing, or arranged and dimensioned so that creepage distances are not reduced below values specified in 29.2	Supplementary insulation not provided with rubber material	N/A
	Ceramic material not tightly sintered, similar materials or beads alone not used as supplementary or reinforced insulation		N/A
	Ceramic and similar porous material in which heating conductors are embedded is considered to be basic insulation, not reinforced insulation	Heating element is embedded in basic insulation.	P
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature		N/A
22.33	Conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts are not in direct contact with live parts		N/A
	unearthed metal parts separated from live parts by basic insulation only		N/A
	Electrodes not used for heating liquids		N/A
	For class II constructions, conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts, not in direct contact with basic or reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	For class II constructions, conductive liquids which are in contact with live parts, not in direct contact with reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	An air layer not used as basic or supplementary insulation in a double insulation system if likely to be bridged by leaking liquid		N/A
22.34	Shafts of operating knobs, handles, levers etc. not live, unless		P
	the shaft is not accessible when the part is removed		N/A
22.35	For other than class III constructions, handles, levers and knobs, held or actuated in normal use, not becoming live in the event of a failure of basic insulation		P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
	Such parts being of metal, and their shafts or fixings are likely to become live in the event of a failure of basic insulation, are either adequately covered by insulation material or their accessible parts are separated from their shafts or fixings by supplementary insulation		P
	This requirement does not apply to handles, levers and knobs on stationary appliances and cordless appliances, other than those of electrical components, provided they are reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal		P
	Insulating material covering metal handles, levers and knobs withstand the electric strength test of 16.3 for supplementary insulation		P
22.36	For appliances other than class III, handles continuously held in the hand in normal use so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless	No handles continuously held	N/A
	they are separated from live parts by double or reinforced insulation		N/A
22.37	Capacitors in Class II appliances not connected to accessible metal parts and their casings, if of metal, separated from accessible metal parts by supplementary insulation, unless		N/A
	the capacitors comply with 22.42		N/A
22.38	Capacitors not connected between the contacts of a thermal cut-out		N/A
22.39	Lamp holders used only for the connection of lamps	No lamps	N/A
22.40	Motor-operated appliances and combined appliances intended to be moved while in operation, or having accessible moving parts, fitted with a switch to control the motor. The actuating member of the switch being easily visible and accessible	Heating appliance	N/A
	If the appliance cannot operate continuously, automatically or remotely without giving rise to a hazard, appliances for remote operation being fitted with a switch for stopping the operation. The actuating member of the switch being easily visible and accessible		N/A
22.41	No components, other than lamps, containing mercury		N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
22.42	Protective impedance consisting of at least two separate components	No protective impedance, transformer is used for separation between live and SELV parts	N/A
	Values specified in 8.1.4 not exceeded if any one of the components are short-circuited or open-circuited		N/A
	Resistors checked by the test of 14.1 a) in IEC 60065		N/A
	Capacitors checked by the tests for class Y capacitors in IEC 60384-14		N/A
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur	Appliance is not intended to be adjusted for different voltages	N/A
22.44	Appliances not having an enclosure that is shaped or decorated like a toy		P
22.45	When air is used as reinforced insulation, clearances not reduced below the values specified in 29.1.3 due to deformation as a result of an external force applied to the enclosure		P
22.46	For programmable protective electronic circuits used to ensure compliance with the standard, the software contains measures to control the fault/error conditions in table R.1	No protective electronic circuit	N/A
	Software that contains measures to control the fault/error conditions specified in table R.2 is to be specified in parts 2 for particular constructions or to address specific hazards		N/A
	These requirements are not applicable to software used for functional purpose or compliance with clause 11		N/A
22.47	Appliances connected to the water mains withstand the water pressure expected in normal use	No connection to water mains	N/A
	No leakage from any part, including any inlet water hose		N/A
22.48	Appliances connected to the water mains constructed to prevent backsiphonage of non-potable water		N/A
22.49	For remote operation, the duration of operation is to be set before the appliance can be started, unless	No remote operation	N/A
	the appliance switches off automatically or can operate continuously without hazard		N/A
22.50	Controls incorporated in the appliance take priority over controls actuated by remote operation	No remote operation	N/A

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
22.51	There is a control on the appliance manually adjusted to the setting for remote operation before the appliance can be operated in this mode	No remote operation	N/A
	There is a visual indication showing that the appliance is adjusted for remote operation		N/A
	These requirements not necessary on appliances that can operate as follows, without giving rise to a hazard:		N/A
	- continuously, or		N/A
	- automatically, or		N/A
	- remotely		N/A
22.52	Socket-outlets on appliances accessible to the user in accordance with the socket-outlet system used in the country in which the appliance is sold	No socket-outlets	N/A
22.53	Class II appliances and class III appliances that incorporate functionally earthed parts have at least double insulation or reinforced insulation between live parts and the functionally earthed parts	Class I appliance	N/A
22.54	Button cells and batteries designated R1 not accessible without the aid of a tool, unless	No batteries	N/A
	the cover of their compartment can only be opened after at least two independent movements have been applied simultaneously		N/A
22.101	For three-phase appliances, thermal cut-outs protecting circuits with heating elements, and those for motors of which the unexpected starting may cause a hazard, are of the non-self-resetting and trip-free type, and provide all-pole disconnection from related supply circuits. (IEC 60335-2-49/A1)		N/A
	For single-phase appliances and for single-phase heating elements and/or motors connected between one phase and neutral or between phase and phase, thermal cut-outs protecting circuits with heating elements, and those for motors of which the unexpected starting may cause a hazard, shall be of the non-self-resetting and trip-free type, and shall provide at least one-pole disconnection. (IEC 60335-2-49/A1)	Single phase appliances with non-self-resetting and trip-free type of thermal cut-out.	P
	If the non-self-resetting thermal cut-out is only accessible after removing parts with the aid of a tool, the trip-free type is not required.(IEC 60335-2-49/A1)	Trip-free non-self-resetting thermal cut-out is accessible after the removal of screw at the back side.	P
	Thermal cut-outs of the bulb and capillary type that operate during the tests of Clause 19 shall be such that rupture of the capillary tube shall not impair compliance with the requirements of 19.13. (IEC 60335-2-49/A1)		P

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
22.102	Lights, switches or push-buttons be coloured red for the indication of danger, alarm or similar situations (IEC 60335-2-49)	No danger situations	N/A
22.103	Appliances fitted with wheels or similar means shall be provided with an efficient means of locking while the appliance is stationary. (IEC 60335-2-49)	HHT and HHB series are provided with the wheels with locking means	P
	The appliance, fully loaded, is placed on a rigid plane coated with aluminium oxide paper (grain size 80) and inclined at 10° to the horizontal, with the locking mechanism applied. The appliance shall not move by more than 100 mm. (IEC 60335-2-49/A1)	Test was performed on HHT282E. The appliance does not move at the conditions specified.	P
22.104	Portable appliances shall not have openings on the underside that would allow small items to penetrate and touch live (IEC 60335-2-49)	No openings on the bottom side of the appliances.	P
	This distance shall be at least 6 mm. However, if the appliance is fitted with legs, this distance is increased to 10 mm if the appliance is intended to stand on the table and to 20 mm if it is intended to stand on the floor. (IEC 60335-2-49)	No openings on the bottom side of the appliances.	N/A
22.105	Induction heating sources shall have adequate visual or audible warning that the control is in the "ON" position. (IEC 60335-2-49/A1)	No induction heating sources	N/A
23	INTERNAL WIRING		P
23.1	Wireways smooth and free from sharp edges		P
	Wires protected against contact with burrs, cooling fins etc.		P
	Wire holes in metal well-rounded or provided with bushings	Over the internal wiring are added additional sleeves to protect the wiring insulation.	P
	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		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		N/A
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	No damage after 10 000 flexings for conductors flexed during normal use, or		N/A
	100 flexings for conductors flexed during user maintenance		N/A
	Electric strength test of 16.3, 1000 V between live parts and accessible metal parts		N/A
	Not more than 10% of the strands of any conductor broken, and		N/A
	not more than 30% for wiring supplying circuits that consume no more than 15W		N/A
	When the capillary tube is liable to flexing in normal use the following applies: (IEC 60335-2-49)		N/A
	- where the capillary tube is fitted as part of the internal wiring, Part 1 applies: (IEC 60335-2-49)	Capillary tube of thermal cut-out is not liable to flexing	N/A
	- where the capillary tube is separate, it is subjected to 1000 flexings at a rate not exceeding 30 per minute: (IEC 60335-2-49)		N/A
	- after the test: no sign of damage and no damage impairing its further use: (IEC 60335-2-49)		N/A
	However, if a rupture of the capillary tube renders the appliance inoperative (fail-save), separate capillary tube are not tested, and those fitted as part of the internal wiring are not inspected for compliance with the requirements:(IEC 60335-2-49)		N/A
	Compliance in this instance is checked by rupturing the capillary tube (IEC 60335-2-49)		N/A
23.4	Bare internal wiring sufficiently rigid and fixed	No bare internal wiring	N/A
23.5	The insulation of internal wiring subjected to the supply mains voltage withstanding the electrical stress likely to occur in normal use		P
	Basic insulation electrically equivalent to the basic insulation of cords complying with IEC 60227 or IEC 60245, or		P
	no breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation	The test was also applied on the insulation of heating conductor	P
	For class II construction, the requirements for supplementary insulation and reinforced insulation apply,		P
	except that the sheath of a cord complying with IEC 60227 or IEC 60245 may provide supplementary insulation.		P
	A single layer of internal wiring insulation does not provide reinforced insulation		P

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Clause	Requirement + Test	Result - Remark	Verdict
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by clamping at both ends, or	Clamping is added at both ends of sleeveings	P
	be such that it can only be removed by breaking or cutting		P
23.7	The colour combination green/yellow only used for earthing conductors		P
23.8	Aluminium wires not used for internal wiring	No aluminium wires	N/A
23.9	Stranded conductors not consolidated by soldering where they are subjected to contact pressure, unless		P
	the contact pressure is provided by spring terminals		N/A
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52)	No external hoses	N/A
24	COMPONENTS		P
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components..... :	(see appended table)	P
	Motors not required to comply with IEC 60034-1, they are tested as part of the appliance	No motors	N/A
	Relays tested as part of the appliance, or		N/A
	alternatively acc. to IEC 60730-1, and meeting the additional requirements in IEC 60335-1	Separately approved	P
	The requirements of Clause 29 apply between live parts of components and accessible parts of the appliance		P
	Components can comply with the requirements for clearances and creepage distances for functional insulation in the relevant component standard		P
	30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections		P
	Components that have not been previously tested to comply with the IEC standard for the relevant component are tested according to the requirements of 30.2		P
	Components that have been previously tested to comply with the resistance to fire requirements in the IEC standard for the relevant component need not be retested provided the specified conditions are met		P

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Clause	Requirement + Test	Result - Remark	Verdict
	If these conditions are not satisfied, the component is tested as part of the appliance.		P
	Power electronic converter circuits not required to comply with IEC 62477-1, they are tested as part of the appliance	No power electronic converter	N/A
	If components have not been tested and found to comply with relevant IEC standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9		P
	For components mentioned in 24.1.1 to 24.1.9 no additional tests specified in the relevant component standard are necessary other than those specified in 24.1.1 to 24.1.9		P
	Components not tested and found to comply with relevant IEC standard and components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance		P
	Lampholders and starterholders that have not being tested and found to comply with the relevant IEC standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant IEC standard	No lamp holders and starter holders	N/A
	No additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of IEC 60320-1 and IEC 60309		N/A
24.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, complying with IEC 60384-14	No capacitors permanently subjected to the supply voltage	N/A
	If the capacitors have to be tested, they are tested according to Annex F		N/A
24.1.2	Transformers in associated switch mode power supplies comply with Annex BB of IEC 61558-2-16		N/A
	Safety isolating transformers complying with IEC 61558-2-6	Transformers complies with IEC 61558-2-6	P
	If they have to be tested, they are tested according to Annex G		N/A
24.1.3	Switches complying with IEC 61058-1, the number of cycles of operation being at least 10 000		N/A
	If they have to be tested, they are tested according to Annex H		N/A
	If the switch operates a relay or contactor, the complete switching system is subjected to the test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If the switch only operates a motor starting relay complying with IEC 60730-2-10 with the number of cycles of a least 10 000 as specified, the complete switching system need not be tested		N/A
24.1.4	Automatic controls complying with IEC 60730-1 with the relevant part 2. The number of cycles of operation being at least:		P
	- thermostats: 10 000		N/A
	- temperature limiters: 1 000		N/A
	- self-resetting thermal cut-outs: 300		N/A
	- voltage maintained non-self-resetting thermal cut-outs: 1 000		N/A
	- other non-self-resetting thermal cut-outs: 30		P
	- timers: 3 000		N/A
	- energy regulators: 10 000		N/A
	The number of cycles for controls operating during clause 11 need not be declared, if the appliance meets the requirements of this standard when they are short-circuited		N/A
	Thermal motor protectors are tested in combination with their motor under the conditions specified in Annex D	No motors	N/A
	For water valves containing live parts and that are incorporated in external hoses for connection of an appliance to the water mains, the degree of protection declared for subclause 6.5.2 of IEC 60730-2-8 is IPX7	No water valves	N/A
	Thermal cut-outs of the capillary type comply with the requirements for type 2.K controls in IEC 60730-2-9		P
24.1.5	Appliance couplers complying with IEC 60320-1	No appliance couplers	N/A
	However, for class II appliances classified higher than IPX0, the appliance couplers comply with IEC 60320-2-3		N/A
	Interconnection couplers complying with IEC 60320-2-2		N/A
24.1.6	Small lamp holders similar to E10 lampholders complying with IEC 60238, the requirements for E10 lampholders being applicable		N/A
24.1.7	For remote operation of the appliance via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is IEC 62151	No remote operation	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
24.1.8	The relevant standard for thermal links is IEC 60691	No thermal link	N/A
	Thermal links not complying with IEC 60691 are considered to be an intentionally weak part for the purposes of Clause 19		N/A
24.1.9	Contactors and relays, other than motor starting relays, tested as part of the appliance	Relay was separately tested and certified	P
	They are also tested in accordance with Clause 17 of IEC 60730-1, the number of cycles of operations in 24.1.4 selected according to the contactor or relay function in the appliance.....:		N/A
24.2	Appliances not fitted with:		P
	- switches or automatic controls in flexible cords		P
	- devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance		P
	- thermal cut-outs that can be reset by soldering, unless		P
	the solder has a melting point of at least 230 °C		N/A
24.3	Switches intended for all-pole disconnection of stationary appliances are directly connected to the supply terminals and have a contact separation in all poles, providing full disconnection under overvoltage category III conditions		N/A
24.4	Plugs and socket-outlets for extra-low voltage circuits and heating elements, not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1	No plugs and socket-outlets for extra-low voltage circuits	N/A
24.5	Capacitors in auxiliary windings of motors marked with their rated voltage and capacitance, and used accordingly	No motors	N/A
	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load		N/A
24.6	Working voltage of motors connected to the supply mains and having basic insulation that is inadequate for the rated voltage of the appliance, not exceeding 42 V	No motors	N/A
	In addition, the motors comply with the requirements of Annex I		N/A
24.7	Detachable hose-sets for connection of appliances to the water mains comply with IEC 61770	No hoses	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	They are supplied with the appliance		N/A
	Appliances intended to be permanently connected to the water mains not connected by a detachable hose-set		N/A
24.8	Motor running capacitors in appliances for which 30.2.3 is applicable and that are permanently connected in series with a motor winding, not causing a hazard in event of a failure	No motors	N/A
	One or more of the following conditions are to be met:		N/A
	- the capacitors are of class P2 according to IEC 60252-1		N/A
	- the capacitors are housed within a metallic or ceramic enclosure		N/A
	- the distance of separation of the outer surface to adjacent non-metallic parts exceeds 50 mm		N/A
	- adjacent non-metallic parts within 50 mm withstand the needle-flame test of Annex E		N/A
	- adjacent non-metallic parts within 50 mm classified as at least V-1 according to IEC 60695-11-10		N/A
24.101	Connectors fitted to appliances shall not incorporate a thermostat. (IEC 60335-2-49)	No connectors	N/A
25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS		P
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		P
	- supply cord fitted with a plug, the current rating and voltage rating of the plug being not less than the corresponding ratings of its associated appliance		P
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance, or		N/A
	- pins for insertion into socket-outlets		N/A
25.2	Appliance not provided with more than one means of connection to the supply mains		P
	Stationary appliance for multiple supply may be provided with more than one means of connection, provided electric strength test of 1250 V for 1 min between each means of connection causes no breakdown	No multiple supply	N/A
25.3	Appliance intended to be permanently connected to fixed wiring provided with one of the following means for connection to the supply mains:		N/A
	- a set of terminals allowing the connection of a flexible cord		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- a fitted supply cord		N/A
	- a set of supply leads accommodated in a suitable compartment		N/A
	- a set of terminals for the connection of cables of fixed wiring, cross-sectional areas specified in 26.6, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	- a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate types of cable or conduit, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	For a fixed appliance constructed so that parts can be removed to facilitate easy installation, this requirement is met if it is possible to connect the fixed wiring without difficulty after a part of the appliance has been fixed to its support		N/A
	Fixed appliance and appliances with a mass greater than 40 kg and not provided with rollers or castors, constructed so that the supply cord can be connected after the appliance has been installed in accordance with the manufacturer's instructions (IEC 60335-2-49)	Appliances are provided with supply cord fitted with a plug.	N/A
	Terminals for permanent connection of cables to fixed wiring, suitable for the type X attachment of a supply cord. Cord anchorage complying with 25.16 fitted in the appliance. (IEC 60335-2-49)	Appliances are provided with supply cord fitted with a plug.	N/A
	Appliance provided with a set of terminals allowing the connection of a flexible cord, suitable for the type X attachment (IEC 60335-2-49)		N/A
	Instruction sheets give full particulars of power supply cord (IEC 60335-2-49)	Appliances are provided with supply cord fitted with a plug; in the instructions are stated types of power cords.	N/A
25.4	The connection to the supply wires, built-in appliance may be made before the appliance is installed (IEC 60335-2-49)	Appliances are provided with supply cord fitted with a plug.	N/A
	Introduction of conduit or cable does not reduce clearances or creepage distances below values specified in clause 29		N/A
25.5	Method for assembling the supply cord to the appliance:		P
	- type X attachment		N/A
	- type Y attachment		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- type Z attachment, if allowed in relevant part 2		N/A
	Type X attachment, other than those with a specially prepared cord, not used for flat twin tinsel cords		N/A
	For multi-phase appliances supplied with a supply cord and that are intended to be permanently connected to fixed wiring, the supply cord is assembled to the appliance by type Y attachment	One phase appliances	N/A
25.6	Plugs fitted with only one flexible cord		P
25.7	Supply cords, other than for class III appliances, being one of the following types:		P
	The supply cords is oil-resistant and not lighter than ordinary poly chloroprene (60245 IEC 57) (IEC 60335-2-49)	- For rated current < 10 A: H05RN-F - For rated current > 10 A H07RN-F	P
	Supply cords for class III appliances adequately insulated		N/A
	Test with 500 V for 2 min for supply cords of class III appliances that contain live parts		N/A
25.8	Nominal cross-sectional area of supply cords not less than table 11; rated current (A); cross-sectional area (mm ²)	- For rated current < 10 A: 3 x 1,0 mm ² - For rated current > 10 A 3 x 1,5 mm ²	P
25.9	Supply cords not in contact with sharp points or edges		P
25.10	Supply cord of class I appliances have a green/yellow core for earthing		P
	In multi-phase appliances, the colour of the neutral conductor of the supply cord is blue.	Single phase appliances	N/A
25.11	Conductors of supply cords not consolidated by soldering where they are subject to contact pressure, unless	No soldering	P
	the contact pressure is provided by spring terminals		N/A
25.12	Insulation of the supply cord not damaged when moulding the cord to part of the enclosure		P
25.13	Inlet openings so constructed as to prevent damage to the supply cord		P
	If it is not evident that the supply cord can be introduced without risk of damage, a non-detachable lining or bushing complying with 29.3 for supplementary insulation provided		N/A
	If the enclosure at the inlet opening is not of insulating material, a non-detachable lining or bushing complying with 29.3 for supplementary insulation provided	Screw gland made of insulation material is used	P

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Clause	Requirement + Test	Result - Remark	Verdict
	If unsheathed supply cord, a similar additional bushing or lining is required, unless the appliance is		N/A
	class 0, or		N/A
	a class III appliance not containing live parts		N/A
25.14	Supply cords moved while in operation adequately protected against excessive flexing	Cord is not intended to be moved during operation	N/A
	Flexing test, as described:		N/A
	- applied force (N).....:		N/A
	- number of flexings.....:		N/A
	The test does not result in:		N/A
	- short-circuit between the conductors, such that the current exceeds a value of twice the rated current		N/A
	- breakage of more than 10% of the strands of any conductor		N/A
	- separation of the conductor from its terminal		N/A
	- loosening of any cord guard		N/A
	- damage to the cord or the cord guard		N/A
	- broken strands piercing the insulation and becoming accessible		N/A
25.15	For appliances with supply cord and appliances to be permanently connected to fixed wiring by a flexible cord, conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorage	Supply cord fitted with a plug	P
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		P
	Pull and torque test of supply cord:		P
	- fixed appliances: pull 100 N; torque (not on automatic cord reel) (Nm)		N/A
	- other appliances: values shown in table 12: mass (kg); pull (N); torque (not on automatic cord reel) (Nm).....:	Stationary appliances: Mass > 22 kg; pull 100 N; torque 0,35 Nm	P
	Cord not damaged and max. 2 mm displacement of the cord		P
25.16	Cord anchorages for type X attachments constructed and located so that:		N/A
	- replacement of the cord is easily possible		N/A
	- it is clear how the relief from strain and the prevention of twisting are obtained		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- they are suitable for different types of supply cord		N/A
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless		N/A
	they are separated from accessible metal parts by supplementary insulation		N/A
	- the cord is not clamped by a metal screw which bears directly on the cord		N/A
	- at least one part of the cord anchorage securely fixed to the appliance, unless		N/A
	it is part of a specially prepared cord		N/A
	- screws which have to be operated when replacing the cord do not fix any other component, unless		N/A
	the appliance becomes inoperative or incomplete or the parts cannot be removed without a tool		N/A
	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood		N/A
	- for class 0, 0I and I appliances they are of insulating material or are provided with an insulating lining, unless		N/A
	failure of the insulation of the cord does not make accessible metal parts live		N/A
	- for class II appliances they are of insulating material, or		N/A
	if of metal, they are insulated from accessible metal parts by supplementary insulation		N/A
	After the test of 25.15, under the conditions specified, the conductors have not moved by more than 1 mm in the terminals		P
25.17	Adequate cord anchorages for type Y and Z attachment, test with the cord supplied with the appliance	Type Y attachment	P
25.18	Cord anchorages only accessible with the aid of a tool, or	Cord anchorage is located behind the rear cover	P
	Constructed so that the cord can only be fitted with the aid of a tool		P
25.19	Type X attachment, glands not used as cord anchorage in portable appliances	Stationary appliance provided with screw gland and cord anchorage	N/A
	Tying the cord into a knot or tying the cord with string not used		P
25.20	The conductors of the supply cord for type Y and Z attachment insulated from accessible metal parts		P

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Clause	Requirement + Test	Result - Remark	Verdict
25.21	Space for supply cord for type X attachment or for connection of fixed wiring constructed:		N/A
	- to permit checking of conductors with respect to correct positioning and connection before fitting any cover	Appliances are provided with supply cord fitted with a plug.	N/A
	- so there is no risk of damage to the conductors or their insulation when fitting the cover		N/A
	- for portable appliances, so that the uninsulated end of a conductor, if it becomes free from the terminal, prevented from contact with accessible metal parts		N/A
	2 N test to the conductor for portable appliances; no contact with accessible metal parts		N/A
25.22	Appliance inlets:		N/A
	- live parts not accessible during insertion or removal	No appliance inlets	N/A
	Requirement not applicable to appliance inlets complying with IEC 60320-1		N/A
	- connector can be inserted without difficulty		N/A
	- the appliance is not supported by the connector		N/A
	- not for cold conditions if temp. rise of external metal parts exceeds 75 K during clause 11, unless		N/A
	the supply cord is unlikely to touch such metal parts		N/A
25.23	Interconnection cords comply with the requirements for the supply cord, except that:	No interconnection cords	N/A
	- the cross-sectional area of the conductors is determined on the basis of the maximum current during clause 11		N/A
	- the thickness of the insulation may be reduced		N/A
	If necessary, electric strength test of 16.3		N/A
25.24	Interconnection cords not detachable without the aid of a tool if compliance with this standard is impaired when they are disconnected	No interconnection cords	N/A
25.25	Dimensions of pins that are inserted into socket-outlets compatible with the dimensions of the relevant socket-outlet.	No pins for insertion into socket-outlets	N/A
	Dimensions of pins and engagement face in accordance with the dimensions of the relevant plug in IEC/TR 60083		N/A
26	TERMINALS FOR EXTERNAL CONDUCTORS		P

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Clause	Requirement + Test	Result - Remark	Verdict
26.1	Appliances provided with terminals or equally effective devices for connection of external conductors		P
	Terminals only accessible after removal of a non-detachable cover, except	Terminals are accessible after removal of rear cover fixed by screws.	P
	for class III appliances that do not contain live parts		N/A
	Earthing terminals may be accessible if a tool is required to make the connections and means are provided to clamp the wire independently from its connection	Earthing terminals are not accessible	N/A
26.2	Appliances with type X attachment and appliances for the connection of cables to fixed wiring provided with terminals in which connections are made by means of screws, nuts or similar devices, unless	Type Y attachment	N/A
	the connections are soldered		N/A
	Screws and nuts not used to fix any other component, except		N/A
	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		N/A
	If soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone, unless		N/A
	barriers provided so that neither clearances nor creepage distances between live parts and other metal parts reduced below the values for supplementary insulation if the conductor becomes free at the soldered joint		N/A
26.3	Terminals for type X attachment and for connection of cables of fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure but without damaging the conductor	Type Y attachment	N/A
	Terminals fixed so that when the clamping means is tightened or loosened:		N/A
	- the terminal does not become loose		N/A
	- internal wiring is not subjected to stress		N/A
	- neither clearances nor creepage distances are reduced below the values in clause 29		N/A
	Compliance checked by inspection and by the test of subclause 9.6 of IEC 60999-1, the torque applied being equal to two-thirds of the torque specified (Nm).....:		N/A
	No deep or sharp indentations of the conductors		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
26.4	Terminals for type X attachment, except those having a specially prepared cord and those for the connection of cables of fixed wiring, no special preparation of conductors such as by soldering, use of cable lugs, eyelets or similar, and	Type Y attachment	N/A
	so constructed or placed that conductors prevented from slipping out when clamping screws or nuts are tightened		N/A
26.5	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection to other parts that result in a hazard	Type Y attachment	N/A
	Stranded conductor test, 8 mm insulation removed		N/A
	No contact between live parts and accessible metal parts and,		N/A
	for class II constructions, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N/A
26.6	Terminals for type X attachment and for connection of cables of fixed wiring suitable for connection of conductors with cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm ²).....:	Type Y attachment	N/A
	If a specially prepared cord is used, terminals need only be suitable for that cord		N/A
26.7	Terminals for type X attachment, except in class III appliances not containing live parts, accessible after removal of a cover or part of the enclosure	Type Y attachment	N/A
26.8	Terminals for the connection of fixed wiring, including the earthing terminal, located close to each other	Appliances are provided with supply cord fitted with a plug.	N/A
26.9	Terminals of the pillar type constructed and located as specified		P
26.10	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless		P
	conductors ends fitted with means suitable for screw terminals		N/A
	Pull test of 5 N to the connection		N/A
26.11	For type Y and Z attachment, soldered, welded, crimped or similar connections may be used	Pillar type of terminals	P
	For Class II appliances, the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone	Class I	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If soldering, welding or crimping alone used, barriers provided so that clearances and creepage distances between live parts and other metal parts are not reduced below the values for supplementary insulation if the conductor becomes free		N/A
27	PROVISION FOR EARTHING		P
27.1	Accessible metal parts of Class 0I and I appliances permanently and reliably connected to an earthing terminal or earthing contact of the appliance inlet		P
	Earthing terminals and earthing contacts not connected to the neutral terminal		P
	Class 0, II and III appliances have no provision for protective earthing	Class I	N/A
	Class II appliances and class III appliances can incorporate an earth for functional purposes	Class I; no functional earth	N/A
	Safety extra-low voltage circuits not earthed, unless		P
	protective extra-low voltage circuits	No protective extra-low voltage circuit	N/A
27.2	Clamping means of earthing terminals adequately secured against accidental loosening		P
	Terminals for the connection of external equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm ² , and		P
	do not provide earthing continuity between different parts of the appliance, and		P
	conductors cannot be loosened without the aid of a tool		P
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	Class I	N/A
	Stationary appliances provided with a terminal for the connection of an external equipotential conductor (IEC 60335-2-49)	Equipotential terminal is placed at the back or on the bottom side of the ovens.	P
27.3	For a detachable part having an earth connection and being plugged into another part of the appliance, the earth connection is made before and separated after current-carrying connections when removing the part	No detachable parts	P
	For appliances with supply cords, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	Class I	N/A
27.4	No risk of corrosion resulting from contact between parts of the earthing terminal and the copper of the earthing conductor or other metal		P
	Parts providing earthing continuity, other than parts of a metal frame or enclosure, have adequate resistance to corrosion		P
	If of steel, these parts provided with an electroplated coating with a thickness at least 5 µm		P
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		P
	In the body of the earthing terminal is a part of a frame or enclosure of aluminium or aluminium alloys, precautions taken to avoid risk of corrosion		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	Class I	N/A
27.5	Low resistance of connection between earthing terminal and earthed metal parts		P
	This requirement does not apply to connections providing earthing continuity in the protective extra-low voltage circuit, provided the clearances of basic insulation are based on the rated voltage of the appliance	No protective extra-low voltage circuit	N/A
	Resistance not exceeding 0,1 Ω at the specified low-resistance test (Ω)	Max. 0,05 Ω	P
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	Class I	N/A
27.6	The printed conductors of printed circuit boards not used to provide earthing continuity in hand-held appliances.	No earthing connections through PCB	P
	They may be used to provide earthing continuity in other appliances if at least two tracks are used with independent soldering points and the appliance complies with 27.5 for each circuit		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	Class I	N/A
28	SCREWS AND CONNECTIONS		P

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Clause	Requirement + Test	Result - Remark	Verdict
28.1	Fixings, electrical connections and connections providing earthing continuity withstand mechanical stresses		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 screws of insulating material	N/A
	Screws of insulating material not used for any electrical connections or connections providing earthing continuity	No screws of insulating material	N/A
	Screws used for electrical connections or connections providing earthing continuity screwed into metal	Earth continuity screws screwed into metal	P
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation	No screws of insulating material	P
	For type X attachment, screws to be removed for replacement of supply cord or for user maintenance, not of insulating material if their replacement by a metal screw impairs basic insulation	Type Y attachment	N/A
	For screws and nuts; torque-test as specified in table 14	(see appended table)	P
28.2	Electrical connections and connections providing earthing continuity constructed so that contact pressure is not transmitted through non-ceramic insulating material liable to shrink or distort, unless		P
	there is resiliency in the metallic parts to compensate for shrinkage or distortion of the insulating material		N/A
	This requirement does not apply to electrical connections in circuits of appliances for which:		N/A
	<ul style="list-style-type: none"> 30.2.2 is applicable and that carry a current not exceeding 0,5 A 		N/A
	<ul style="list-style-type: none"> 30.2.3 is applicable and that carry a current not exceeding 0,2 A 		N/A
28.3	Space-threaded (sheet metal) screws only used for electrical connections if they clamp the parts together	No space-threaded screws providing electrical connections.	N/A
	Thread-cutting (self-tapping) screws and thread rolling screws only used for electrical connections if they generate a full form standard machine screw thread	No thread-cutting screws providing electrical connections.	N/A

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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		N/A
	Thread-cutting, thread rolling and space threaded screws may be used in connections providing earthing continuity provided it is not necessary to disturb the connection:		P
	- in normal use,		P
	- during user maintenance,		P
	- when replacing a supply cord having a type X attachment, or	Type Y attachment	N/A
	- during installation		P
	At least two screws being used for each connection providing earthing continuity, unless	At least two screws are use for connection providing earthing continuity	P
	the screw forms a thread having a length of at least half the diameter of the screw		N/A
28.4	Screws and nuts that make mechanical connection secured against loosening if they also make electrical connections or connections providing earthing continuity	Under nuts providing earthing continuity are used notched washers	P
	This requirement does not apply to screws in the earthing circuit if at least two screws are used, or	At least two screws are use for connection providing earthing continuity	P
	if an alternative earthing circuit is provided		N/A
	Rivets for electrical connections or connections providing earthing continuity secured against loosening if the connections are subjected to torsion	Rivets providing earth continuity	P
29	CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION		P
	Clearances, creepage distances and solid insulation withstand electrical stress		P
	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (Type 2), Annex J applies.....:	No coating	N/A
	The microenvironment is pollution degree 1 under type 1 protection		N/A
	For type 2 protection, the spacing between the conductors before the protection is applied is not less than the values specified in Table 1 of IEC 60664-3		N/A
	These values apply to functional, basic, supplementary and reinforced insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
29.1	Clearances not less than the values specified in table 16, taking into account the rated impulse voltage for the overvoltage categories of table 15, unless..... :	(see appended table)	P
	for basic insulation and functional insulation they comply with the impulse voltage test of clause 14		N/A
	However, if the distances are affected by wear, distortion, movement of the parts or during assembly, the clearances for rated impulse voltages of 1500V and above are increased by 0,5 mm and the impulse voltage test is not applicable		N/A
	For appliances intended for use at altitudes exceeding 2 000 m, the clearances in Table 16 is increased according to the relevant multiplier values in Table A.2 of IEC 60664-1		N/A
	Impulse voltage test is not applicable:		N/A
	- when the microenvironment is pollution degree 3, or		N/A
	- for basic insulation of class 0 and class 01 appliances		N/A
	- to appliances intended for use at altitudes exceeding 2 000 m		N/A
	Appliances are in overvoltage category II		P
	A force of 2 N is applied to bare conductors, other than heating elements		P
	A force of 30 N is applied to accessible surfaces		P
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage		P
	The values of table 16 or the impulse voltage test of clause 14 are applicable	(see appended table)	P
	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1,0 mm if the microenvironment is pollution degree 1	No tubular sheathed heating elements	N/A
	Lacquered conductors of windings considered to be bare conductors		P
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16:	(see appended table)	P
29.1.3	Clearances of reinforced insulation not less than those specified for basic insulation in table 16, using the next higher step for rated impulse voltage	(see appended table)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	For double insulation, with no intermediate conductive part between basic and supplementary insulation, clearances are measured between live parts and the accessible surface, and the insulation system is treated as reinforced insulation		P
29.1.4	Clearances for functional insulation are the largest values determined from:		P
	- table 16 based on the rated impulse voltage	(see appended table)	P
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz		N/A
	If values of table 16 are largest, the impulse voltage test of clause 14 may be applied instead, unless		N/A
	the microenvironment is pollution degree 3, or		N/A
	the distances can be affected by wear, distortion, movement of the parts or during assembly		N/A
	However, clearances are not specified if the appliance complies with clause 19 with the functional insulation short-circuited		P
	Lacquered conductors of windings considered to be bare conductors		P
	However, clearances at crossover points are not measured		N/A
	Clearance between surfaces of PTC heating elements may be reduced to 1mm	No PTC heating elements	N/A
29.1.5	Appliances having higher working voltages than rated voltage, clearances for basic insulation are the largest values determined from:		N/A
	- table 16 based on the rated impulse voltage		N/A
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1 or Clause 4 of IEC 60664-4, the clearances of supplementary insulation are not less than those specified for basic insulation		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1, the clearances of reinforced insulation dimensioned as specified in Table F.7a are to withstand 160% of the withstand voltage required for basic insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If clearances for basic insulation are selected from Clause 4 of IEC 60664-4, the clearances of reinforced insulation are twice the value required for basic insulation		N/A
	If the secondary winding of a step-down transformer is earthed, or if there is an earthed screen between the primary and secondary windings, clearances of basic insulation on the secondary side not less than those specified in table 16, but using the next lower step for rated impulse voltage		N/A
	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation are based on the working voltage used as the rated voltage in table 15		N/A
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree	(see appended table)	P
	The microenvironment is pollution degree 3 unless the insulation is enclosed or located so that it is unlikely to be exposed to pollution during normal use of the appliance. (IEC 60335-2-49)	Insulation is enclosed that it is unlikely to be exposed to the pollution	N/A
	Pollution degree 3 applies, unless		N/A
	- precautions taken to protect the insulation; pollution degree 1		N/A
	- insulation subjected to conductive pollution; pollution degree 2	Insulation is enclosed that it is unlikely to be exposed to the pollution	P
	A force of 2 N is applied to bare conductors, other than heating elements		P
	A force of 30 N is applied to accessible surfaces		P
	In a double insulation system, the working voltage for both the basic and supplementary insulation is taken as the working voltage across the complete double insulation system		P
	Tracking index (CTI) not less than 250 unless the insulation is enclosed or located so that it is unlikely to be exposed to pollution during normal use of the appliance (IEC 60335-2-49)	Insulation is enclosed that it is unlikely to be exposed to the pollution	N/A
29.2.1	Creepage distances of basic insulation not less than specified in table 17	(see appended table)	P
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 17		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Except for pollution degree 1, corresponding creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14		N/A
29.2.2	Creepage distances of supplementary insulation at least those specified for basic insulation in table 17, or	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable		N/A
29.2.3	Creepage distances of reinforced insulation at least double those specified for basic insulation in table 17, or	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable		N/A
29.2.4	Creepage distances of functional insulation not less than specified in table 18.....	(see appended table)	P
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 18		N/A
	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited		P
29.3	Supplementary and reinforced insulation have adequate thickness, or a sufficient number of layers, to withstand the electrical stresses		P
	Compliance checked:		P
	- by measurement, in accordance with 29.3.1, or		P
	- by an electric strength test in accordance with 29.3.2, or		P
	- for insulation, other than single layer internal wiring insulation, by an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3, and		N/A
	for accessible parts of reinforced insulation consisting of a single layer, by measurement in accordance with 29.3.4, or		N/A
	- by an assessment of the thermal quality of the material according to 29.3.3 combined with an electric strength test in accordance with 23.5, for each single layer internal wiring insulation touching each other, or		N/A
	- as specified in subclause 6.3 of IEC 60664-4 for insulation that is subjected to any periodic voltage having a frequency exceeding 30 kHz		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
29.3.1	Supplementary insulation have a thickness of at least 1 mm	Thickness of the handles > 2,0 mm	P
	Reinforced insulation have a thickness of at least 2 mm	Thickness of the handles > 2,0 mm	P
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		P
	Supplementary insulation consist of at least 2 layers	Two layers of insulation over the controls	P
	Reinforced insulation consist of at least 3 layers		N/A
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by		N/A
	the electric strength test of 16.3		N/A
	If the temperature rise during the tests of clause 19 does not exceed the value specified in table 3, the test of IEC 60068-2-2 is not carried out		N/A
29.3.4	Thickness of accessible parts of reinforced insulation consisting of a single layer not less than specified in table 19	Thickness of the handles > 2,0 mm	P
30	RESISTANCE TO HEAT AND FIRE		P
30.1	External parts of non-metallic material,		P
	parts supporting live parts, and		P
	parts of thermoplastic material providing supplementary or reinforced insulation		P
	sufficiently resistant to heat		P
	Ball-pressure test according to IEC 60695-10-2		P
	External parts tested at 40 °C plus the maximum temperature rise determined during the test of clause 11, or at 75 °C, whichever is the higher; temperature (°C)	(see appended table)	P
	Parts supporting live parts tested at 40°C plus the maximum temperature rise determined during the test of clause 11, or at 125 °C, whichever is the higher; temperature (°C)	(see appended table)	P
	Parts of thermoplastic material providing supplementary or reinforced insulation tested at 25 °C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C).....	(see appended table)	N/A
30.2	Parts of non-metallic material resistant to ignition and spread of fire		P
	This requirement does not apply to:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	parts having a mass not exceeding 0,5 g, provided the cumulative effect is unlikely to propagate flames that originate inside the appliance by propagating flames from one part to another, or		N/A
	decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance		N/A
	Compliance checked by the test of 30.2.1, and in addition:		P
	- for attended appliances, 30.2.2 applies		N/A
	- for unattended appliances, 30.2.3 applies		P
	For appliances for remote operation, 30.2.3 applies	No remote operation	N/A
	For base material of printed circuit boards, 30.2.4 applies		P
30.2.1	Parts of non-metallic material subjected to the glow-wire test of IEC 60695-2-11 at 650°C (IEC 60335-2-49)		P
	However, test not carried out if the material is classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 650 °C, or (IEC 60335-2-49)		N/A
	the material is classified at least HB40 according to IEC 60695-11-10		N/A
	Parts for which the glow-wire test cannot be carried out need to meet the requirements in ISO 9772 for material classified HBF		N/A
30.2.2	Not applicable (IEC 60335-2-49)		N/A
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2		P
	The tests are not applicable to conditions as specified		N/A
30.2.3.1	Parts of non-metallic material supporting connections carrying a current exceeding 0,2 A during normal operation, and		P
	parts of non-metallic material, other than small parts, within a distance of 3 mm,		P
	subjected to the glow-wire test of IEC 60695-2-11 with a test severity of 850 °C		P
	Glow-wire applied to an interposed shielding material, if relevant		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 850 °C		P
30.2.3.2	Parts of non-metallic material supporting connections, and		P
	parts of non-metallic material within a distance of 3mm,		P
	subjected to glow-wire test of IEC 60695-2-11		P
	The test severity is:		P
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		P
	- 650 °C, for other connections		N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	However, the glow-wire test of 750 °C or 650 °C as appropriate, is not carried out on parts of material fulfilling both or either of the following classifications:		P
	- a glow-wire ignition temperature according to IEC 60695-2-13 of at least:		P
	<ul style="list-style-type: none"> • 775 °C, for connections carrying a current exceeding 0,2 A during normal operation 		P
	<ul style="list-style-type: none"> • 675 °C, for other connections 		N/A
	- a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		N/A
	- comprise material having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or		N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The consequential needle-flame test of Annex E applied to non-metallic parts that encroach within the vertical cylinder placed above the centre of the connection zone and on top of the non-metallic parts supporting current-carrying connections, and parts of non-metallic material within a distance of 3 mm of such connections if these parts are those:		N/A
	- parts that withstood the glow-wire test of IEC 60695-2-11 of 750 °C or 650 °C as appropriate, but produce a flame that persist longer than 2 s, or		N/A
	- parts that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts, that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts for which the needle-flame test of Annex E was applied, or		N/A
	- small parts for which a material classification of V-0 or V-1 was applied		N/A
	However, the consequential needle-flame test is not carried out on non-metallic parts, including small parts, within the cylinder that are:		N/A
	- parts having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- parts comprising material classified as V-0 or V-1 according to IEC 60695-11-10, or		N/A
	- parts shielded by a flame barrier that meets the needle-flame test of Annex E or that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
30.2.4	Base material of printed circuit boards subjected to the needle-flame test of Annex E		P
	Test not applicable to conditions as specified.....:		N/A
31	RESISTANCE TO RUSTING		P
	Relevant ferrous parts adequately protected against rusting		P
	Tests specified in part 2 when necessary		N/A
32	RADIATION, TOXICITY AND SIMILAR HAZARDS		P
	Appliance does not emit harmful radiation or present a toxic or similar hazard due to their operation in normal use		P
	Compliance is checked by the limits or tests specified in part 2, if relevant		N/A
A	ANNEX A (INFORMATIVE) ROUTINE TESTS		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict
	The positive terminal indicated by symbol IEC 60417-5005 and the negative terminal by symbol IEC 60417-5006		N/A
	Appliances intending to be supplied from a detachable supply unit marked with symbol IEC 60417-6181 and its type reference along with symbol ISO 7000-0790 (2004-01), or		N/A
	use only with <model designation> supply unit		N/A
7.6	Additional symbols		N/A
7.12	The instructions give information regarding charging		N/A
	The instructions for appliances incorporating batteries intended to be replaced by the user includes required information		N/A
	Details about how to remove batteries containing materials hazardous to the environment given		N/A
	For appliances intending to be supplied from a detachable supply unit for the purposes of recharging the battery, the type reference of the detachable supply unit is stated along with the following:		N/A
	WARNING: For the purposes of recharging the battery, only use the detachable supply unit provided with this appliance		N/A
	If the symbol for detachable supply unit is used, its meaning is explained		N/A
7.15	Markings placed on the part of the appliance connected to the supply mains		N/A
	The type reference of the detachable supply unit is placed in close proximity to the symbol		N/A
8.2	Appliances having batteries that according to the instruction may be replaced by the user need only have basic insulation between live parts and the inner surface of the battery compartment		N/A
	If the appliance can be operated without batteries, double or reinforced insulation required		N/A
11.7	The battery is charged for the period stated in the instructions or 24 h		N/A
11.8	Temperature rise of the battery surface does not exceed the limit in the battery manufacturer's specification; measured (K); limit (K).....		N/A
	If no limit specified, the temperature rise does not exceed 20 K; measured (K)		N/A
19.1	Appliances subjected to tests of 19.B.101, 19.B.102 and 19.B.103		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
19.10	Not applicable		N/A
19.13	The battery does not rupture or ignite		N/A
19.B.101	Appliances supplied at rated voltage for 168 h, the battery being continually charged		N/A
19.B.102	For appliances having batteries that can be removed without the aid of a tool, short-circuit of the terminals of the battery, the battery being fully charged,		N/A
19.B.103	Appliances having batteries replaceable by the user supplied at rated voltage under normal operation with the battery removed or in any position allowed by the construction		N/A
21.B.101	Appliances having pins for insertion into socket-outlets have adequate mechanical strength		N/A
	Part of the appliance incorporating the pins subjected to the free fall test, procedure 2, of IEC 60068-2-31, the number of falls being:		N/A
	- 100, if the mass of the part does not exceed 250 g (g).....:		N/A
	- 50, if the mass of the part exceeds 250 g		N/A
	After the test, the requirements of 8.1, 15.1.1, 16.3 and clause 29 are met		N/A
22.3	Appliances having pins for insertion into socket-outlets tested as fully assembled as possible		N/A
25.13	An additional lining or bushing not required for interconnection cords in class III appliances or class III constructions operating at safety extra-low voltage not containing live parts		N/A
30.2	For parts of the appliance connected to the supply mains during the charging period, 30.2.3 applies		N/A
	For other parts, 30.2.2 applies		N/A
C	ANNEX C (NORMATIVE) AGEING TEST ON MOTORS		N/A
	Tests, as described, carried out when doubt with regard to the temperature classification of the insulation of a motor winding		N/A
	Test conditions as specified		N/A
D	ANNEX D (NORMATIVE) THERMAL MOTOR PROTECTORS		N/A
	Applicable to appliances having motors that incorporate thermal motor protectors necessary for compliance with the standard		N/A
	Test conditions as specified		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.5	This subclause is applicable		N/A
4.2.5.2	Only table 11 is applicable		N/A
	Values for test A apply		N/A
	However, for capacitors in heating appliances the values for test B or C apply		N/A
4.12	Damp heat, steady state		N/A
	This subclause is applicable		N/A
	Only insulation resistance and voltage proof are checked		N/A
4.13	Impulse voltage		N/A
	This subclause is applicable		N/A
4.14	Endurance		N/A
	Subclauses 4.14.1, 4.14.3, 4.14.4 and 4.14.7 are applicable		N/A
4.14.7	Only insulation resistance and voltage proof are checked		N/A
	No visible damage		N/A
4.17	Passive flammability test		N/A
	This subclause is applicable		N/A
4.18	Active flammability test		N/A
	This subclause is applicable		N/A
G	ANNEX G (NORMATIVE) SAFETY ISOLATING TRANSFORMERS		N/A
	The following modifications to this standard are applicable for safety isolating transformers:		N/A
7	Marking and instructions		N/A
7.1	Transformers for specific use marked with:		N/A
	-name, trademark or identification mark of the manufacturer or responsible vendor		N/A
	-model or type reference.....		N/A
17	Overload protection of transformers and associated circuits		N/A
	Fail-safe transformers comply with subclause 15.5 of IEC 61558-1		N/A
22	Construction		N/A
	Subclauses 19.1 and 19.1.2 of IEC 61558-2-6 are applicable		N/A
29	Clearances, creepage distances and solid insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
29.1, 29.2, 29.3	The distances specified in items 2a, 2c and 3 in table 13 of IEC 61558-1 apply		N/A
	For insulated winding wires complying with subclause 19.12.3 of IEC 61558-1 there are no requirements for clearances or creepage distances		N/A
	For windings providing reinforced insulation, the distance specified in item 2c of table 13 of IEC 61558-1 is not assessed		N/A
	For safety isolating transformers subjected to periodic voltages with a frequency exceeding 30 kHz, the clearances, creepage distances and solid insulation values specified in IEC 60664-4 are applicable, if greater than the values specified in items 2a, 2c and 3 in table 13 of IEC 61558-1		N/A
H	ANNEX H (NORMATIVE) SWITCHES		N/A
	Switches comply with the following clauses of IEC 61058-1, as modified below:		N/A
	The tests of IEC 61058-1 carried out under the conditions occurring in the appliance		N/A
	Before being tested, switches are operated 20 times without load		N/A
8	Marking and documentation		N/A
	Switches are not required to be marked		N/A
	However, a switch that can be tested separately from the appliance marked with the manufacturer's name or trade mark and the type reference		N/A
13	Mechanism		N/A
	The tests may be carried out on a separate sample		N/A
15	Insulation resistance and dielectric strength		N/A
15.1	Not applicable		N/A
15.2	Not applicable		N/A
15.3	Applicable for full disconnection and micro-disconnection		N/A
17	Endurance		N/A
	Compliance is checked on three separate appliances or switches		N/A
	For 17.2.4.4, the number of cycles declared according to 7.1.4 is 10 000, unless		N/A
	otherwise specified in 24.1.3 of the relevant part 2 of IEC 60335		N/A

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

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

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Clause	Requirement + Test	Result - Remark	Verdict
	Equipment of overvoltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements		N/A
	Equipment of overvoltage category II is energy consuming equipment to be supplied from the fixed installation		P
	If such equipment is subjected to special requirements with regard to reliability and availability, overvoltage category III applies		N/A
	Equipment of overvoltage category I is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an appropriate low level		N/A
L	ANNEX L (INFORMATIVE) GUIDANCE FOR THE MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES		P
	Information for the determination of clearances and creepage distances		P
M	ANNEX M (NORMATIVE) POLLUTION DEGREE		P
	The information on pollution degrees is extracted from IEC 60664-1		P
	Pollution		P
	The microenvironment determines the effect of pollution on the insulation, taking into account the macroenvironment		P
	Means may be provided to reduce pollution at the insulation by effective enclosures or similar		P
	Minimum clearances specified where pollution may be present in the microenvironment		P
	Degrees of pollution in the microenvironment		P
	For evaluating creepage distances, the following degrees of pollution in the microenvironment are established:		P
	- pollution degree 1: no pollution or only dry, non-conductive pollution occurs. The pollution has no influence		N/A
	- pollution degree 2: only non-conductive pollution occurs, except that occasionally a temporary conductivity caused by condensation is to be expected	Insulation is enclosed that it is unlikely to be exposed to the pollution	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- pollution degree 3: conductive pollution occurs or dry non-conductive pollution occurs that becomes conductive due to condensation that is to be expected		N/A
	- pollution degree 4: the pollution generates persistent conductivity caused by conductive dust or by rain or snow		N/A
N	ANNEX N (NORMATIVE) PROOF TRACKING TEST		N/A
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications:		N/A
7	Test apparatus		N/A
7.3	Test solutions		N/A
	Test solution A is used		N/A
10	Determination of proof tracking index (PTI)		N/A
10.1	Procedure		N/A
	The proof voltage is 100V, 175V, 400V or 600V ...:		N/A
	The test is carried out on five specimens		N/A
	In case of doubt, additional test with proof voltage reduced by 25V, the number of drops increased to 100		N/A
10.2	Report		N/A
	The report states if the PTI value was based on a test using 100 drops with a test voltage of (PTI-25) V		N/A
O	ANNEX O (INFORMATIVE) SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30		P
	Description of tests for determination of resistance to heat and fire		P
P	ANNEX P (INFORMATIVE) GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN WARM DAMP EQUABLE CLIMATES		N/A
	Modifications applicable for class 0 and 01 appliances having a rated voltage exceeding 150V, intended to be used in countries having a warm damp equable climate and that are marked WDaE		N/A
	Modifications may also be applied to class 1 appliances having a rated voltage exceeding 150V, intended to be used in countries having a warm damp equable climate and that are marked WdaE, if liable to be connected to a supply mains that excludes the protective earthing conductor		N/A
5.7	The ambient temperature for the tests of clauses 11 and 13 is 40 +3/0 °C		N/A
7.1	The appliance marked with the letters WDaE		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7.12	The instructions state that the appliance is to be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30 mA		N/A
	The instructions state that the appliance is considered to be suitable for use in countries having a warm damp equable climate, but may also be used in other countries		N/A
11.8	The values of Table 3 are reduced by 15 K		N/A
13.2	The leakage current for class I appliances not exceeding 0,5 mA		N/A
15.3	The value of t is 37 °C		N/A
16.2	The leakage current for class I appliances not exceeding 0,5 mA (mA):		N/A
19.13	The leakage current test of 16.2 is applied in addition to the electric strength test of 16.3		N/A
Q	ANNEX Q (INFORMATIVE) SEQUENCE OF TESTS FOR THE EVALUATION OF ELECTRONIC CIRCUITS		P
	Description of tests for appliances incorporating electronic circuits		P
R	ANNEX R (NORMATIVE) SOFTWARE EVALUATION		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 validated in accordance with the requirements of this annex		N/A
R.1	Programmable electronic circuits using software		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 constructed so that the software does not impair compliance with the requirements of this standard		N/A
R.2	Requirements for the architecture		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 use measures to control and avoid software-related faults/errors in safety-related data and safety-related segments of the software		N/A
R.2.1.1	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.2 have one of the following structures:		N/A
	- single channel with periodic self-test and monitoring		N/A
	- dual channel (homogenous) with comparison		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- dual channel (diverse) with comparison		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 have one of the following structures:		N/A
	- single channel with functional test		N/A
	- single channel with periodic self-test		N/A
	- dual channel without comparison		N/A
R.2.2	Measures to control faults/errors		N/A
R.2.2.1	When redundant memory with comparison is provided on two areas of the same component, the data in one area is stored in a different format from that in the other area		N/A
R.2.2.2	Programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.2 and that use dual channel structures with comparison, have additional fault/error detection means for any fault/errors not detected by the comparison		N/A
R.2.2.3	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, means are provided for the recognition and control of errors in transmissions to external safety-related data paths		N/A
R.2.2.4	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the programmable electronic circuits incorporate measures to address the fault/errors in safety-related segments and data indicated in table R.1 and R.2 as appropriate		N/A
R.2.2.5	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, detection of a fault/error occur before compliance with clause 19 is impaired		N/A
R.2.2.6	The software is referenced to relevant parts of the operating sequence and the associated hardware functions		N/A
R.2.2.7	Labels used for memory locations are unique		N/A
R.2.2.8	The software is protected from user alteration of safety-related segments and data		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
R.2.2.9	Software and safety-related hardware under its control is initialized and terminates before compliance with clause 19 is impaired		N/A
R.3	Measures to avoid errors		N/A
R.3.1	General		N/A
	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the following measures to avoid systematic fault in the software are applied		N/A
	Software that incorporates measures used to control the fault/error conditions specified in table R.2 is inherently acceptable for software required to control the fault/error conditions specified in table R.1		N/A
R.3.2	Specification		N/A
R.3.2.1	Software safety requirements:	Software Id:	N/A
	The specification of the software safety requirements includes the descriptions listed		N/A
R.3.2.2	Software architecture		N/A
R.3.2.2.1	The specification of the software architecture includes the aspects listed <ul style="list-style-type: none"> - techniques and measures to control software faults/errors (refer to R.2.2); - interactions between hardware and software; - partitioning into modules and their allocation to the specified safety functions; - hierarchy and call structure of the modules (control flow); - interrupt handling; - data flow and restrictions on data access; - architecture and storage of data; - time-based dependencies of sequences and data 	Document ref. No:	N/A
R.3.2.2.2	The architecture specification is validated against the specification of the software safety requirements by static analysis		N/A
R.3.2.3	Module design and coding		N/A
R.3.2.3.1	Based on the architecture design, software is suitably refined into modules		N/A
	Software module design and coding is implemented in a way that is traceable to the software architecture and requirements		N/A
R.3.2.3.2	Software code is structured		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
R.3.2.3.3	Coded software is validated against the module specification by static analysis		N/A
	The module specification is validated against the architecture specification by static analysis		N/A
R.3.3.3	Software validation		N/A
	The software is validated with reference to the requirements of the software safety requirements specification		N/A
	Compliance is checked by simulation of:		N/A
	- input signals present during normal operation		N/A
	- anticipated occurrences		N/A
	- undesired conditions requiring system action		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

TABLE R.1 ^e – GENERAL FAULT/ERROR CONDITIONS						
Component ^a	Fault/error	Acceptable measures ^{b, c}	Definitions	Document reference for applied measure	Document reference for applied test	Verdict
1 CPU						N/A
1.1 Registers	Stuck at	Functional test, or periodic self-test using either: <ul style="list-style-type: none"> - static memory test, or - word protection with single bit redundancy 	H.2.16.5 H.2.16.6 H.2.19.6 H.2.19.8.2			N/A
1.2 VOID						N/A
1.3 Programme counter	Stuck at	Functional test, or Periodic self-test, or Independent time-slot monitoring, or Logical monitoring of the programme sequence	H.2.16.5 H.2.16.6 H.2.18.10.4 H.2.18.10.2			N/A
2 Interrupt handling and execution	No interrupt or too frequent interrupt	Functional test, or time-slot monitoring	H.2.16.5 H.2.18.10.4			N/A
3 Clock	Wrong frequency (for quartz synchroniz ed clock: harmonics/ sub-harmonics only)	Frequency monitoring, or time slot monitoring	H.2.18.10.1 H.2.18.10.4			N/A
4. Memory						N/A
4.1 Invariable memory	All single bit faults	Periodic modified checksum, or multiple checksum, or word protection with single bit redundancy	H.2.19.3.1 H.2.19.3.2 H.2.19.8.2			N/A
4.2 Variable memory	DC fault	Periodic static memory test, or word protection with single bit redundancy	H.2.19.6 H.2.19.8.2			N/A

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Clause	Requirement + Test		Result - Remark			Verdict
4.3 Addressing (relevant to variable and invariable memory)	Stuck at	Word protection with single bit redundancy including the address	H.2.19.8.2			N/A
5 Internal data path	Stuck at	Word protection with single bit redundancy	H.2.19.8.2			N/A
5.1 VOID						N/A
5.2 Addressing	Wrong address	Word protection with single bit redundancy including the address	H.2.19.8.2			N/A
6 External communication	Hamming distance 3	Word protection with multi-bit redundancy, or CRC – single work, or Transfer redundancy, or Protocol test	H.2.19.8.1 H.2.19.4.1 H.2.18.2.2 H.2.18.14			N/A
6.1 VOID						N/A
6.2 VOID						N/A
6.3 Timing	Wrong point in time Wrong sequence	Time-slot monitoring, or scheduled transmission Time-slot and logical monitoring, or comparison of redundant communication channels by either: - reciprocal comparison - independent hardware comparator Logical monitoring, or time-slot monitoring, or Scheduled transmission	H.2.18.10.4 H.2.18.18 H.2.18.10.3 H.2.18.15 H.2.18.3 H.2.18.10.2 H.2.18.10.4 H.2.18.18			N/A
7 Input/output periphery	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A
7.1 VOID						N/A
7.2 Analog I/O 7.2.1 A/D and D/A-converter	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A

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Clause	Requirement + Test			Result - Remark		Verdict
7.2.2 Analog multiplexer	Wrong addressing	Plausibility check	H.2.18.13			N/A
8 VOID						N/A
9 Custom chips ^d e.g. ASIC, GAL, gate array	Any output outside the static and dynamic functional specification	Periodic self-test	H.2.16.6			N/A
<p>NOTE A Stuck-at fault model denotes a fault model representing an open circuit or a non-varying signal level. A DC fault model denotes a stuck-at fault model incorporating short circuit between signal lines.</p> <p>a) For fault/error assessment, some components are divided into their sub-functions. b) For each sub-function in the table, the Table R.2 measure will cover the software fault/error. c) Where more than one measure is given for a sub-function, these are alternatives. d) To be divided as necessary by the manufacturer into sub-functions. e) Table R.1 is applied according to the requirements of R.1 to R.2.2.9 inclusive.</p>						

S	ANNEX S (NORMATIVE) BATTERY OPERATED APPLIANCES POWERED BY BATTERIES THAT ARE NON-RECHARGEABLE OR NOT RECHARGED IN THE APPLIANCE			N/A
	The following modifications to this standard are applicable for battery-operated appliances where the batteries are either non-rechargeable (primary batteries), or			N/A
	rechargeable batteries (secondary batteries) that are not recharged in the appliance			N/A
5.8.1	If the supply terminals for the connection of the battery have no indication of polarity, the more unfavourable polarity is applied			N/A
5.S.101	Appliances intended for use with a battery box are tested with the battery box supplied with the appliance or with the battery box recommended in the instructions			N/A
5.S.102	Appliances are tested as motor-operated appliances.			N/A
7.1	Appliances marked with the battery voltage (V) and the polarity of the terminals, unless..... : the polarity is irrelevant			N/A
	Appliances also marked with:			N/A
	– name, trade mark or identification mark of the manufacturer or responsible vendor :			N/A
	– model or type reference :			N/A
	– IP number according to degree of protection against ingress of water, other than IPX0.... :			N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	– type reference of battery or batteries.....:		N/A
	If relevant, the positive terminal is indicated by the symbol IEC 60417-5005 and the negative terminal by the symbol IEC 60417-5006		N/A
	If appliances use more than one battery, they are marked to indicate correct polarity connection of the batteries		N/A
7.6	Additional symbols		N/A
7.12	The instructions contain the following, as applicable:		N/A
	– the types of batteries that may be used:		N/A
	– how to remove and insert the batteries		N/A
	– non-rechargeable batteries are not to be recharged		N/A
	– rechargeable batteries are to be removed from the appliance before being charged		N/A
	– different types of batteries or new and used batteries are not to be mixed		N/A
	– batteries are to be inserted with the correct polarity		N/A
	– exhausted batteries are to be removed from the appliance and safely disposed of		N/A
	– if the appliance is to be stored unused for a long period, the batteries are removed		N/A
	– the supply terminals are not to be short-circuited		N/A
11.5	Appliances are supplied with the most unfavourable supply voltage between		N/A
	– 0,55 and 1,0 times the battery voltage, if the appliance can be used with non-rechargeable batteries		N/A
	– 0,75 and 1,0 times battery voltage, if the appliance is designed for use with rechargeable batteries only		N/A
	The values specified in Table S.101 for the internal resistance per cell of the battery is taken into account		N/A
19.1	The tests are carried out with the battery fully charged unless otherwise specified		N/A
19.13	The battery does not rupture or ignite		N/A
19.S.101	Appliances are supplied with the voltage specified in 11.5. The supply terminals having an indication of polarity are connected to the opposite polarity, unless		N/A
	such a connection is unlikely to occur due to the construction of the appliance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
19.S.102	For appliances with provision for multiple batteries, one or more of the batteries are reversed and the appliance is operated, if reversal of batteries is allowed by the construction		N/A
25.5	The flexible leads or flexible cord used to connect an external battery or battery box in is connected to the appliance by a type X attachment		N/A
25.13	This requirement is not applicable to the flexible leads or flexible cord connecting external batteries or a battery box with an appliance		N/A
25.S.101	Appliances have suitable means for connection of the battery. If the type of battery is marked on the appliance, the means of connection is suitable for this type of battery		N/A
26.5	Terminal devices in an appliance for the connection of the flexible leads or flexible cord connecting an external battery or battery box are so located or shielded that there is no risk of accidental connection between supply terminals		N/A
30.2.3.2	There is no battery in the area of the vertical cylinder used for the consequential needle flame test, unless		N/A
	the battery is shielded by a barrier that meets the needle flame test of Annex E, or		N/A
	that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

10.1	TABLE: Power input deviation				P
Input deviation of/at:	P rated (W)	P measured (W)	ΔP	Required ΔP	Remark
230 V on HSH052E	1500 W	1478 W	- 1,5 %	+ 5% / -10 %	Pass
230 V on HHT282E	3000 W	2956 W	- 1,5 %	+ 5% / -10 %	Pass
Supplementary information:					

10.2	TABLE: Current deviation				N/A
Current deviation of/at:	I rated (A)	I measured (A)	ΔI	Required ΔI	Remark
Supplementary information:					

11.8	TABLE: Heating test, thermocouple measurements on HSH052E			P
	Test voltage (V).....:	260 V		—
	Ambient (°C).....:	25°C		—
Thermocouple locations	Max. temperature rise measured, ΔT (K)	Max. temperature rise limit, ΔT (K)		
Power supply cord	32	50 K		
Supply terminal	26	100 K		
Fuse holder	30	35 K		
Main PCB with:	25	105 K		
- Terminals on PCB	40	cl. 30		
- Relay	28	60 K		
- Diode bridge	42	125 K		
- Electrolytic capacitor C34	33	60 K		
Control PCB	23	105 K		
Test corner	29	60 K		
Supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict
11.8	TABLE: Heating test, thermocouple measurements on HHT282E		P
	Test voltage (V)	251 V	—
	Ambient (°C)	25°C	—
Thermocouple locations	Max. temperature rise measured, Δ T (K)	Max. temperature rise limit, Δ T (K)	
Power supply cord	43	50 K	
Supply terminal	46	100 K	
Fuse holder	29	35 K	
Main PCB with:	23	105 K	
- Terminals on PCB	21	cl. 30	
- Relay	43	60 K	
- Diode bridge	25	125 K	
- Electrolytic capacitor C34	34	60 K	
Control PCB	43	105 K	
Test corner	30	60 K	
Supplementary information:			

11.8	TABLE: Heating test, resistance method on HSH052E and HHT282E					P
	Test voltage (V)	260 V			—	
	Ambient, t1 (°C)	24°C / 25°C			—	
	Ambient, t2 (°C)	25°C / 25°C			—	
Temperature rise of winding	R1 (Ω)	R2 (Ω)	Δ T (K)	Max. Δ T (K)	Insulation class	
Primary winding of transformer Myrra	2374 Ω	2880 Ω	54 K	95 K	Class 130	
Secondary winding of transformer Myrra	25,9 Ω	31,0 Ω	50 K	95 K	Class 130	
Primary winding of transformer Teammagnetics	2222 Ω	2740 Ω	61 K	115 K	Class 155	
Secondary winding of transformer Teammagnetics	17,9 Ω	22,4 Ω	65 K	115 K	Class 155	
Supplementary information:						

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
13.2	TABLE: Leakage current		P
	Heating appliances: 1.15 x rated input (W).. :	$P = 1,15 \times P_n \times (240/230)^2$ HSH052E = 1878 W HHT282E = 3760 W	—
	Motor-operated and combined appliances: 1.06 x rated voltage (V)	-	—
Leakage current between		I (mA)	Max. allowed I (mA)
Live parts and accessible earthed metal parts on HSH052E		0,35 mA	0,75 mA
Live parts and accessible earthed metal parts on HHT282E		0,22 mA	0,75 mA
Live parts and accessible thermoplastic enclosure (ALU foil) on HSH052E		< 0,03 mA peak	0,35 mA peak
Live parts and accessible thermoplastic enclosure (ALU foil) on HHT282E		< 0,03 mA peak	0,35 mA peak
Supplementary information:			

13.3	TABLE: Dielectric strength		P
Test voltage applied between:		Test potential applied (V)	Breakdown / flashover (Yes/No)
Basic insulation on HSH052E		1250 V	No
Basic insulation on HHT282E		1250 V	No
Supplementary insulation HSH052E		1750 V	No
Supplementary insulation HHT282E		1750 V	No
Reinforced insulation HSH052E		3000 V	No
Reinforced insulation HHT282E		3000 V	No
Supplementary information:			

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

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict

16.2	TABLE: Leakage current on HSH052E		P
	Single phase appliances: 1.06 x rated voltage (V)	254,4 V	—
	Three phase appliances 1.06 x rated voltage divided by $\sqrt{3}$ (V)	-	—
Leakage current between		I (mA)	Max. allowed I (mA)
Live parts and accessible earthed metal parts on HSH052E		0,22 mA	0,75 mA
Live parts and accessible earthed metal parts on HHT282E		0,32 mA	0,75 mA
Live parts and accessible thermoplastic enclosure (ALU foil) on HSH052E		< 0,03 mA	0,25 mA
Live parts and accessible thermoplastic enclosure (ALU foil) on HHT282E		< 0,03 mA	0,25 mA
Supplementary information:			

16.3	TABLE: Dielectric strength		P
Test voltage applied between:		Test potential applied (V)	Breakdown / flashover (Yes/No)
Basic insulation on HSH052E		1000 V	No
Basic insulation on HHT282E		1000 V	No
Supplementary insulation HSH052E		1750 V	No
Supplementary insulation HHT282E		1750 V	No
Reinforced insulation HSH052E		3000 V	No
Reinforced insulation HHT282E		3000 V	No
Supplementary information:			

17	TABLE: Overload protection		P
Thermocouple locations		Max. temperature rise measured, ΔT (K)	Max. temperature rise limit, ΔT (K)
Supplementary information:			

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict

17	TABLE: Overload protection, resistance method on HSH052E and HHT282E				P	
	Test voltage (V) :	243,8 V		—		
	Ambient, t1 (°C) :	24°C		—		
	Ambient, t2 (°C) :	25°C		—		
Temperature of winding		R1 (Ω)	R2 (Ω)	Δ T (K)	T (°C)	Max. T (°C)
Primary winding of transformer Myrra		2374 Ω	3600 K	133 K	158°C	175°C
Secondary winding of transformer Myrra		25,9 Ω	39,5 K	135 K	160°C	175°C
Primary winding of transformer Teammagnetics		2222 Ω	3322 K	129 K	154°C	190°C
Secondary winding of transformer Teammagnetics		17,9 Ω	26,8 K	129 K	154°C	190°C
Supplementary information:						

19	Abnormal operation conditions						P
Operational characteristics				YES/NO	Operational conditions		
Are there electronic circuits to control the appliance operation?				YES	Functional operation		
Are there “off” or “stand-by” position?				YES			
The unintended operation of the appliance results in dangerous malfunction?				NO			
Sub-clause	Operating conditions description	Test results description	PEC description	EMP 19.11.4	Software type required	19.11.3 PEC	Final result
19.2	0,85 x P	Temperatures are within the limits	N/A	N/A	N/A	N/A	P
19.3	1,24 x P	Temperatures are within the limits	N/A	N/A	N/A	N/A	P
19.4	Short circuit of thermostat	Temperatures are within the limits	N/A	N/A	N/A	N/A	P
19.5	1,15 x P	Temperatures are within the limits	N/A	N/A	N/A	N/A	P
19.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.11.2	Short circuits on PCB	No hazardous situations	N/A	N/A	N/A	N/A	P
19.11.4.8	Reduced supply voltage	The oven operates normally from the point at which the voltage decrease occurred.	N/A	N/A	N/A	N/A	P
19.10X	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Supplementary information:							

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict

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

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

19.13	TABLE: Abnormal operation, temperature rises			P
Thermocouple locations		Max. temperature rise measured, Δ T (K)	Max. temperature rise limit, Δ T (K)	
Supply cord on HSH052E		30 K	150 K	
Supply cord on HHT282E		44 K	150 K	
Test corner on HSH052E		28 K	150 K	
Test corner on HHT282E		35 K	150 K	
Supplementary information:				

21.1	TABLE: Impact resistance			P
Impacts per surface	Surface tested	Impact energy (J)	Comments	
3 impacts	Metal enclosure	0,5 J	No break of the surface	
3 impacts	Display	0,5 J	No break of the surface	
3 impacts	Handles	0,5 J	No break of the surface	
Supplementary information:				

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict

24.1	TABLE: Critical components information					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Power supply cord for all models	+ Wasung (Guangdong Huasheng)	H07RN-F	450/750 V; 3 x 1,5 mm ²	60245 IEC 66 EN 50525-2-21	VDE	
Power supply cord for all models except for HHT162, HHT282, HHB128, HHB192	+ Wasung (Guangdong Huasheng)	H07RN-F	450/750 V; 3 x 1,0 mm ²	60245 IEC 66 EN 50525-2-21	VDE	
Power supply cord for all models except for HHT162, HHT282, HHB128, HHB192	+ Wasung (Guangdong Huasheng)	H05RN-F	450/750 V; 3 x 1,0 mm ²	60245 IEC 57 EN 50525-2-21	VDE	
Plug (EU)	+ Wasung (Guangdong Huasheng)	CT-103	250 V; 16 A; C4	IEC 60884-1/CEE7	VDE	
Alt plug (EU)	+ Wasung (Guangdong Huasheng)	CT-104	250 V; 16 A; C4	IEC 60884-1/CEE7	VDE	
Alt. plug (EU)	+ Gold Mark	GMF02	250 V; 16 A; C4	IEC 60884-1/CEE7	VDE	
Plug (UK)	+ Wasung (Guangdong Huasheng)	CT-307	250 V; 13 A	BS 1363-1	ASTA	
Alt. plug (UK)	+ Gold Mark	FP1	250 V; 13 A	BS 1363-1	BSI	
Supply terminal	ElettroGibi (ITW Industrial Components)	PA27- WP...FV	450 V; 24 A; 2,5 mm ² ; 125°C	IEC/EN 60998 IEC/EN 60335	VDE	
Alt. supply terminal	Körner	OK 433 FV series	450 V; 24 A; 2,5 mm ² ; 150°C: GWT 750 (< 2 s)	IEC/EN 60998 IEC/EN 60335	VDE	
Non-self-resetting thermal cut-out	E.G.O.	55.32559.08 0	400 V; 3 x 30(5) A; 270°C-16 K	IEC/EN 60730	VDE	
Heating conductor	Elitherm	RS	220 V; 160 W/m; 2,1 Ω/m or 2,85 Ω/m or 4,0 Ω/m	IEC/EN 60335	Tested with the appliance	
Alt. heating conductor	Sedes Group	303097300 / 34300990	220 V; 160 W/m; 2,1 Ω/m or 2,85 Ω/m or 4,0 Ω/m	IEC/EN 60335	Tested with the appliance	
Temperature sensor of oven	Termics	MOD00012 / MOD00016	PT100; Ø6x80 mm; 1,5 / 3 m; 140°C	IEC/EN 60335	Tested with the appliance	

IEC 60335-2-49					
Clause	Requirement + Test			Result - Remark	Verdict
24.1	TABLE: Critical components information				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
Temperature sensor of heating conductor	Termics	MOD00014	PT100; Ø3x150 mm; 140°C	IEC/EN 60335	Tested with the appliance
Alt. temperature sensor of heating conductor	Termics	MOD00052 / MOD00053	PT100; Ø3x80 mm; 140°C; 3 / 1,5 m	IEC/EN 60335	Tested with the appliance
Terminals for internal connections	Calor	E72	450 V; 32 A; 4 mm ² ; 800°C; two poles; ceramic	IEC/EN 60335	Tested with the appliance
Fuse-link for HHB048, HSH031, HSW011, HSW001	+ Shurter	SSU or SPT	250 V; 5 A; 5x20	IEC/EN 60127	VDE
Alt. fuse-link for HHB048, HSH031, HSW011, HSW001	+ Italweber	50F or 50T	250 V; 5 A; 5x20	IEC/EN 60127	IMQ
Alt. fuse-link for HHB048, HSH031, HSW011, HSW001	+ Omega / Bussmann	ST520250; ST521250; ST522250; ST523250	250 V; 5 A; 5x20	IEC/EN 60127	IMQ, VDE
Fuse-link for HSH051, HSW012, HSW013, HSH052, HHT052, HHT081, HHT082, HHB096, HHT282, HSW002, HSW003, HHB192	+ Shurter	SSU or SPT	250 V; 8 A; 5x20	IEC/EN 60127	VDE
Alt. fuse-link for HSH051, HSW012, HSW013, HSH052, HHT052, HHT081, HHT082, HHB096, HHT282, HSW002, HSW003, HHB192	+ Omega / Bussmann	ST520280; ST521280; ST522280; ST523280	250 V; 8 A; 5x20	IEC/EN 60127	IMQ, VDE
Fuse-link for HHB128, HHT161	+ Shurter	SSU or SPT	250 V; 12,5 A; 5x20	IEC/EN 60127	VDE
Fuse-link for HHT162	+ Shurter	SSU or SPT	250 V; 16 A; 5x20	IEC/EN 60127	VDE
Fuse holder	Conqer Electronics	CQ-200N	250 V; 15 A	IEC/EN 60335	Tested with the appliance
Control PCB	ECS	1820272B	App. overall dim.: 148 x 33 mm, thickness 1,5 mm	IEC/EN 60335	Tested with the appliance

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict

24.1	TABLE: Critical components information					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Power PCB with:	ECS	1820271B	App. overall dim.: 113 x 70 mm, thickness 1,5 mm	IEC/EN 60335	Tested with the appliance	
- terminals	PTR	AK350	250 V; 17,5 A; 2,5 mm ²	IEC/EN 60998 IEC/EN 60335	VDE, tested with the appliance	
- alt. terminals	Sauro	MSG	250 V / 450 V; 17,5 A; 1,5 mm ² / 2,5 mm ² ; T110; GWFI 850; GWIT 775	IEC/EN 60998 IEC/EN 60695-2-12 IEC/EN 60695-2-13 IEC/EN 60335	VDE, tested with the appliance	
- alt. terminals	Sauro	MSM	250 V; 24 A; 2,5 mm ² ; T110; GWFI 850; GWIT 775	IEC/EN 60998 IEC/EN 60695-2-12 IEC/EN 60695-2-13 IEC/EN 60335	VDE, tested with the appliance	
- transformer	Myrra	44123	230 V; 50/60 Hz; 12 V; 2VA; class 130 (B)	IEC/EN 61558 IEC/EN 60335	VDE, tested with the appliance	
- alt. transformer	Teammagnetics	EI30/15,5 03- 3004-10	Pri: 230 V; 50/60 Hz; Sec: 12 V; 2,1 VA; class 155 (F)	IEC/EN 61558 IEC/EN 60335	VDE, tested with the appliance	
- relay	Omron	G2RL-1-E	250 V; 16 A; 12 VDC; 85°C; 30E3	IEC/EN 61810	VDE	
- alt. relay	Fujitsu	FTR- K1CK012W	250 V; 16 A; 12 VDC; 85°C; 50E3	IEC/EN 61810	VDE	
- alt. relay	Hongfa	HF115F/012- 1ZS3	250 V; 12/16 A; 12 VDC; 85°C; 10E4	IEC/EN 61810	VDE	
PCB material	+ KCS	FP-D	V-0; 130°C	IEC/EN 60335	Tested with the appliance	

Supplementary information:

¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.

+ means, that component from other vendor and other model number, but with the same rating and equivalent approvals are accepted.

28.1	TABLE: Threaded part torque test			P
Threaded part identification	Diameter of thread (mm)	Column number (I, II, or III)	Applied torque (Nm)	
Nuts for earthing connection	2,88 mm	II	0,5 Nm	
Enclosure screws	4,13 mm	II	1,8 Nm	

Supplementary information:

IEC 60335-2-49						
Clause	Requirement + Test	Result - Remark				Verdict
29.1	TABLE: Clearances					P
	Overvoltage category	II				—
		Type of insulation:				
Rated impulse voltage (V):	Min. cl (mm)	Basic (mm)	Supplementary (mm)	Reinforced (mm)	Functional (mm)	Verdict / Remark
330	0,2* / 0,5 / 0,8**					
500	0,2* / 0,5 / 0,8**					
800	0,2* / 0,5 / 0,8**					
1 500	0,5 / 0,8** / 1,0***					
2 500	1,5 / 2,0***	X	X		X	P
4 000	3,0 / 3,5***			X		P
6 000	5,5 / 6,0***					
8 000	8,0 / 8,5***					
10 000	11,0 / 11,5***					
Supplementary information: *) For tracks on printed circuit boards if pollution degree 1 and 2 **) For pollution degree 3 ***) If the construction is affected by wear, distortion, movement of the parts or during assembly						

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict

29.2	TABLE: Creepage distances, basic, supplementary and reinforced insulation										P
Working voltage (V)	Creepage distance (mm) Pollution degree							Type of insulation			Verdict
	1	2			3						
	Material group				Material group						
		I	II	IIIa/IIIb	I	II	IIIa/IIIb*	B**	S**	R**	
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9		—	—	
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9	—		—	
≤50	0,36	1,2	1,7	2,4	3,0	3,4	3,8	—	—		
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4		—	—	
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4	—		—	
125	0,56	1,5	2,1	3,0	3,8	4,2	4,8	—	—		
250	0,56	1,25	1,8	2,5	3,2	3,6	4,0	X	—	—	P
250	0,56	1,25	1,8	2,5	3,2	3,6	4,0	—	X	—	P
250	1,12	2,5	3,6	5,0	6,4	7,2	8,0	—	—	X	P
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3		—	—	
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	—		—	
400	2,0	4,0	5,6	8,0	10,0	11,2	12,6	—	—		
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0		—	—	
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	—		—	
500	2,6	5,0	7,2	10,0	12,6	14,2	16,0	—	—		
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0		—	—	
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	—		—	
>630 and ≤800	3,6	6,4	9,0	12,6	16,0	18,0	20,0	—	—		
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5		—	—	
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	—		—	
>800 and ≤1000	4,8	8,0	11,2	16,0	20,0	22,0	25,0	—	—		
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0		—	—	
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	—		—	
>1000 and ≤1250	6,4	10,0	14,2	20,0	25,0	28,0	32,0	—	—		
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0		—	—	
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	—		—	

IEC 60335-2-49											
Clause	Requirement + Test							Result - Remark			Verdict
>1250 and ≤1600	8,4	12,6	18,0	25,0	32,0	36,0	40,0	—	—		
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0		—	—	
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	—		—	
>1600 and ≤2000	11,2	16,0	22,0	32,0	40,0	44,0	50,0	—	—		
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0		—	—	
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	—		—	
>2000 and ≤2500	15,0	20,0	28,0	40,0	50,0	56,0	64,0	—	—		
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0		—	—	
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	—		—	
>2500 and ≤3200	20,0	25,0	36,0	50,0	64,0	72,0	80,0	—	—		
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0		—	—	
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	—		—	
>3200 and ≤4000	25,0	32,0	44,0	64,0	80,0	90,0	100,0	—	—		
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0		—	—	
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	—		—	
>4000 and ≤5000	32,0	40,0	56,0	80,0	100,0	112,0	126,0	—	—		
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0		—	—	
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	—		—	
>5000 and ≤6300	40,0	50,0	72,0	100,0	126,0	142,0	160,0	—	—		
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0		—	—	
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	—		—	
>6300 and ≤8000	50,0	64,0	90,0	126,0	160,0	180,0	200,0	—	—		
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0		—	—	
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	—		—	
>8000 and ≤10000	64,0	80,0	112,0	160,0	200,0	220,0	250,0	—	—		
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0		—	—	
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	—		—	
>10000 and ≤12500	80,0	100,0	142,0	200,0	250,0	280,0	320,0	—	—		
Supplementary information:											
*) Material group IIIb is allowed if the working voltage does not exceed 50 V											
**) B = Basic insulation, S = Supplementary insulation, R = Reinforced insulation											

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict

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

Supplementary information:

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

30.1	TABLE: Ball Pressure Test of Thermoplastics		P
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Allowed impression diameter (mm)		2,0 mm		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Handle material Aquamid 6G30	Aquafil	75°C	1,0 mm	
Supply terminal PA27-WP...FV	ElettroGibi	125°C	P*	
Supply terminal OK 433 FV series	Körner	125	P*	

IEC 60335-2-49			
Clause	Requirement + Test	Result - Remark	Verdict
30.1	TABLE: Ball Pressure Test of Thermoplastics		P
Allowed impression diameter (mm)		2,0 mm	—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
Non-self-resetting thermal cut-out 55.32559.080	E.G.O.	125°C	P*
Fuse holder CQ-200N	Conqer Electronics	125°C	< 1,0 mm
Terminals AK350	PTR	125°C	P*
Terminals MSG	Sauro	125°C	P*
Terminals MSM	Sauro	125°C	P*
Relay G2RL-1-E	Omron	125°C	P*
Relay FTR-K1CK012W	Fujitsu	125°C	P*
Relay HF115F/012-1ZS3	Hongfa	125°C	P*
Supplementary information: * Certified component			

30.2	TABLE: Resistance to heat and fire - Glow wire tests						P	
Object/ Part No./ Material	Manufacturer/ trademark	Glow wire test (GWT); (°C)						Verdict
		550	650		750		850	
			te	ti	te	ti		
Handle material Aquamid 6G30	Aquafil	-	P <2s	P No	-	-	-	P
Supply terminal PA27-WP...FV	ElettroGibi	-	-	-	P <2s	P No	P	P
Supply terminal OK 433 FV series	Körner				P <2s	P No	P	P
Non-self-resetting thermal cut-out 55.32559.080	E.G.O.	-	-	-	P <2s	P No	P	P
Fuse holder CQ-200N	Conqer Electronics	-	-	-	P <2s	P No	P	P
Terminals AK350	PTR	-	-	-	P <2s	P No	P	P
Relay G2RL-1-E	Omron	-	-	-	P <2s	P No	P	P
Relay FTR-K1CK012W	Fujitsu	-	-	-	P <2s	P No	P	P
Relay HF115F/012-1ZS3	Hongfa	-	-	-	P <2s	P No	P	P
Transformer enclosure 44123	Myrra	-	-	-	P <2s	P No	P	P
Transformer enclosure EI30/15,5 03-3004-10	Teammagnetics	-	-	-	P <2s	P No	P	P

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Clause	Requirement + Test	Result - Remark	Verdict

Object/ Part No./ Material	Manufacturer/ trademark	Glow-wire flammability index (GWFI), °C				GW ignition temp. (GWIT), °C		Verdict
		550	650	750	850	675	775	
Terminals MSG	Sauro	-	-	-	850	-	775	P
Terminals MSM	Sauro	-	-	-	850	-	775	P
The test specimen passed the glow wire test (GWT) with no ignition $[(t_e - t_i) \leq 2s]$ (Yes/No):								Yes
If no, then surrounding parts passed the needle-flame test of annex E (Yes/No)..... :								N/A
The test specimen passed the test by virtue of most of the flaming material being withdrawn with the glow-wire (Yes/No)?								No
Ignition of the specified layer placed underneath the test specimen (Yes/No)								No
Supplementary information: - 550 °C GWT not relevant (or applicable) to parts of material classified at least HB40 or if relevant HBF - The GWIT pre-selection option, the 850 °C GWFI pre-selection option, and the 850 °C GWT are not relevant (or applicable) for attended appliances								

30.2/30.4	TABLE: Needle- flame test (NFT)				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
PCB material FP-D	KCS	30 s	No	0	P
Supplementary information: NFT not relevant (or applicable) for Parts of material classified as V-0 or V-1 NFT not relevant (or applicable) for Base material of PCBs classified as V-0 or if relevant VTM-0					

List of test equipment used:

Clause	Type of test equipment	Model or type number	Manufacturer	SIQ reg. Num.	Characteristic	Calibration due date
4.7	Temperature Humidity Meter	OM-CO-PRHTEMP 2000	OMEGA	106941	-20°C-60°C; 0-95%	2017-11-07
8, 20	Standard test finger	T5-75	TESTING	103477	See IEC 60335-1:01 test probe B0	2019-07-23
8	Test pin	-	TESTING	103597	See 9.2 and IEC 61032, test probe 13	2019-07-23
8, 20	Test probe 18	T5-77	TESTING	103602	Test probe 18	2019-07-23
10, 11, 13, 17, 19	Power meter, multimeter	WT333	YOKOGAWA	106876	three phase multi-meter, max. 20 A 600 V	2017-06-21
11, 17, 19	Multimeter, thermometer	2700	KEITHLEY	104425	Range: 0,1-1000 V; 10 mA-3 A; 100 Ω-100 MΩ	2017-03-11
11, 17, 19	Multimeter, thermometer	2700	KEITHLEY	106753	Range: 0,1-1000 V; 10 mA-3 A; 100 Ω-100 MΩ	2017-11-11
11, 17, 19	Multimeter, thermometer	2700	KEITHLEY	106940	Range: 0,1-1000 V; 10 mA-3 A; 100 Ω-100 MΩ	2017-04-22
13.2; 16.2	Leakage current tester	T0S3200	KIKUSUI	106687	Range: 30 μA – 30 mA	2017-12-23
13.3; 16.3	HV tester	T0S5300	KIKUSUI	106877	Range: 0-5000 V	2017-06-24
15.1	Testing equip. according to IEC 529	-	-	ID 90	IP01-IP08	-
15.1	Splash apparatus	-	-	ID552	-	-
15.3	Temperature Humidity Meter	2590-3S	AHLBORN	105225	-20°C-80°C; 0-100%	2017-07-05
15.3	Climatic room	Room 70	SIQ	-	Range: 20 °C ÷ 30 °C humidity: 90-96 %	-
20	Digital protractor	PRO 360	MITUTOYO	103580	360°	2018-04-18
21	Impact test hammer	EU 1044	CRATER CONTROL	102483	Range: 0,5 Nm	2021-11-11
22	Dynamometer	P 10.36	PTL	101576	0-100 N	2017-07-17
27	Earth continuity tester	T0S6200	KIKUSUI	106874	-	2017-06-24
28	Torque wrench	760/30	STAHLWILLE	104375	0,6-3,0 Nm	2017-03-14
28	Torque wrench	760/15	STAHLWILLE	104376	0,3-1,5 Nm	2017-03-14
29	Digimatic caliper	CD-15CPX	MITUTOYO	105204	Range: 150 mm ± 0,02 mm; resolution: 0,01 mm	2017-06-03
30.1	Ball pressure apparatus	-	SIQ	104390	-	2017-05-18
30.1	Digital thermometer	HH806AU	OMEGA	105216	-200°C to 1370°C	2017-03-09

Clause	Type of test equipment	Model or type number	Manufacturer	SIQ reg. Num.	Characteristic	Calibration due date
30.1, 30.2	Clock	Stopwatch	ZZERO	ID340	-	2017-11-11
30.1	Magnifying lens	-	VEGA	103617	x10	2019-09-24
30.2	Glow wire tester	T03.14	PTL	102252	Range: max.: 960°C	2018-01-25
30.2	Apparatus for needle flame	-	SIQ	ID116	-	-

IEC60335_2_49F - ATTACHMENT 1

Clause	Requirement + Test	Result - Remark	Verdict
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ATTACHMENT TO TEST REPORT IEC 60335-2-49

EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Household and similar electrical appliances – Safety –
 Part 2: Particular requirements for commercial electric hot cupboards

Differences according to: EN 60335-2-49:2003 + A1:2008 + A11:2012 used in conjunction with EN 60335-1:2012
 EN 62233:2008

Attachment Form No.: EU_GD_IEC60335_2_49F

Attachment Originator: IMQ S.p.A.

Master Attachment: 2013-06

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IEC60335_2_49F - ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
	CENELEC COMMON MODIFICATIONS		
6.1	Delete "class 0" and "class 01"	Class I	N/A
7.1	Single-phase appliances to be connected to the supply mains: 230 V covered		P
	Multi-phase appliances to be connected to the supply mains: 400 V covered		N/A
7.10	Devices used to start/stop operational functions of the appliance distinguished from other manual devices by means of shape, size, surface texture, position, etc.		P
	An indication that the device has been operated is given by:		P
	<ul style="list-style-type: none"> a tactile feedback, or 		N/A
	<ul style="list-style-type: none"> an audible and visual feedback 	The indication with LED lamp on the control panel and sound "buzzer" when the appliance is switched ON or OFF	P
7.12	The instructions include the substance of the following:		P
	- this appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved	This requirement is not applicable according to standard EN 60335-2-49/A1	N/A
	- children shall not play with the appliance	This requirement is not applicable according to standard EN 60335-2-49/A1	N/A
	- cleaning and user maintenance shall not be made by children without supervision	This requirement is not applicable according to standard EN 60335-2-49/A1	N/A
	The front cover of the instructions shall include the substance of the following: CAUTION: Read the instructions before using the machine. This wording may be replaced by symbols ISO 7000-0434 and ISO 7000-0790. (EN 60335-2-49/A11)	On the front cover is statement and symbol.	P
	If symbols IEC 60417-5021, ISO 7000-0434 and ISO 7000-0790 are used on the product or in the instructions, their meaning shall be explained. (EN 60335-2-49/A11)	The meanings of all symbols used are explained in the instructions	P
	The instructions shall also state the maximum weight of the empty appliance(EN 60335-2-49/A11)		P

IEC60335_2_49F - ATTACHMENT 1

Clause	Requirement + Test	Result - Remark	Verdict
7.1.2.1	For appliances that are permanently connected to fixed wiring and for which leakage currents may exceed 10 mA, particularly if disconnected or not used for long periods, or during the initial installation, the instructions shall give recommendations regarding the rating and type of the additional protective devices, such as residual-current device(s), to be installed. (EN 60335-2-49/A11)	Power supply cord with plug	N/A
7.12.Z1	The specific instructions related to the safe operation of this appliance is collated together in the front section of the user instructions		P
	The height of the characters, measured on the capital letters, is at least 3 mm		P
	These instructions are also available in an alternative format, e.g. on a website		P
8.1.1	Also test probe 18 of EN 61032 is applied		P
	The appliance being in every possible position during the test		P
	The force on the probe in the straight position is increased to 10 N when probe 18 is used		P
	When using test probe 18 the appliance is fully assembled as in normal use without any parts removed, and		P
	parts intended to be removed for user maintenance are also not removed	No removable parts	N/A
8.2	Compliance is checked by applying the test probes of EN 61032		P
	For built-in appliances and fixed appliances, the test probe B and probe 18 of EN 61032 are applied only after installation		P
11.8	Footnotes to "External enclosure of motor-operated appliances" to be taken into account	Heating appliance	N/A
15.1.2	Appliances with an automatic cord reel tested with the cord in the most unfavourable position so that the reeling of the wet cord may affect electrical insulation during operation, the cord not being dried before reeling	No automatic cord reel	N/A
20.2	When using the test probe similar to test probe B with a circular stop face, the accessories and detachable covers are removed	No moving parts	N/A
	Test probe 18 applied with a force of 2,5N on the appliance fully assembled		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
24.1	Components comply with the safety requirements specified in the relevant standards as far as they reasonably apply		P
	The requirements of Clause 29 of this standard apply between live parts of components and accessible parts of the appliance.		P
	The requirements of 30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections inside components		P
	Components that have not been previously tested or do not comply with the standard for the relevant component are tested according to the requirements of 30.2		P
	Components that have been previously tested and shown to comply with the resistance to fire requirements in the standard for the relevant component need not be retested provided that:		P
	- the severity specified in the component standard is not less than the severity specified in 30.2, and		P
	- the test report for the component states whether it complied with the standard for the relevant component with or without flame, flames not exceeding 2 s during the test are ignored		P
	Unless components have been previously tested and found to comply with the relevant standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9		P
	For components mentioned in 24.1.1 to 24.1.9, no additional tests specified in the relevant standard for the component are necessary other than those specified in 24.1.1 to 24.1.9		P
	Components that have not been separately tested and found to comply with the relevant standard, and		P
	components that are not marked or not used in accordance with their marking,		P
	are tested in accordance with the conditions occurring in the appliance, the number of samples being that required by the relevant standard		P
	Lamp holders and starter holders that have not been previously tested and found to comply with the relevant standard are tested as a part of the appliance and additionally comply with the gauging and interchangeability requirements of the relevant standard under the conditions occurring in the appliance	No lamp holders and starter holders	N/A

IEC60335_2_49F - ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
	Where the relevant standard specifies these gauging and interchangeability requirements at elevated temperatures, the temperatures measured during the tests of Clause 11 are used		N/A
	Plugs and socket-outlets and other connecting devices of interconnection cords are not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1, or	No interconnection cord	N/A
	with connectors and appliance inlets complying with the standard sheets of IEC 60320-1,	No connectors and appliance inlets	N/A
	if direct supply to these parts from the supply mains gives rise to a hazard		N/A
24.1.7	If the remote operation of the appliance is via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is EN 41003		N/A
	Compliance with Clause 8 of this standard is not impaired by connecting the appliance to a device covered by EN 41003		N/A
24.Z1	For motor running capacitors (IEC 60252-1 type P2) with a metallic enclosure having an overpressure fuse the flame testing of internal plastic parts supporting current carrying connections as required in 30.2.2 and 30.2.3.1 is not necessary	No motors	N/A
25.6	Supply cords of single-phase portable appliances having a rated current not exceeding 16 A, fitted with a plug complying with the following standard sheets of IEC/TR 60083:		P
	- for Class I appliances: standard sheet C2b, C3b or C4	C4	P
	- for Class II appliances: standard sheet C5 or C6.....		N/A
25.7	Rubber sheathed cords (60245 IEC 53) are not suitable for appliances intended to be used outdoors or when they are liable to be exposed to significant amount of ultraviolet radiation	Indoor use only	N/A
	Halogen-free thermoplastic compound sheathed supply cords have properties at least those of:		N/A
	<ul style="list-style-type: none"> halogen-free thermoplastic compound sheathed cords (H03Z1Z1H2-F or H03Z1Z1-F), for appliances having a mass not exceeding 3 kg 		N/A
	<ul style="list-style-type: none"> halogen-free thermoplastic compound sheathed cords (H05Z1Z1H2-F or H05Z1Z1-F), for other appliances 		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Cross-linked halogen-free compound sheathed supply cords have properties at least those of cross-linked halogen-free compound sheathed cords (H07ZZ-F)		N/A
26.11	Conductors connected by soldering are not considered to be positioned or fixed so that reliance is not placed upon the soldering alone to maintain them in position unless they are held in place near the terminals independently of the solder		N/A
29.3.Z1	Appliance constructed so that if there is a possibility of damaging the insulation during installation, the insulation withstands the scratch and penetration test of 21.2		N/A
32	Compliance regarding electromagnetic fields is checked according to EN 62233		P
Annex I, 19.I.101	The appliance is supplied at rated voltage and operated under normal operation with each of the fault conditions specified		N/A
	The duration of the test is as specified in 19.7		N/A

IEC60335_2_49F - ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
ZA	ANNEX ZA (NORMATIVE) SPECIAL NATIONAL CONDITIONS		P
	Norway		N/A
19.5	The test is also applicable to appliances intended to be permanently connected to fixed wiring	Power supply cord with plug	N/A
	Norway		N/A
22.2	The second paragraph of this subclause, dealing with single-phase, permanently connected class I appliances having heating elements, is not applicable due to the supply system	Class I appliance provided with power supply cord with plug	N/A
	All CENELEC countries		P
25.6 and 25.25	Information concerning National plug and socket-outlets is available from the CENELEC website. Normative national requirements concerning plug and socket-outlets are shown in the relevant National standard		P
	Ireland and United Kingdom		P
25.8	In the table, the lines for 10 A and 16 A are replaced by:		P
	> 10 and ≤ 13 1,25		P
	> 13 and ≤ 16 1,5		P
ZB	ANNEX ZB (INFORMATIVE) A-DEVIATIONS		P
	Ireland		N/A
25.6	These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs complying with I.S. 401:1997, or equivalent, to be fitted to domestic appliances	Plugs comply with BS 1363-1	N/A
	United Kingdom		P
25.6	These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs to BS 1363 to be fitted to domestic appliances. It also allows plugs to BS 4573 and EN 50075 to be fitted to shavers and toothbrushes	Plugs comply with BS 1363-1	P
ZC	ANNEX ZC (NORMATIVE) NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS		P
	A list of referenced documents in this standard		P
ZD	ANNEX ZD (INFORMATIVE) IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS		P

IEC60335_2_49F - ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
	A table with IEC and CENELEC code designations for flexible cords		P
ZE	ANNEX ZE (INFORMATIVE) SPECIFIC ADDITIONAL REQUIREMENTS FOR APPLIANCES AND MACHINES INTENDED FOR COMMERCIAL USE		P
7.1	Business name and full address of the manufacturer and, where applicable, his authorized representative.....:	MODULINE srl, Via dell'industria, 11 Zona Ind. di S.Giacomo di Veglia, I-31029 Vittorio Veneto (TV), Italy	P
	Model or type reference	On the label is stated type and model	P
	Serial number, if any	Stated on the label	P
	Production year	Stated on the label	
	Designation of the appliance	HSH, HSW, HHT and HHB are designations of the ovens	P
7.12	Instructions provided with the appliance so that the appliance can be used safely		P
	The instructions contain at least the following information:		P
	- the business name and full address of the manufacturer and, where applicable, his authorized representative	MODULINE srl, Via dell'industria, 11 Zona Ind. di S.Giacomo di Veglia, I-31029 Vittorio Veneto (TV), Italy	P
	- model or type reference of the appliance as marked on the appliance itself, except for the serial number	Stated is type and model	P
	- the designation of the appliance together with its explanation in case it is given by a combination of letters and/or numbers	HSH, HSW, HHT or HHB are designations of the ovens	P
	- the general description of the appliance, when needed due to the complexity of the appliance		P
	- specific precautions if required during installation, operation, adjusting, user maintenance, cleaning, repairing or moving		P
	- when needed drawings, diagrams, descriptions and explanations necessary for the safe use and user maintenance of the appliance		P
	- the possible reasonably foreseeable misuse and, whenever relevant, a warning against the effects it may have on the safe use of the appliance		P
	The words "Original instructions" appear on the language version(s) verified by the manufacturer or by the authorized representative	Original instructions in Italian language	P

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Clause	Requirement + Test	Result - Remark	Verdict
	When a translation of the original instructions has been provided by a person introducing the appliance on the market; the meaning of the sentence "Translation of the original instructions" appear in the relevant instructions delivered with the appliance	Instructions in all other languages	P
	The instructions for maintenance/service to be done by specialized personnel, mandated by the manufacturer or the authorized representative may be supplied in only one Community language which the specialized personnel understand		N/A
	The instructions indicate the type and frequency of inspections and maintenance required for safe operation including the preventive maintenance measures		P
	– the intended use of the appliance as covered by the scope of this standard; (EN 60335-2-49/A11)		P
	– instructions regarding user maintenance and operation of the appliance and, if necessary, instructions for the training of operators (EN 60335-2-49/A11)		P
	– instructions designed to enable adjustment and maintenance to be carried out safely, including the protective measures that should be taken during these operations; (EN 60335-2-49/A11)		P
	– the conditions under which the appliance is stable during use, dismantling when out of use, testing or foreseeable breakdowns; (EN 60335-2-49/A11)		P
	– the operating method to be followed in the event of accident or breakdown to prevent unsafe actions. (EN 60335-2-49/A11)		P
	– information regarding the use of personal protection equipment in case of spreading hot food stuff. (EN 60335-2-49/A11)		N/A
	– warning concerning possible slippery floor adjacent to the appliance. (EN 60335-2-49/A11)		P
7.12.ZE1	If needed for specific appliances, the following information to be given:		P
	<ul style="list-style-type: none"> • on use, transportation, assembly, dismantling when out of service, testing or foreseeable breakdowns, if these operations have consequences on stability of the appliance in order to avoid overturning, falling or uncontrolled movements of the appliance or of its component parts 		P

IEC60335_2_49F - ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
	<ul style="list-style-type: none"> on how to maintain adequate mechanical stability when in use, during transportation, assembly, dismantling, scrapping and any other action involving the appliance 		P
	<ul style="list-style-type: none"> on the protective measures to be taken by the user, including, where appropriate, the personal protective equipment to be provided 		P
	<ul style="list-style-type: none"> on the operating method to be followed in the event of accident or breakdown; if a blockage is likely to occur the operating method to safely unblock the appliance 		P
	<ul style="list-style-type: none"> on the specifications on the spare parts to be used, when these affect the health and safety of the operator 		P
	<ul style="list-style-type: none"> on airborne noise emissions, determined and declared in accordance with the relevant Part 2, which includes: 		P
	<ul style="list-style-type: none"> - the A-weighted emission sound pressure level at workstations, where this exceeds 70 dB(A); (EN 60335-2-49/A11) 	The sound emission is less than 70 dB (A) and it is stated in the instructions	P
7.12.ZE2	The instructions includes a warning to disconnect the appliance from its power source during service and when replacing parts		P
	If the removal of the plug is foreseen, it is clearly indicated that the removal of the plug has to be such that an operator can check from any of the points to which he has access that the plug remains removed		P
	If this is not possible, due to the construction of the appliance or its installation, a disconnection with a locking system in the isolated position is provided		N/A
7.12.ZE.10 1	The instructions shall include the possible reasonably foreseeable misuse and, whenever relevant, a warning against the effects it may have on the safe use of the appliance. At least, it shall include the substance of the following. WARNING: Appliances must be disconnected from their power supply during cleaning or maintenance and when replacing parts. (EN 60335-2-49/A11)	Disconnect the appliance from the mains power supply before carrying out any cleaning operations.	P
19.11.4.8	The appliance continues to operate, without causing any hazard to the user, from the same point in its operating cycle at which the voltage fluctuation occurred, or		P
	a manual operation is required to restart it		N/A

IEC60335_2_49F - ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
20.1	Appliances and their components and fittings have adequate mechanical stability during transportation, assembly, dismantling and any other action involving the appliance	Adequate components and fittings	P
20.2	Dangerous moving transmission parts safeguarded either by design or guards		N/A
	When guards are used, they are fixed guards, interlocking movable guards or protective devices		N/A
	Moving parts directly involved in the function of the appliance which cannot be made completely inaccessible fitted with:		N/A
	- fixed guards or interlocking movable guards preventing access to those sections of the parts that are not used in the work, and		N/A
	- adjustable guards restricting access to those sections of the moving parts where access is necessary		N/A
	Interlocking movable guards used where frequent access is required		N/A
21.1	Appliances and their components and fittings have adequate mechanical strength and is constructed to withstand such rough handling that may be expected in normal use, during transportation, assembly, dismantling, scrapping and any other action involving the appliance	Adequate components and fittings	P
22.ZE.1	For appliances provided with a seat, the seat gives adequate stability	No seat	N/A
	The distance between the seat and the control devices capable of being adapted to the operator		N/A
22.ZE.2	For appliances provided with separate devices for the start and the stop functions, the stop function is unambiguously identifiable and does always override the start function	No separate unit	N/A
	For appliances provided with one device performing the start and the stop function, the stop function is unambiguously identifiable and does always override the start function		N/A
22.ZE.3	Appliances designed in such a way that incorrect mounting is avoided, if this can lead to an unsafe situation		P
	If this is not possible, information on the correct mounting is given directly on the part and/or the enclosure		N/A

IEC60335_2_49F - ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
22.ZE.4	Where the weight, size or shape prevents appliances from being moved manually, they are fitted with attachments for lifting gear, or	HHT and HHB models are provided with the wheels, HSH and HSW models are provided with handles	P
	so designed that they can be fitted with such attachments, or		N/A
	be shaped in such a way that standard lifting gear can easily be used		N/A
	Appliances to be moved manually are constructed or equipped so that they can be moved easily and safely		P
22.ZE.5	The fixing systems of fixed guards which prevent access to dangerous moving transmission parts only removable with the use of tools	No moving parts	N/A
	The guard is opened at the extent needed to cause the interlocking to operate and is then closed. This operation is carried out for 5 000 cycles at a rate of 5 cycles per min. (EN 60335-2-49/A11)	No guard	N/A
	Where possible, guards are incapable of remaining in place without their fixings		N/A
	This does not apply if, after removal of the screws, or if the component is incorrectly repositioned, the appliance becomes inoperative		N/A
	Movable guards are interlocked		N/A
	The interlocking devices prevent the start of hazardous appliance functions until the guards are fixed in their position, and give a stop command whenever they are no longer closed	No interlock	N/A
	Where it is possible for an operator to reach the danger zone before the risk due to hazardous appliance functions has ceased, movable guards associated with a guard locking device in addition to an interlocking device that:		N/A
	- prevents the start of hazardous appliance functions until the guard is closed and locked, and		N/A
	- keeps the guard closed and locked until the risk of injury from the hazardous appliance functions has ceased		N/A
	Interlocking movable guards remain attached to the appliance when open, and	No interlock	N/A
	they are designed and constructed in such a way that they can be adjusted only by means of an intentional action		N/A
22.ZE.6	Interlocking movable guards designed in such a way that the absence or failure of one of their components prevents starting or stops the hazardous appliance functions	No moving parts	N/A

IEC60335_2_49F - ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
	The guard is opened to the extent needed to cause the interlocking to operate and is then closed, the number of operations being defined in the specific Part 2		N/A
	After this test any defect that may be expected in normal use is applied to the interlock system, including interruption of the supply, only one defect being simulated at a time		N/A
	After these tests the interlock system is fit for further use		N/A
22.ZE.7	Adjustable guards restricting access to areas of the moving parts strictly necessary for the work are:		N/A
	- adjustable manually or automatically, depending on the type of work involved, and		N/A
	- readily adjustable without the use of tools		N/A
22.ZE.8	In case of interruption, re-establishment after an interruption or fluctuation in whatever manner of the power supply, the appliance does not restart	No operation after interruption of power supply.	P
	However, automatic restarting of the operation is allowed if the appliance may continue to operate, without causing any hazard to the user, from the same point in its operating cycle at which the voltage interruption or fluctuation occurred		N/A
22.ZE.9	Appliances fitted with means to isolate them from all energy sources		N/A
	Such isolators are clearly identified, and		N/A
	they are capable of being locked if reconnection endanger persons		N/A
	After the energy source is disconnected, it is possible to dissipate any energy remaining or stored in the circuits of the appliance without risk to persons		N/A
22.ZE.101	Controls shall be : (EN 60335-2-49/A11)		P
	– clearly visible and identifiable,		P
	– positioned within easy reach of the operator's hand,		P
	– secured against accidental actuation, if their actuation could result in a hazard	No hazardous operation	N/A
22.ZE.102	Appliances shall comply with the hygiene requirements. (Compliance is checked by inspection and by the requirements of EN ISO 14159) (EN 60335-2-49/A11)		N/A
22.ZE.103	Appliances shall meet ergonomic principles.		N/A

IEC60335_2_49F - ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
	(Compliance is checked by inspection) NOTE Guidance may be found in EN 614-1 and EN 614-2.		N/A
ZF	ANNEX ZF (INFORMATIVE) CRITERIA APPLIED FOR THE ALLOCATION OF PRODUCTS COVERED BY STANDARDS IN THE EN 60335 SERIES UNDER LVD OR MD		N/A
	List of standards under CENELEC/TC61 with the allocation under the LVD (Low Voltage Directive) or the MD (Machinery Directive).....:	No moving parts	N/A
ZG	ANNEX ZG (NORMATIVE) UV APPLIANCES		N/A
	The following modifications to this standard apply to appliances having UV emitters		N/A
	This annex is not applicable to appliances covered by the scopes of IEC 60335-2-27, IEC 60335-2-59 or IEC 60335-2-109		N/A
7.12.ZG	The instructions for appliances incorporating UVC emitters include the substance of the following: WARNING — This appliance contains a UV emitter. Do not stare at the light source		N/A
32	For appliances incorporating UV emitters the manufacturer delivers a declaration providing evidence that the plastic material exposed to the radiation is UV resistant		N/A
ZZ	ANNEX ZZ (INFORMATIVE) COVERAGE OF ESSENTIAL REQUIREMENTS OF EC DIRECTIVES		N/A
	Description of the relation between this European standard and the LVD (Low Voltage Directive, 2006/95/EC) and the MD (Machinery Directive, 2006/42/EC)		N/A

Annex EN 62233:2008			
Clause	Requirement + Test	Result - Remark	Verdict
EMF- ELECTROMAGNETICS FIELDS			
	The tested product also complies with the requirements of EN 62233:2008		P
	Limit 100%	Measured max.: 2 %	P

EN 60335-1:2012/A11 - ATTACHMENT 2			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT 2 TO TEST REPORT EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Differences according to:		EN 60335-1:2012/A11:2014	

7.14	In NOTE Z1, replace IEC 82079-1 by EN 82079-1		N/A
Annex ZF	In Table ZF.1 – List of standards under CLC/TC 61, replace line of EN 60335-2-38		N/A

Photo documentation - ATTACHMENT 3

HSH052E



Photo documentation - ATTACHMENT 3

HSH052E



Photo documentation - ATTACHMENT 3

HSH052E



Photo documentation - ATTACHMENT 3

HSH052E

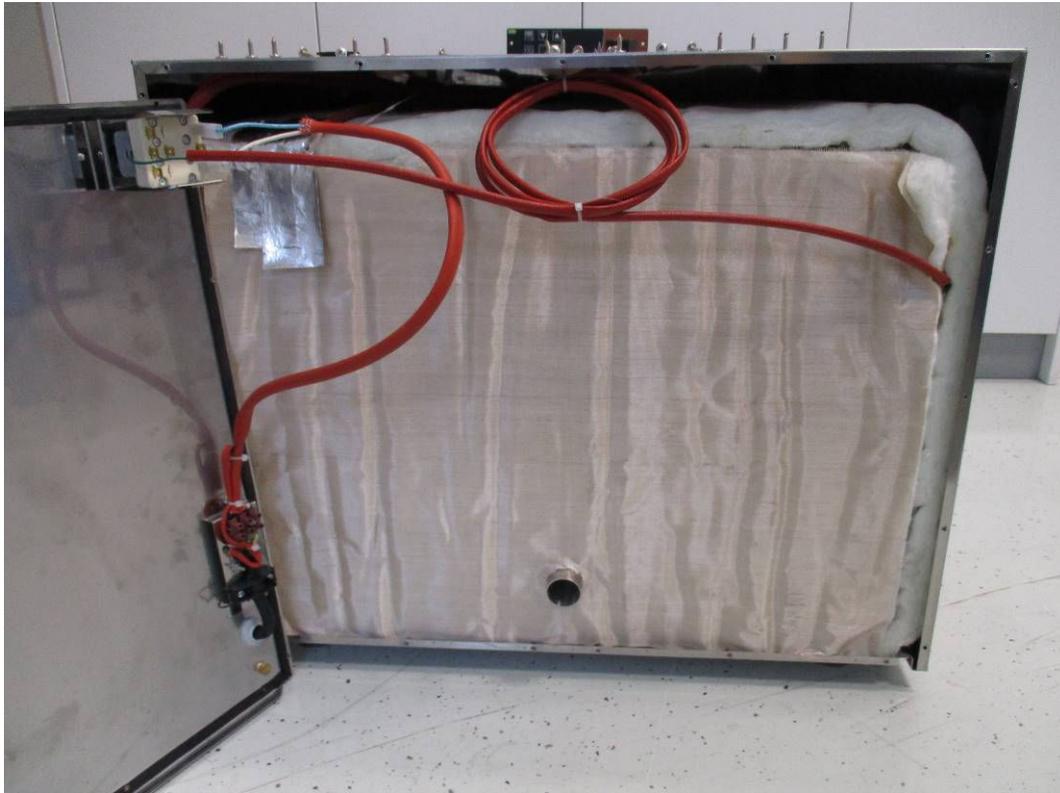


Photo documentation - ATTACHMENT 3

HSH052E

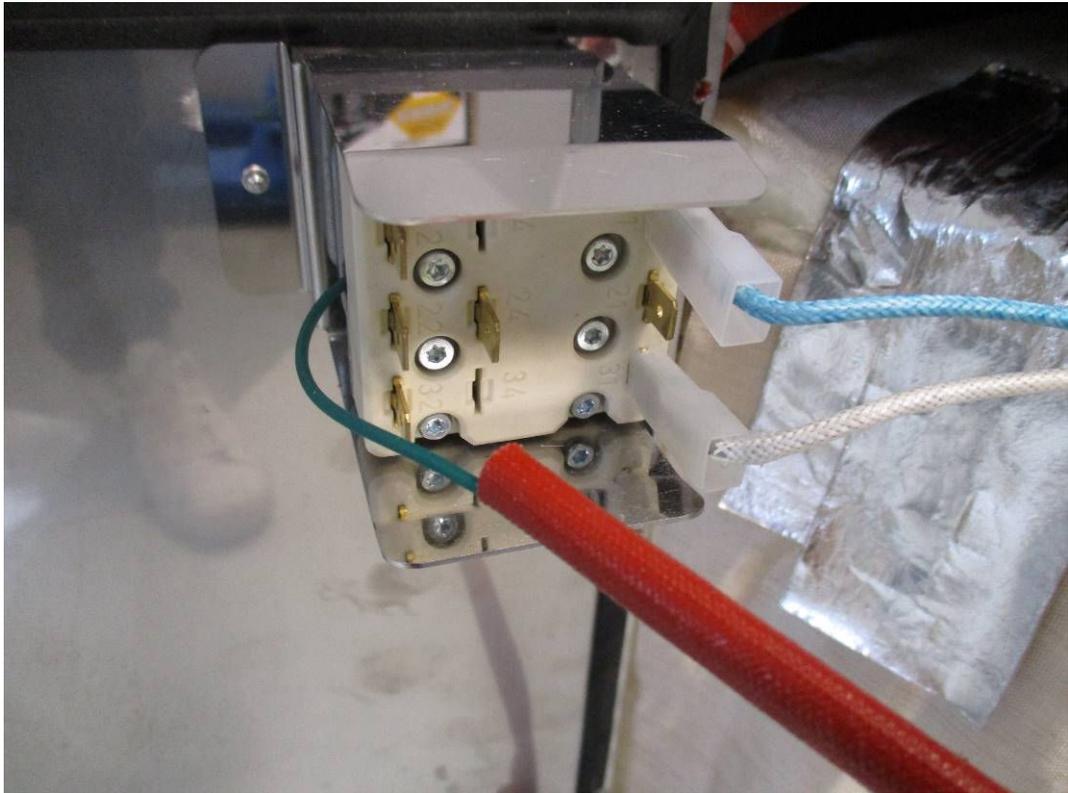


Photo documentation - ATTACHMENT 3

HHT282E



Photo documentation - ATTACHMENT 3

HHT282E



Photo documentation - ATTACHMENT 3

HHT282E



Photo documentation - ATTACHMENT 3

HHT282E

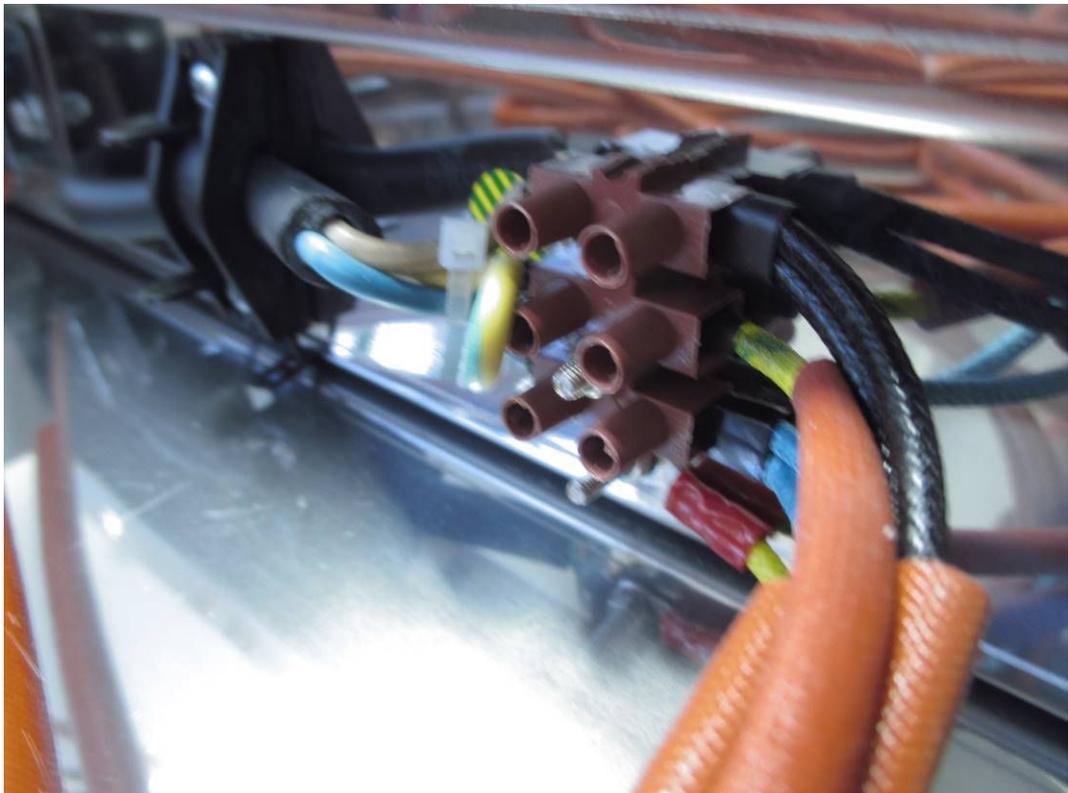


Photo documentation - ATTACHMENT 3

Control unit

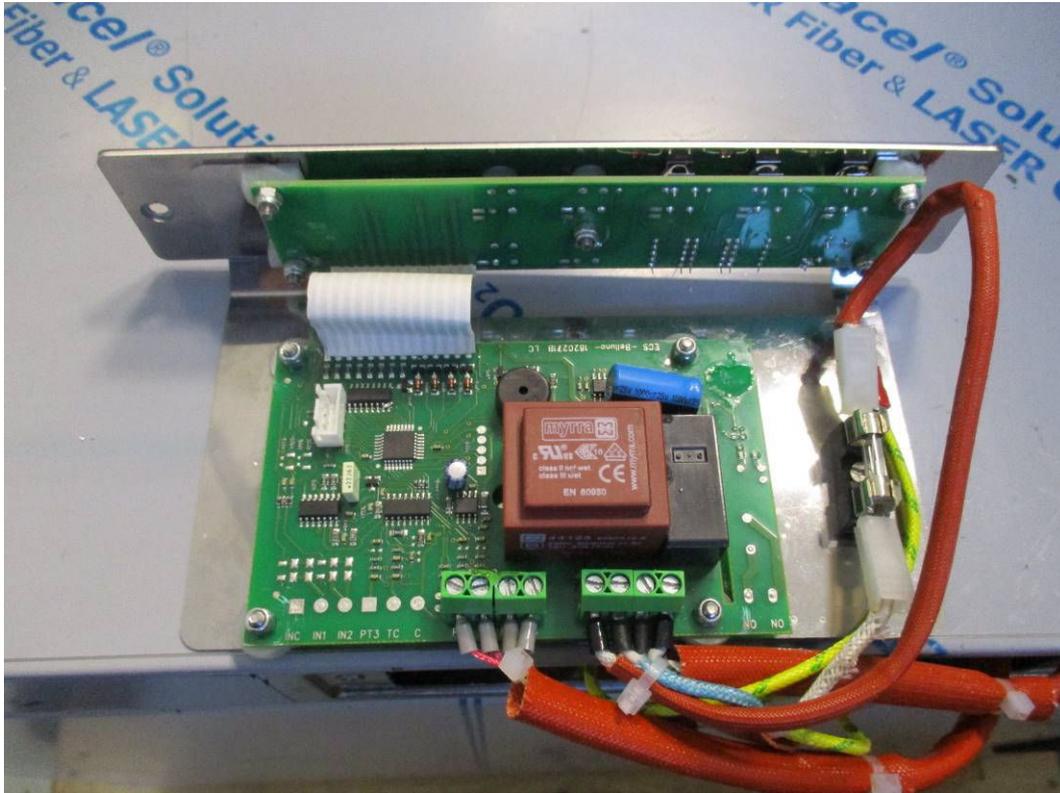


Photo documentation - ATTACHMENT 3

Control unit

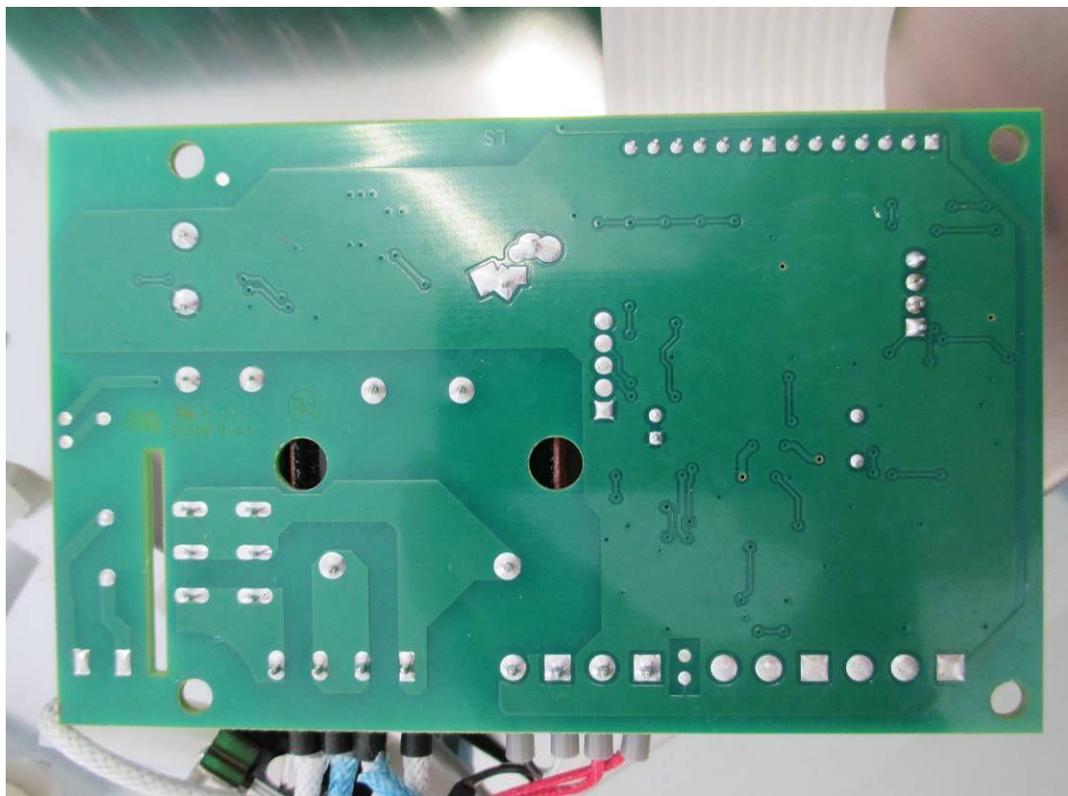


Photo documentation - ATTACHMENT 3

Control unit

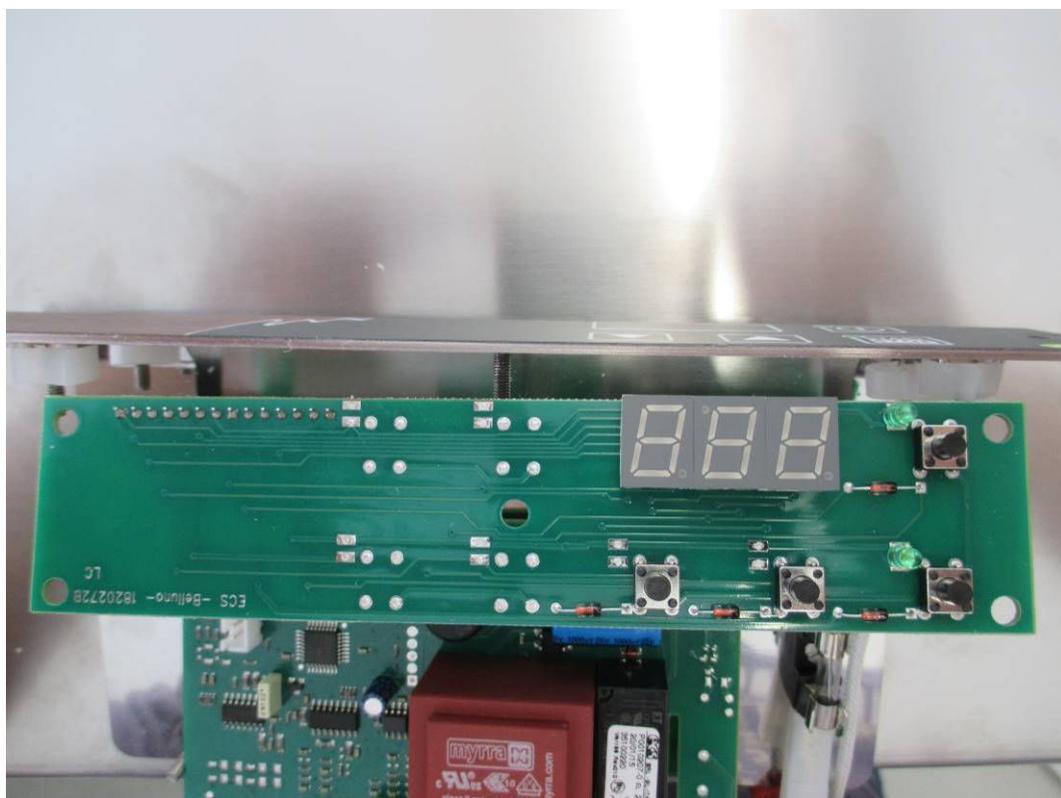
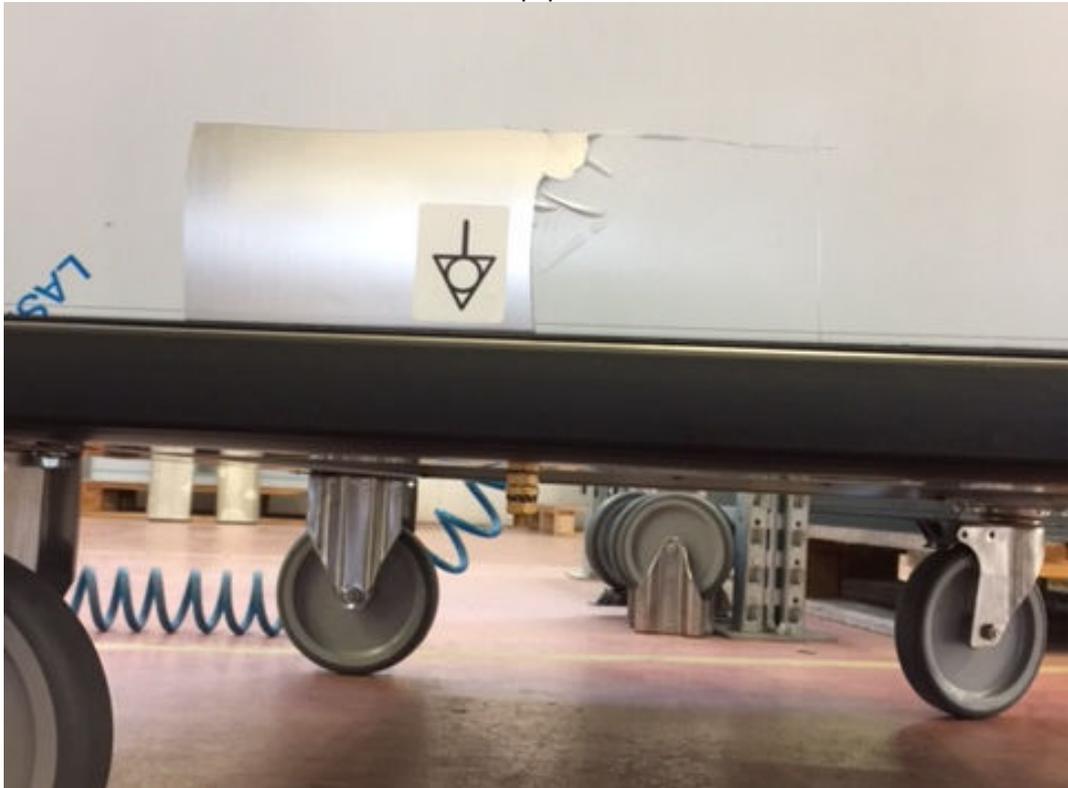


Photo documentation - ATTACHMENT 3

HHT282E
Position of the equipotential terminal



Control unit
Position of fuse label

