Test Report issued under the responsibility of:

TEST REPORT
IEC 60335-2-34
Safety of household and similar electrical appliances
Part 2: Particular requirements for motor Scroll Compressor

Report Number. ..... :	AOC250929001S
Date of issue ..... :	2025-09-29
Total number of pages ..... :	109
Name of Testing Laboratory preparing the Report ..... :	Shenzhen AOCE Electronic Technology Service Co., Ltd Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China
Applicant's name ..... :	GREEN GARDEN AND LANDSCAPING CO LTD
Address ..... :	8/F, NO.49, TAOJIN ROAD NORTH, GUANGZHOU, CHINA
Test specification:	
Standard ..... :	IEC 60335-2-34:2021 in conjunction with IEC 60335-1:2020
Test procedure ..... :	Test report
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60335_2_34G
Test Report Form(s) Originator ..... :	IMQ S.p.A.
Master TRF ..... :	Dated 2015-06

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description .....:	REFRIGERATION COMPRESSOR
Trade Mark .....:	N/A
Manufacturer.....:	GREEN GARDEN AND LANDSCAPING CO LTD 8/F, NO.49, TAOJIN ROAD NORTH, GUANGZHOU, CHINA
Model/Type reference.....:	9GRW-4
Ratings.....:	AC 380-460V, 50-60Hz

Testing procedure and testing location:			
☐	**Testing Laboratory:**	Shenzhen AOCE Electronic Technology Service Co., Ltd	
Testing location/ address ..... :		Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China	
Tested by (name + signature)..... :		WanYang Ye Technical Engineer	
Approved by (name + signature) ..... :		Robin Liu Technical Manager	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address ..... :			
Tested by (name + signature)..... :			
Approved by (name + signature) ..... :			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address ..... :			
Tested by (name + signature)..... :			
Witnessed by (name + signature) ..... :			
Approved by (name + signature) ..... :			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address ..... :			
Tested by (name + signature)..... :			
Witnessed by (name + signature) ..... :			
Approved by (name + signature) ..... :			
Supervised by (name + signature)..... :			

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

Attachment No.1: Photo document.

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
- IEC 60335-2-34:2021 - IEC 60335-1:2020	Shenzhen AOCE Electronic Technology Service Co., Ltd Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China

Summary of compliance with National Differences:

N/A

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.

REFRIGERATION COMPRESSOR
Model No.: 9GRW-4
Ratings: AC 380-460V, 50-60Hz
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Add.: 8/F, NO.49, TAOJIN ROAD NORTH, GUANGZHOU, CHINA

Made in China

Test item particulars..... :	
Classification of installation and use..... :	Built-in
Supply Connection ..... :	Intended/~~not intended~~ for direct connection of the appliance supply cord to the motor-Scroll Compressor terminals
Application category ..... :	~~LBP / MBP /~~ HBP
Cooling..... :	~~static / oil /~~ air
Refrigerant identification ..... :	
Designed pressure..... :	
Protection system (1), if present ..... :	Thermal motor protector ~~/ Protective electronic circuit~~
Protection system (2) ..... :	Self-resetting~~/ Non-self-resetting~~
Control system (starting control functions devices) .. :	~~relay / PTC /~~ other
Control system (cooling capacity control functions) . :	Yes /~~ No~~
Electronic circuit ..... :	Yes /~~ No~~
Start capacitor ..... :	Yes /~~ No~~
Run capacitor..... :	~~Yes~~ / No
Fixed speed..... :	~~Yes~~ / No
Variable speed ..... :	Yes /~~ No~~

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 .....:	2025-09-19
Date (s) of performance of tests .....:	2025-09-19 – 2025-09-29

General remarks:

The tested sample(s) and the sample information are provided by the client.

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.
Note: EN Group Differences together with National Differences and Special National Conditions, if any, are in the Appendix to the main body of this TRF.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.
Note: clauses marked '*' not included in CNAS scope.

The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.

When determining for test conclusion, measurement uncertainty of tests has been considered.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	GREEN GARDEN AND LANDSCAPING CO LTD 8/F, NO.49, TAOJIN ROAD NORTH, GUANGZHOU, CHINA
General product information: /	

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
3	**DEFINITIONS**		—
3.107	For the purpose of this standard, the following classifications of application categories are made relative to the evaporation temperature range:		—
	- Low back pressure (LBP): denotes an evaporation temperature range from equal to or less than -35 °C - 15°C (IEC 60335-2-34)		N/A
	- Medium back pressure (MBP): denotes an evaporation temperature range from -20 °C to 0 °C (IEC 60335-2-34)		N/A
	- High back pressure (HBP): denotes an evaporation temperature range from -5°C to equal to or greater than +15 °C (IEC 60335-2-34)		P
5	**GENERAL CONDITIONS FOR THE TESTS**		—
	Tests performed according to clause 5, e.g. nature of supply, sequence of testing, etc.		P
5.2	At least one additional sample is required for the tests of clause 19, however further samples may also be provided or are needed (IEC 60335-2-34)		P
	For the test of 22.7, two samples of the housing are required (IEC 60335-2-34)		P
5.7	Tests are carried out in an ambient temperature of 20 °C ± 5 °C (IEC 60335-2-34)		P
5.8.2	Motor-Scroll Compressors with self-resetting motor-Scroll Compressor protection systems, and designed for more than one rated voltage, are subjected to the tests of 19.101 and 19.103 at the highest voltage (IEC 60335-2-34)		P
5.10	For the tests of clause 19, the additional sample or samples shall be identical in all respects to the test sample, charged with oil, if necessary, and vapour refrigerant. The rotor shall have been locked by the manufacturer (IEC 60335-2-34)		P
	The manufacturer or responsible agent shall provide the following information for each type of motor-Scroll Compressor submitted for the tests: (IEC 60335-2-34)		P
	type (synthetic or cellulosic) of winding insulation;		P
	refrigerant identification:		P
	a) for a single component refrigerant, by at least one of the following:		P
	- chemical name		N/A
	- chemical formula		N/A
	- refrigerant number		P

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	b) for a blended refrigerant, at least one of the following:		N/A
	- chemical name and nominal proportion of each of the components		N/A
	- chemical formula and nominal proportion of each of the components		N/A
	- refrigerant number and nominal proportion of each of the components		N/A
	- refrigerant number of the refrigerant blend		N/A
	types and quantity of oil to be used if the test samples which use oil are not already charged		N/A
	application category or application categories for motor-Scroll Compressors classified as being tested with Annex AA		N/A
	whether a supply cord can be connected directly to terminals on the motor-Scroll Compressor		N/A
	for motor-Scroll Compressors intended for appliances with a transcritical refrigeration system, the test pressure for the high pressure side if higher than the minimum test pressure		P
5.11	For motor-Scroll Compressors which can be used in appliances where the supply cord is connected directly to terminals on the motor-Scroll Compressor, the test sample shall be provided with a supply cord (IEC 60335-2-34)		P
5.101	Motor-Scroll Compressors, including those with crank-case heaters, are tested as motor-operated appliances (IEC 60335-2-34)		P
5.102	With regard to 6.104, protective devices other than the declared device under test shall be disabled during the tests of Annex AA and Clause 19. If multiple protective devices are declared, each shall be tested independently (IEC 60335-2-34)		P
5.103	For cascade systems comprising two or more motor-Scroll Compressor circuits, each motorScroll Compressor circuit is tested separately in the end product. IEC 60335-2-34 is not applicable for the system but each motor-Scroll Compressor can be tested according to this standard (IEC 60335-2-34/A1)		N/A
6	**CLASSIFICATION**		—
6.1	Protection against electric shock: Class 0, 0I, I, II, III ....:	Class I	P

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
6.2	Protection against harmful ingress of water		N/A
6.101	Motor-Scroll Compressors are classified: (IEC 60335-2-34)		P
	if not incorporating an electronic circuit, as being tested with Annex AA or without Annex AA		P
	if incorporating an electronic circuit, as being tested with Annex A		N/A
6.102	Motor-Scroll Compressors are classified: (IEC 60335-2-34)		P
	intended for direct connection of the appliance supply cord to the motor-Scroll Compressor terminals, or		P
	not intended for direct connection of the appliance supply cord to the motor-Scroll Compressor terminals		N/A
6.103	Motor-Scroll Compressors are classified: IEC 60335-2-34)		P
	as being protected by protective electronic circuit, or		N/A
	not being protected by protective electronic circuit		P
	Protected electronic circuit may also be provided in the end product		N/A
6.104	The motor-Scroll Compressor manufacturer shall declare: (IEC 60335-2-34)		P
	the means of motor protection		P
	thermal motor protector		P
	impedance protection		N/A
	protective electronic circuit, or		N/A
	a combination of the above		N/A
6.105	Motor-Scroll Compressors using refrigerant R744 shall be classified as used in a transcritical refrigeration system or in a non-transcritical refrigeration system (IEC60335-2-34/A1)		N/A
7	**MARKING AND INSTRUCTIONS**		—
7.1	Rated voltage or voltage range (V) ....:	See Copy of marking plate	P
	Symbol for nature of supply, or..... .....:	See Copy of marking plate	P
	Rated frequency (Hz)..... .....:	See Copy of marking plate	P
	The rated power input or rated current need not be marked (IEC 60335-2-34)		N/A
	Manufacturer's or responsible vendor's name, trademark or identification mark..... .....:	See Copy of marking plate	P
	Model or type reference..... .....:	See Copy of marking plate	P
	Symbol IEC 60417-5172, for class II appliances		N/A
	IP number, other than IPX0 ....:		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	Symbol IEC 60417-5180, for class III appliances, unless		N/A
	the appliance is operated by batteries only		N/A
	Symbol IEC 60417-5018, for class II and class III appliances incorporating a functional earth (IEC 60335-1/A1)		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		P
	Motor-Scroll Compressors suitable for use with a flammable refrigerant shall be marked with symbol ISO 7010 W021.(IEC60335-2-34/A1)		P
7.2	Warning for stationary appliances for 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		P
	Different rated values marked with the values separated by an oblique stroke		N/A
7.4	Appliances adjustable for different rated voltages or rated frequencies, the voltage or the frequency setting is clearly discernible (IEC60335-1/A1)		N/A
	Requirement met if frequent changes are not required and the rated voltage or rated frequency to which the appliance is to be adjusted is determined from a wiring diagram (IEC60335-1/A1)		N/A
7.5	Not Applicable (IEC 60335-2-34)		—
7.6	Correct symbols used		P
	Symbol for nature of supply placed next to rated voltage		P
	Symbol for class II appliances placed unlikely to be confused with other marking		N/A
	Units of physical quantities and their symbols according to international standardized system		P
7.7	Not Applicable (IEC 60335-2-34)		—
7.8	Except for type Z attachment, terminals for connection to the supply mains indicated as follows:		—
	- marking of terminals exclusively for the neutral conductor (letter N)		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	- marking of protective earthing terminals (symbol IEC 60417-5019)		P
	- marking of functional earthing terminals (symbol IEC 60417-5018) (IEC60335-1/A1)		N/A
	- marking not placed on removable parts		P
7.9	Marking or placing of switches which may cause a hazard		N/A
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means ....:		P
	This applies also to switches which are part of a control		N/A
	If figures are used, the off position indicated by the figure 0		P
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		P
7.11	Indication for direction of adjustment of controls		
7.12	Not Applicable (IEC 60335-2-34)		—
7.12.1	Sufficient details for installation supplied		N/A
	For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated		N/A
	If different rated voltages or different rated frequencies are marked, the instructions state what action to be taken to adjust the appliance (IEC60335-1/A1)		N/A
	Special precautions for installation or user maintenance (IEC 60335-2-34)		N/A
7.13	Not Applicable (IEC 60335-2-34)		—
7.14	Marking clearly legible and durable, rubbing test as specified		P
7.15	Markings on a main part		P
	Marking clearly discernible from the outside, if necessary after removal of a cover		P
	For portable appliances, cover can be removed or opened without a tool		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	For stationary appliances, name, trademark or identification mark and model or type reference visible after installation		N/A
	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		N/A
	The symbol IEC 60417-5018 placed next to the symbol IEC 60417-5172 or IEC 60417-5180 (IEC60335-1/A1)		P
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		P
7.101	Refrigerants that can be used with the motor-Scroll Compressor shall be listed in the instructions (IEC60335-2-34/A1).		P
8	**PROTECTION AGAINST ACCESS TO LIVE PARTS**		—
8.1	Adequate protection against accidental contact with live parts		P
8.1.1	Requirement applies for all positions, detachable parts removed		N/A
	Lamps behind a detachable cover not removed, if conditions met		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 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
8.1.4	Accessible part not considered live if:		—
	- 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		N/A
	- or separated from live parts by 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 μF		N/A
	- for peak values over 450 V up to and including 15 kV, discharge not exceeding 45 μC		N/A
	- for peak values over 15kV, the energy in the discharge not exceeding 350 mJ		N/A
8.1.5	Live parts protected at least by basic insulation before installation or assembly:		—
	- built-in appliances		P
	- 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		N/A
	Only possible to touch parts separated from live parts by double or reinforced insulation		N/A
9	**STARTING OF MOTOR-OPERATED APPLIANCES**		—
	Not Applicable (IEC 60335-2-34)		—
10	**POWER INPUT AND CURRENT**		—
	Not Applicable (IEC 60335-2-34)		—
11	**HEATING**		—
	Not Applicable (IEC 60335-2-34)		N/A
	For motors-Scroll Compressors, this clause can be covered by Annex AA (IEC 60335-2-34)		P

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
13	**LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE**		—
13.3	Electric strength test of insulation according to table 4 (test 19.104) (IEC 60335-2-34)	(see appended table)	P
	No breakdown during the test		P
14	**TRANSIENT OVERVOLTAGES**		—
	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**		—
15.1	Enclosure provides the degree of moisture protection according to classification of the appliance		N/A
	Compliance checked as specified in 15.1.1, taking into account 15.1.2, followed by the electric strength test of 16.3		N/A
	No trace of water on insulation which can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A
15.1.1	Appliances, other than IPX0, subjected to tests as specified in IEC 60529 .....:		N/A
	Water valves containing live parts in external hoses for connection of an appliance to the water mains tested as specified for IPX7 appliances		N/A
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test		N/A
	Built-in appliances installed according to the instructions		N/A
	Appliances placed or used on the floor or table placed on a horizontal unperforated support		N/A
	Appliances normally fixed to a wall and appliances with pins for insertion into socket-outlets are mounted on a wooden board		N/A
	For IPX3 appliances, the base of wall mounted appliances is placed at the same level as the pivot axis of the oscillating tube		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	For IPX4 appliances, the horizontal centre line of the appliance is aligned with the pivot axis of the oscillating tube, and		N/A
	for appliances normally used on the floor or table, the movement is limited to two times 90° for a period of 5 min, the support being placed at the level of the pivot axis of the oscillating tube		N/A
	Wall-mounted appliances, take into account the distance to the floor stated in the instructions		N/A
	Appliances normally fixed to a ceiling are mounted underneath a horizontal unperforated support, the pivot axis of the oscillating tube located at the level of the underside of the support, and		N/A
	for IPX4 appliances, the movement of the tube is limited to two times 90° from the vertical for a period of 5 min		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Detachable parts subjected to the relevant treatment with the main part		N/A
	However, if a part has to be removed for user maintenance and a tool is needed, this part is not removed		N/A
15.2	Spillage of liquid does not affect the electrical insulation		N/A
	Spillage solution comprising water containing approximately 1 % NaCl and 0,6 % rinsing agent (IEC60335-1/A1)		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Appliances incorporating an appliance inlet tested with or without an connector, whichever is most unfavourable		N/A
	Detachable parts are removed		N/A
	Overfilling test with additional amount of the solution, over a period of 1 min (l) .....:		N/A
	The appliance withstands the electric strength test of 16.3		N/A
	No trace of water on insulation that can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
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		P
	Humidity test for 48 h in a humidity cabinet		P
	Reassembly of those parts that may have been removed		P
	The appliance withstands the tests of clause 16		P
16	**LEAKAGE CURRENT AND ELECTRIC STRENGTH**		—
16.1	Leakage current not excessive and electric strength adequate		P
	Protective impedance disconnected from live parts before carrying out the tests		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).....:		P
	Three-phase appliances: test voltage 1.06 times rated voltage divided by √3 (V) .....:		N/A
	Leakage current measurements.....:	(see appended table)	P
	Limit values doubled if:		—
	- all controls have an off position in all poles, or		P
	- 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
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)	N/A
	No breakdown during the tests		P
17	**OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS**		—

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use.....:	(see appended table)	N/A
	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) .....:		N/A
	Basic insulation is not short-circuited		N/A
	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		N/A
	Temperature of the winding not exceeding the value specified in table 8		N/A
	However, limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1		N/A
18	**ENDURANCE**		—
	Not Applicable (IEC 60335-2-34)		—
19	**ABNORMAL OPERATION**		—
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
	Motor-Scroll Compressor are submitted to the tests of 19.14, 19.15, 19.101, 19.102, 19.103, and, (IEC 60335-2-34)		P
	additionally, if so required by the classification of 6.101, to the tests specified in annex AA (IEC 60335-2-34)		N/A
	Motor-Scroll Compressors incorporating electronic circuits are also subjected to the tests of 19.11 and 19.12 (IEC 60335-2-34)		P
	Only one abnormal condition is simulated each time (IEC 60335-2-34)		P
	Compliance with the tests of 19.11 and 19.12 is checked as described in 19.13 (IEC 60335-2-34)		P
	Compliance with the tests of 19.101, 19.102, 19.103 is checked as described in 19.104 (IEC 60335-2-34)		P
	Compliance with the tests of Annex AA is checked as described in Annex AA (IEC 60335-2-34)		P
19.2 to 19.10	Not Applicable (IEC 60335-2-34)		—

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless		P
	they comply with the conditions specified in 19.11.1		P
	Appliances incorporating an electronic circuit that relies upon a programmable component to function correctly, subjected to the test of 19.11.4.8, unless		N/A
	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		N/A
	During and after each test the following is checked:		—
	- 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		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:		—
	- the base material of the printed circuit board withstands the test of Annex E		N/A
	- any loosened conductor does not reduce clearance or creepage distances between live parts and accessible metal parts below the values specified in clause 29		N/A
19.11.1	Fault conditions a) to g) in 19.11.2 are not applied to circuits or parts of circuits meeting both of the following conditions:		—
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified		N/A
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction of other parts of the appliance does not rely on the correct functioning of the electronic circuit		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
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:		—
	a) short circuit of functional insulation if clearances or creepage distances are less than the values specified in clause 29		N/A
	b) open circuit at the terminals of any component		N/A
	c) short circuit of capacitors, unless		N/A
	they comply with IEC 60384-14		N/A
	d) short circuit of any two terminals of an electronic component, other than integrated circuits		N/A
	This fault condition is not applied between the two circuits of an optocoupler		N/A
	e) failure of triacs in the diode mode		N/A
	f) failure of microprocessors and integrated circuits		N/A
	g) failure of an electronic power switching device		N/A
	Each low power circuit is short-circuited by connecting the low-power point to the pole of the supply source from which the measurements were made		N/A
	If a motor-Scroll Compressor incorporates an electronic circuit, for simulation of fault condition it is connected to the substitute refrigeration circuit of figure AA.1 and operated under the conditions given in Clause AA.5 (IEC 60335-2-34)		P
	The condensing temperature applied shall be 5 K lower than that which caused (IEC 60335-2-34)		N/A
	the motor-Scroll Compressor protective electronic circuit to operate or (IEC 60335-2-34)		P
	the motor-Scroll Compressor to stall during the test of Clause AA.5 (IEC 60335-2-34)		N/A
19.11.3	If the motor-Scroll Compressor is classified as being protected by a protective electronic circuit and if this protective electronic circuit operates to ensure compliance with Clause 19 and Annex AA, the tests of 19.101, 19.102, 19.103 and Annex AA are repeated with a single fault simulated, as indicated in a) to g) of 19.11.2 (IEC 60335-2-34)		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	However, the test of Annex AA is not repeated if during the test of Annex AA, for motor-Scroll Compressors classified as being tested with Annex AA, the motor-Scroll Compressor protection system did not operate (IEC 60335-2-34)		P
	The test of Annex AA is also not repeated on motor-Scroll Compressors that are classified as being tested without Annex AA (IEC 60335-2-34)		P
19.11.4	Appliances having a device with an off position obtained by electronic disconnection, or		N/A
	a device that can be placed in the stand-by mode,		N/A
	subjected to the tests of 19.11.4.1 to 19.11.4.7, the device being set in the off position or in the stand-by mode		N/A
	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, the tests being carried out after the protective electronic circuit has operated, except that		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
	If the tests of this sub-clause have to be carried out, they shall be carried out in the end product (IEC 60335-2-34)		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,		N/A
	An open circuit test voltage of 2 kV is applicable for the line-to-line coupling mode, a generator having a source impedance of 2Ω being used(IEC60335-1/A1)		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	An open circuit test voltage of 4 kV is applicable for the line-to-earth coupling a generator having a source impedance of 12Ω being used(IEC60335-1/A1)		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
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		N/A
	The appliance continues to operate normally, or		N/A
	requires a manual operation to restart		N/A
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 60127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A).....:		N/A
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		N/A
	Temperature rises not exceeding the values shown in table 9 .....:	(see appended table)	N/A
	Compliance with clause 8 not impaired		N/A
	If the appliance can still be operated it complies with 20.2		N/A
	If the motor-Scroll Compressor is intended to use flammable refrigerants, and (IEC 60335-2-34)		N/A
	if during the tests of 19.11.2 and 19.11.3 any electrical component produced sparks or arcs, (IEC 60335-2-34)		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	this shall be reported unless (IEC 60335-2-34)		N/A
	the component was an intentionally weak part or (IEC 60335-2-34)		N/A
	a non-self-resetting protective device (IEC 60335-2-34)		N/A
	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:		—
	- basic insulation (V).....:		P
	- supplementary insulation (V).....:		N/A
	- reinforced insulation (V).....:		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		N/A
	The appliance does not undergo a dangerous malfunction, and		P
	no failure of protective electronic circuits, if the appliance is still operable		P
	Appliances tested with an electronic switch in the off position, or in the stand-by mode:		—
	- do not become operational, or		
	- 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:		—
	- the lid or door does not move automatically to an open position when the interlock is released, and		N/A
	- the appliance does not start after the cycle in which the interlock was released		N/A
19.14	Motor-Scroll Compressors are operated under the conditions of Clause AA.1, any contactor or relay contact that operates under the conditions of Clause AA.1 is short-circuited (IEC 60335-2-34)		P
	If a relay or contactor with more than one contact is used, all contacts are short-circuited at the same time (IEC 60335-2-34)		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	Any relay or contactor which operates only to ensure the motor-Scroll Compressors is energized for normal use and that does not operate in normal use is not short-circuited (IEC 60335-2-34)		N/A
	If more than one relay or contactor operates in Clause AA.1, each such relay or contactor is short-circuited in turn (IEC 60335-2-34)		N/A
	For motor-Scroll Compressors that use alternate start capacitors, the test shall be carried out using each alternate start capacitor in turn (IEC 60335-2-34)		N/A
	The test is only performed on motor-Scroll Compressors classified as being tested with Annex AA (IEC 60335-2-34)		P
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		N/A
19.101	The motor-Scroll Compressor and motor-Scroll Compressor protection system , together with all their associated components which operate under locked-rotor conditions, are connected in the circuit showed in Figure 101 and supplied with rated voltage as specified in 5.8.2 (IEC 60335-2-34)		P
	For motor-Scroll Compressors with a non-self-resetting thermal motor-Scroll Compressor protection system, the motor-Scroll Compressor is operated until a sufficient number of operations have been made to ensure that continuous automatic recycling does not occur (IEC 60335-2-34)		N/A
	The number of operations should, however, not be less than three and should be performed as rapidly as possible with a minimum delay of 6 s (IEC 60335-2-34)		N/A
	A longer off time is permitted if a delay feature longer than 6 s is part of the protection system or control system (IEC 60335-2-34)		N/A
	All electromechanical components of the protection system shall be tested individually for 50 operations in total with the motor-Scroll Compressor or with a load corresponding to the actual motor-Scroll Compressor or a higher load (IEC 60335-2-34)		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	For motor-Scroll Compressors with a self-resetting motor-Scroll Compressor protection system, the motor-Scroll Compressor protection system is allowed to cycle continuously for a period of 15 days or for at least 2000 cycles, whichever is the longer (IEC 60335-2-34)		N/A
	Motor-Scroll Compressors without a motor-Scroll Compressor protection system and only protected by the impedance of the windings, are connected in the circuit show in Figure 101 and supplied with rated voltage (IEC 60335-2-34)		N/A
	If a motor-Scroll Compressor is designed for more than one rated voltage it is tested at the highest voltage (IEC 60335-2-34)		N/A
	After the first 72 h of the locked-rotor test, the motor-Scroll Compressor is subjected to the electric strength test as specified in 16.3 (IEC 60335-2-34)		P
	For motor-Scroll Compressors with a self-resetting motor-Scroll Compressor protection system, if 2000 cycles of the protection system have not been performed by the end of the 15-day period, the test may be terminated provided the following conditions are met: (IEC 60335-2-34)		N/A
	- the housing temperature is recorded on the 12th and 15th days. If, during this three-day period, the temperature has not increased by more than 5 K, the test can be terminated		N/A
	- if the temperature has increased by more than 5 K, the test is to be continued until the temperature has not increased by more than 5 K over a period of three consecutive days or for at least 2000 cycles of the motor-Scroll Compressor protection system, whichever occurs first		N/A
	- the components in the circuit comply with Clause 24 using at least the current and a power factor not exceeding that measured during the test		N/A
	Motor-Scroll Compressors with a self-resetting motor-Scroll Compressor protection system and designed for more than one rated voltage are also tested at the lower voltage for 3h (IEC 60335-2-34)		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	For motor-Scroll Compressors where the design of the protection system or control system is such that the windings are de-energized permanently, the motor-Scroll Compressor and motor-Scroll Compressor protection system (if any), together with all their associated components which operate under locked-rotor conditions, are re-energized (IEC 60335-2-34)		P
	This procedure is repeated as rapidly as possible until 10 operations have been performed, with a minimum off time of 6 s (IEC 60335-2-34)		N/A
	A longer off time is permitted if a delay feature longer than 6 s is part of the protection system or control system (IEC 60335-2-34)		N/A
	If the motor-Scroll Compressor is designed for more than one rated voltage, the test is performed at all rated voltages (IEC 60335-2-34)		N/A
	If the motor-Scroll Compressor is designed a voltage range, the test is performed at the upper and lower voltage limit (IEC 60335-2-34)		P
	Motor-Scroll Compressors without a motor-Scroll Compressor protection system are left energized as described above for 15 days (IEC 60335-2-34)		N/A
	The housing temperature is recorded on the 12th and 15th days. If during these three-days, the temperature has not increased by more than 5 K, the test can be terminated (IEC 60335-2-34)		N/A
19.102	The test of 19.101 is repeated for one operation of non-self-resetting motor-Scroll Compressor protection system or 3 h minimum for self-resetting motor-Scroll Compressor protection system under the following conditions: (IEC 60335-2-34)		N/A
	- with start and run capacitors open-circuited one at a time		N/A
	- with start and run capacitors short-circuited one at a time, unless they have been tested and shown to comply with the requirements for protection class P2 capacitors of IEC 60252-1		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
19.103	Three-phase motor-Scroll Compressors and the motor-Scroll Compressor protection systems, together with all their associated components which operate under locked-rotor conditions, are connected in a circuit similar to that shown in Figure 101, the circuit being appropriately modified for three-phase motor-Scroll Compressors, and supplied with rated voltage but with one phase to the motor-Scroll Compressor disconnected during the following periods: (IEC 60335-2-34)		N/A
	- for motor-Scroll Compressors with a self-resetting motor-Scroll Compressor protection system, for 3 h		N/A
	- for motor-Scroll Compressors with a non-self-resetting motor-Scroll Compressor protection system, until the first operation of the motor-Scroll Compressor protection system		N/A
	- for motor-Scroll Compressors without a motor-Scroll Compressor protection system for 3 h		N/A
19.104	During the tests of 19.101, 19.102 and 19.103: (IEC 60335-2-34)		P
	- the motor-Scroll Compressor system shall be able to operate		P
	- the temperature of the housing and the temperature of the accessible surfaces of associated components shall not exceed 150 °C		N/A
	- the residual current device shown in Figure 101 shall not operate		N/A
	- the motor-Scroll Compressor, its associated starting relay and motor-Scroll Compressor protection system shall not emit flames, sparks or molten metal		N/A
	At the conclusion of the tests of 19.101, 19.103 and the test of 19.102 that is carried out with start and run capacitors open-circuited: (IEC 60335-2-34)		N/A
	- enclosures shall not have deformed to such an extent as to impair compliance with Clause 29		N/A
	- the motor-Scroll Compressor protection system shall be able to operate		P
	- the motor-Scroll Compressor shall withstand:		P
	- the leakage current test as specified in 16.2, the test voltage being applied between the windings and the housing		P

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	- the electric strength test of 13.3 of Part 1		P
	If the test of 19.102 is carried out with start and run capacitors short-circuited one at a time, then at the conclusion of this test: (IEC 60335-2-34)		N/A
	- enclosures shall not have deformed to such an extent as to impair compliance with Clause 29		P
	- the motor-Scroll Compressor shall withstand:		P
	- the leakage current test as specified in 16.2, the test voltage being applied between the windings and the housing		P
	- the electric strength test of 13.3 of Part 1		P
	- the motor-Scroll Compressor protection system shall be able to operate or it shall remain permanently open-circuited		N/A
	If the motor-Scroll Compressor protection system remains permanently open-circuited, the test of 19.102 with start and run capacitors short-circuited shall be operated on three additional samples and all three additional samples shall remain permanently open-circuited at the conclusion of the test (IEC 60335-2-34)		N/A
19.105	Three-phase motor-Scroll Compressors shall be adequately protected against primary single-phase failure (IEC 60335-2-34)		N/A
	The motor-Scroll Compressor is supplied from a star-delta or delta-star connected transformer with a line voltage ratio such that the output voltage is equal to the rated voltage of the motor-Scroll Compressor. The transformer is supplied with an input voltage such that the output voltage is equal to the rated voltage of the motor-Scroll Compressor (IEC 60335-2-34)		N/A
	One phase of the supply to the input windings of the transformer is then disconnected so that maximum current flows in an unprotected winding of the motor-Scroll Compressor (IEC 60335-2-34)		N/A
	The test is continued for the following periods: (IEC 60335-2-34)		N/A
	- 24h, for motor-Scroll Compressors with a self-resetting motor-Scroll Compressor protection system		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	- until the first operation of the protective system, for motor-Scroll Compressors with a non-self-resetting motor-Scroll Compressor protection system		P
	Motor-Scroll Compressors designed for more than one rated voltage are tested at each voltage (IEC 60335-2-34)		N/A
	However, motor-Scroll Compressors with a self-resetting motor-Scroll Compressor protection system and designed for more than one rated voltage are tested at the highest voltage for 24 h, and at the lowest voltage for 3 h (IEC 60335-2-34)		P
	During the test: (IEC 60335-2-34)		P
	- the temperature of the housing and the temperature of the accessible surfaces of associated components shall not exceed 150°C		P
	- the motor-Scroll Compressor windings shall not be damaged		P
	- the motor-Scroll Compressor and motor-Scroll Compressor protection system shall not emit flames, sparks or molten metal		P
	Immediately following this test, the motor-Scroll Compressor shall withstand the electric strength test of 16.3		P
	A three-phase motor-Scroll Compressor is considered to meet the requirement for primary single-phase failure protection without tests other than those specified in 19.101, 19.102 and 19.103, if it is protected by one of the following devices: (IEC 60335-2-34)		N/A
	- an overcurrent device, protecting each phase of its supply and which is provided with the motor-Scroll Compressor or the rating of which is specified by the motor-Scroll Compressor manufacturer		N/A
	- a motor-Scroll Compressor protection system, responsive to motor current, installed symmetrically at the centre point of star-connected motor-Scroll Compressor and which simultaneously opens at least two windings		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	- a motor-Scroll Compressor protection system, located in each winding of the motor-Scroll Compressor, which activates pilot duty contacts controlling the supply to the coil of the motor-Scroll Compressor supply contactor and which is responsive to at least one of the following:		N/A
	- motor-Scroll Compressor current		N/A
	- motor-Scroll Compressor temperature		N/A
20	**STABILITY AND MECHANICAL HAZARDS**		—
20.1	Appliances having adequate stability		N/A
	Tilting test through an angle of 10°, appliance placed on an inclined plane/horizontal support, not connected to the supply mains; appliance does not overturn		N/A
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°		N/A
	Possible heating test in overturned position; temperature rise does not exceed values shown in table 9		N/A
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury		N/A
	Protective enclosures, guards and similar parts are non-detachable, and		N/A
	have adequate mechanical strength		N/A
	Enclosures that can be opened by overriding an interlock are considered to be detachable parts		N/A
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard by unexpected closure		N/A
	Not possible to touch dangerous moving parts with the test probe described		N/A
21	**MECHANICAL STRENGTH**		—
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

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	compliance with 8.1, 15.1 and clause 29 not impaired		P
	If doubt, supplementary or reinforced insulation subjected to the electric strength test of 16.3		N/A
	If necessary, repetition of groups of three blows on a new sample		N/A
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements		N/A
	Test not applicable if the thickness of supplementary insulation is at least 1 mm and reinforced insulation at least 2 mm		N/A
	The insulation is tested as specified, and does withstand the electric strength test of 16.3		N/A
22	**CONSTRUCTION**		—
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled		P
22.2	Not Applicable (IEC 60335-2-34)		—
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	Not Applicable (IEC 60335-2-34)		—
22.6	Electrical insulation not affected by condensing water or leaking liquid		N/A
	Electrical insulation of Class II appliances not affected if a hose ruptures or seal leaks		N/A
22.7	Housing shall withstand the pressures expected in normal use (IEC 60335-2-34)		P

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance is checked by the following tests (IEC 60335-2-34)		—
	A housing which is exposed to high side pressure shall be subjected to a pressure equal to: (IEC 60335-2-34)		—
	For non transcritical refrigeration systems, a minimum of 3,5 times the saturated vapour pressure of the refrigerant at 70 °C, rounded up to the next 0,5 MPa (5 bar)		N/A
	for R-744 non-transcritical refrigeration systems, a minimum of 3,5 times the saturated vapour pressure of the refrigerant at 27 °C, rounded up to the next 0,5 MPa (5 bar)(IEC60335-2-34/A1).		P
	Refrigerant .....:		P
	Pressure test (Mpa / bar) .....:		P
	For transcritical refrigeration systems, 3 times the design pressure but not less than the minimum test pressure as required in Table 101		N/A
	if the motor-Scroll Compressor employs a bypass valve, a minimum of 3 times the maximum high side pressure, but not less than the minimum test pressure as required in Table 101.(iec60335-2-34/A1)		N/A
	Refrigerant .....:		N/A
	Pressure test (MPa / bar) .....:		N/A
	The test values for some refrigerants are given in Table 101. The values may, however, not be high enough for some applications (IEC60335-2-34/A1)		N/A
	A housing which is exposed only to low side pressure shall, for both subcritical and transcritical applications, be subjected to a pressure equal to 5 times the saturated vapour pressure of the refrigerant at 20 °C or equal to 2,5 MPa (25 bar) whichever is higher, rounded up to the next 0,2 MPa (2 bar) (IEC 60335-2-34)		N/A
	A housing which is exposed only to low side pressure in R-744 non-transcritical refrigeration systems shall be subjected to a pressure equal to a minimum of 5 times the saturated vapor pressure of the refrigerant at − 6,5 °C or equal to 13,5 MPa (135 bar), whichever is higher, rounded up to the next 0,2 MPa (2 bar).(IEC60335-2-34/A1)		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	A housing which is exposed only to low side pressure in transcritical refrigeration systems shall be subjected to a pressure equal to a minimum of 5 times the design pressure but not less than the minimum test pressure as required by Table 102. (IEC60335-2-34/A1)		N/A
	For a motor-Scroll Compressor employing a bypass valve, the housing which is exposed only to low side pressure shall be subjected to a pressure equal to 3 times the maximum low side pressure, but not less than the minimum test pressure as required in Table 102. (IEC60335-2-34/A1)		N/A
	The test values for some refrigerants are given in Table 102. The values may, however, not be high enough for some applications. (IEC60335-2-34/A1)		N/A
	Refrigerant .....:		N/A
	Pressure test (MPa / bar) .....:		N/A
	For refrigerant blends, the saturated vapour pressure is taken as the pressure at the dew point temperature (IEC 60335-2-34)		N/A
	For two stage motor-Scroll Compressors with direct discharge from the second stage, the housing is considered to be exposed to low side pressure (IEC 60335-2-34)		N/A
	For two stage motor-Scroll Compressors without direct discharge from the second stage, the housing is considered to be exposed to high side pressure (IEC 60335-2-34)		N/A
	The test shall be carried out on two samples (IEC 60335-2-34)		N/A
	The test samples are filled with a liquid, such as water, to exclude air and are connected in a hydraulic pump system (IEC 60335-2-34)		N/A
	The pressure is raised gradually until the required test pressure is reached and this pressure is maintained for 1 min, during which time the sample shall not leak except as indicated below (IEC 60335-2-34)		N/A
	Where gaskets are employed for sealing the housing of a semi-hermetic motor-Scroll Compressor, leakage at gaskets is not considered as a failure, provided the leakage occurs at a pressure greater than 40% of the required test pressure (IEC 60335-2-34)		N/A
	Refrigerant .....:		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	Pressure test (MPa / bar) .....:		N/A
	Pressure leakage (MPa / bar) .....:		N/A
	If a leakage occurs, the test has to be repeated on a sample specially prepared by the manufacturer to avoid leakage at the gasket (IEC 60335-2-34)		N/A
	For a semi-hermetic motor-Scroll Compressor employing a by-pass valve which relieves high side pressure into the low side at a predetermined pressure differential, the housing shall be capable of withstanding the required test pressure even though leakage occurs at gaskets (IEC 60335-2-34)		N/A
	Refrigerant .....:		N/A
	Pressure test (MPa / bar) .....:		N/A
	Leakage .....:		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
	Insulating materials used within the housing shall be compatible with the refrigerant and oil used (IEC 60335-2-34)		N/A
	For the types of refrigerant and types of oil for which the motor-Scroll Compressor is intended to be used, compliance of winding wire insulation shall be checked by the tests detailed in Annex BB or motor-Scroll Compressors that do not use oil by test 16 in IEC 60851-4 for resistance to refrigerants.(IEC60335-2-34/A1)		P
	For test 16 in IEC 60851-4, the percentage of extractable matter shall not exceed 0,5 %. The breakdown voltage shall be at least 75 % of the minimum specified value. (IEC60335-2-34/A1)		N/A
	For the types of refrigerant and types of oil for which the motor-Scroll Compressor is intended to be used, compliance of tie cords and insulation materials other than winding wire insulation shall be checked by the tests detailed in Annex CC. (IEC60335-2-34/A1)		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
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:		P
	- 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		N/A
22.11	Reliable fixing of non-detachable parts that provide the necessary degree of protection against electric shock, moisture or contact with moving parts		P
	Obvious locked position of snap-in devices used for fixing such parts		P
	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing		N/A
	Tests as described		N/A
22.12	Handles, knobs etc. fixed in a reliable manner		N/A
	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible		N/A
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied		N/A
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied		N/A
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		N/A
22.14	Not Applicable (IEC 60335-2-34)		N/A
22.15	Storage hooks and the like for flexible cords smooth and well rounded		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands and no undue wear of contacts		N/A
	Cord reel tested with 6000 operations, as specified		N/A
	Electric strength test of 16.3, voltage of 1000 V applied		N/A
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner		N/A
22.18	Current-carrying parts and other metal parts resistant to corrosion		P
22.19	Driving belts not relied upon to provide the required level of insulation, unless		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		N/A
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless		P
	impregnated		N/A
	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements		N/A
	The requirement is applicable only to external parts of the motor-Scroll Compressor (IEC 60335-2-34)		P
22.22	Appliances not containing asbestos		P
22.23	Oils containing polychlorinated biphenyl (PCB) not used		P
22.24	Bare heating elements, except in class III appliances or class III constructions that do not contain live parts, adequately supported		N/A
	In case of rupture, the heating conductor is unlikely to come in contact with accessible metal parts		N/A
22.25	Sagging heating conductors, except in class III appliances or class III constructions that do not contain live parts, cannot come into contact with accessible metal parts		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
22.26	For class III constructions the insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation		N/A
22.27	Parts connected by protective impedance separated by double or reinforced insulation		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		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		N/A
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or		N/A
	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		N/A
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		N/A
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		N/A
	Supplementary insulation of natural or synthetic rubber resistant to ageing, or arranged and dimensioned so that creepage distances are not reduced below values specified in 29.2		N/A
	Ceramic material not tightly sintered, similar materials or beads alone not used as supplementary or reinforced insulation (IEC60335-1/A1)		N/A
	Ceramic and similar porous material in which heating conductors are embedded is considered to be basic insulation, not reinforced insulation (IEC60335-1/A1)		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature		N/A
22.33	Conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts are not in direct contact with live parts, or		N/A
	unearthed metal parts separated from live parts by basic insulation only (IEC60335-1/A1)		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		N/A
	the shaft is not accessible when the part is removed		N/A
22.35	For other than class III constructions, handles, levers and knobs, held or actuated in normal use, not becoming live in the event of a failure of basic insulation		N/A
	Such parts being of metal, and their shafts or fixings are likely to become live in the event of a failure of basic insulation, are either adequately covered by insulation material or their accessible parts are separated from their shafts or fixings by supplementary insulation		N/A
	This requirement does not apply to handles, levers and knobs on stationary appliances and cordless appliances, other than those of electrical components, provided they are reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal (IEC60335-1/A1)		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	Insulating material covering metal handles, levers and knobs withstand the electric strength test of 16.3 for supplementary insulation		N/A
22.36	For appliances other than class III, handles continuously held in the hand in normal use so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless		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		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		P
	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		P
22.42	Protective impedance consisting of at least two separate components		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		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
22.44	Appliances not having an enclosure that is shaped or decorated like a toy		N/A
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		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		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		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		N/A
22.51	There is a control on the appliance manually adjusted to the setting for remote operation before the appliance can be operated in this mode		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:		—
	- continuously, or		N/A
	- automatically, or		N/A
	- remotely		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
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		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 (IEC60335-1/A1)		N/A
22.54	Button cells and batteries designated R1 not accessible without the aid of a tool, unless (IEC60335-1/A1)		N/A
	the cover of their compartment can only be opened after at least two independent movements have been applied simultaneously (IEC60335-1/A1)		N/A
22.101	Where a motor-Scroll Compressor used in a transcritical refrigeration system includes a pressure relief device in the high side or discharge piping of the motor-Scroll Compressor, there shall be no other shut off devices or system components except piping located between the motor-Scroll Compressor and pressure relief device which could introduce a pressure drop (IEC 60335-2-34)		P
	Compliance is checked by inspection (IEC 60335-2-34)		P
23	**INTERNAL WIRING**		—
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		P
	Wiring effectively prevented from coming into contact with 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		P
	Flexible metallic tubes not causing damage to insulation of conductors		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	Open-coil springs not used		N/A
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N/A
	No damage after 10 000 flexings for conductors flexed during normal use, or		N/A N/A
	100 flexings for conductors flexed during user maintenance		
	Electric strength test of 16.3, 1000 V between live parts and accessible metal parts		N/A
	Not more than 10% of the strands of any conductor broken, and		N/A
	not more than 30% for wiring supplying circuits that consume no more than 15W		N/A
23.4	Bare internal wiring sufficiently rigid and fixed		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		N/A
	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		N/A
	For class II construction, the requirements for supplementary insulation and reinforced insulation apply, (IEC60335-1/A1)		N/A
	except that the sheath of a cord complying with IEC 60227 or IEC 60245 may provide supplementary insulation. (IEC60335-1/A1)		N/A
	A single layer of internal wiring insulation does not provide reinforced insulation		N/A
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by clamping at both ends, or		N/A
	be such that it can only be removed by breaking or cutting		N/A
23.7	The colour combination green/yellow only used for earthing conductors		P
23.8	Aluminium wires not used for internal wiring		P

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	This does not apply to wiring inside the housing (IEC 60335-2-34)		N/A
23.9	Stranded conductors not consolidated by soldering where they are subjected to contact pressure, unless		N/A
	the contact pressure is provided by spring terminals		N/A
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52)		N/A
24	**COMPONENTS**		—
24.1	Components comply with safety requirements in relevant IEC standards (IEC60335-1/A1)		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 (IEC60335-1/A1)		P
	Relays tested as part of the appliance, or (IEC60335-1/A1)		N/A
	alternatively acc. to IEC 60730-1, and meeting the additional requirements in IEC 60335-1 (IEC60335-1/A1)		N/A
	The requirements of Clause 29 apply between live parts of components and accessible parts of the appliance (IEC60335-1/A1)		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 (IEC60335-1/A1)		N/A
	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 (IEC60335-1/A1)		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		N/A
	If these conditions are not satisfied, the component is tested as part of the appliance.		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	Power electronic converter circuits not required to comply with IEC 62477-1, they are tested as part of the appliance		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		N/A
	For components mentioned in 24.1.1 to 24.1.9 no additional tests specified in the relevant component standard are necessary other than those specified in 24.1.1 to 24.1.9		P
	Components not tested and found to comply with relevant IEC standard and components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance		N/A
	Lampholders and starterholders that have not being tested and found to comply with the relevant IEC standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant IEC standard		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, comply with IEC 60384-14		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 (IEC60335-1/A1)		N/A
	Safety isolating transformers comply with IEC 61558-2-6		N/A
	If they have to be tested, they are tested according to Annex G		N/A
24.1.3	Switches comply 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

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	If the switch operates a relay or contactor, the complete switching system is subjected to the test		N/A
	If the switch only operates a motor staring relay complying with IEC 60730-2-10 with the number of cycles of a least 10 000 as specified, the complete switching system need not be tested		N/A
24.1.4	Automatic controls comply with IEC 60730-1 with the relevant part 2. The number of cycles of operation being at least:		—
	- 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		N/A
	- timers: 3 000		N/A
	- energy regulators: 10 000		N/A
	- starting relay: 100 000 (IEC 60335-2-34)		N/A
	- self-resetting thermal motor-protectors for motor-Scroll Compressors:		N/A
	2000 or the number of operations during the 15 day locked-rotor test of 19.101, whichever is the greater (IEC 60335-2-34)		N/A
	- non-self-resetting thermal motor-protectors for motor-Scroll Compressors: 50 (IEC 60335-2-34)		N/A
	The number of cycles for controls operating during clause 11 need not be declared, if the appliance meets the requirements of this standard when they are short-circuited		N/A
	Thermal motor protectors are tested in combination with their motor under the conditions specified in Annex D		N/A
	For water valves containing live parts and that are incorporated in external hoses for connection of an appliance to the water mains, the degree of protection declared for subclause 6.5.2 of IEC 60730-2-8 is IPX7		N/A
	Thermal cut-outs of the capillary type comply with the requirements for type 2.K controls in IEC 60730-2-9 (IEC60335-1/A1)		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
24.1.5	Appliance couplers comply with IEC 60320-1		N/A
	However, for class II appliances classified higher than IPX0, the appliance couplers comply with IEC 60320-2-3 (IEC60335-1/A1)		N/A
	Interconnection couplers comply with IEC 60320-2-2		N/A
24.1.6	Small lamp holders similar to E10 lampholders comply with IEC 60238, the requirements for E10 lampholders being applicable		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		N/A
24.1.8	The relevant standard for thermal links is IEC 60691		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		N/A
	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 .....:		P
24.2	Appliances not fitted with:		—
	- 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		N/A
	- thermal cut-outs that can be reset by soldering, unless		N/A
	the solder has a melding point of at least 230 ˚C		N/A
24.3	Switches intended for all-pole disconnection of stationary appliances are directly connected to the supply terminals and have a contact separation in all poles, providing full disconnection under overvoltage category III conditions		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		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
24.5	Capacitors in auxiliary windings of motors marked with their rated voltage and capacitance, and used accordingly		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		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		N/A
	They are supplied with the appliance		N/A
	Appliances intended to be permanently connected to the water mains not connected by a detachable hose-set		N/A
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		N/A
	One or more of the following conditions are to be met:		—
	- 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	In motor-Scroll Compressors that employ flammable refrigerants, components that may arc or spark during normal operation of the end product shall comply with the requirements of IEC 60079-15, as modified by Annex DD, for group IIA gases or the refrigerant used. This requirement is not applicable to components within the housing.(IEC60335-2-34/A1)		P

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict

25	**SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS**		—
	This clause is applicable only if the motor-Scroll Compressor is classified in accordance with 6.102 as being intended for direct connection of the appliance supply cord to the motor-Scroll Compressor terminals (IEC 60335-2-34)		P
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		—
	- 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 (IEC60335-1/A1)		N/A
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance, or		N/A
	- pins for insertion into socket-outlets		—
	- a set of terminals allowing the connection of a supply cord (IEC 60335-2-34)		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		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:		—
	- a set of terminals allowing the connection of a flexible cord		P
	- 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

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	For a fixed appliance constructed so that parts can be removed to facilitate easy installation, this requirement is met if it is possible to connect the fixed wiring without difficulty after a part of the appliance has been fixed to its support		N/A
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimension according to table 10 (mm) .....:		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:		—
	- type X attachment		N/A
	- type Y attachment		P
	- 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		N/A
25.6	Plugs fitted with only one flexible cord		N/A
25.7	Not Applicable (IEC 60335-2-34)		—
25.8	Nominal cross-sectional area of supply cords not less than table 11; rated current (A); cross-sectional area (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. (IEC60335-1/A1)		N/A
25.11	Conductors of supply cords not consolidated by soldering where they are subject to contact pressure, unless		N/A
	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		N/A
25.13	Inlet openings so constructed as to prevent damage to the supply cord		N/A

IEC 60335-2-34			
Clause	Requirement + Test	Result - Remark	Verdict
	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 (IEC60335-1/A1)		N/A
	If unsheathed supply cord, a similar additional bushing or lining is required, unless the appliance is		N/A
	class 0, or		N/A
	a class III appliance not containing live parts		N/A
25.14	Supply cords moved while in operation adequately protected against excessive flexing		N/A
	Flexing test, as described:		—
	- applied force (N) .....:		N/A
	- number of flexings.....:		N/A
	The test does not result in:		—
	- 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		N/A
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		N/A
	Pull and torque test of supply cord:		—
	- 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).....:		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict
25.17	Adequate cord anchorages for type Y and Z attachment, test with the cord supplied with the appliance		p
25.18	Cord anchorages only accessible with the aid of a tool, or		p
	Constructed so that the cord can only be fitted with the aid of a tool		N/A
25.19	Type X attachment, glands not used as cord anchorage in portable appliances		N/A
	Tying the cord into a knot or tying the cord with string not used		N/A
25.20	The conductors of the supply cord for type Y and Z attachment insulated from accessible metal parts		p
25.21	Space for supply cord for type X attachment or for connection of fixed wiring constructed:		—
	- to permit checking of conductors with respect to correct positioning and connection before fitting any cover		N/A
	- so there is no risk of damage to the conductors or their insulation when fitting the cover		N/A
	- for portable appliances, so that the uninsulated end of a conductor, if it becomes free from the terminal, prevented from contact with accessible metal parts		N/A
	2 N test to the conductor for portable appliances; no contact with accessible metal parts		N/A
25.22	Appliance inlets:		—
	- live parts not accessible during insertion or removal		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:		N/A
	- the cross-sectional area of the conductors is determined on the basis of the maximum current during clause 11		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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		N/A
25.25	Dimensions of pins that are inserted into socket-outlets compatible with the dimensions of the relevant socket-outlet.		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**		—
	This clause is applicable only if the motor-Scroll Compressor is classified in accordance with 6.102 as being intended for direct connection of the appliance supply cord to the motor-Scroll Compressor terminals (IEC 60335-2-34)		N/A
26.1	Appliances provided with terminals or equally effective devices for connection of external conductors		N/A
	Terminals only accessible after removal of a non-detachable cover, except		N/A
	for class III appliances that do not contain live parts		N/A
	Earthing terminals may be accessible if a tool is required to make the connections and means are provided to clamp the wire independently from its connection		N/A
26.2	Appliances with type X attachment and appliances for the connection of cables to fixed wiring provided with terminals in which connections are made by means of screws, nuts or similar devices, unless		N/A
	the connections are soldered		N/A
	Screws and nuts not used to fix any other component, except		N/A
	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		N/A
	If soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone, unless		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
	Terminals fixed so that when the clamping means is tightened or loosened:		—
	- the terminal does not become loose		N/A
	- internal wiring is not subjected to stress		N/A
	- neither clearances nor creepage distances are reduced below the values in clause 29		N/A
	Compliance checked by inspection and by the test of subclause 9.6 of IEC 60999-1, the torque applied being equal to two-thirds of the torque specified (Nm):		N/A
	No deep or sharp indentations of the conductors		N/A
26.4	Terminals for type X attachment, except those having a specially prepared cord and those for the connection of cables of fixed wiring, no special preparation of conductors such as by soldering, use of cable lugs, eyelets or similar, and		N/A
	so constructed or placed that conductors prevented from slipping out when clamping screws or nuts are tightened		N/A
26.5	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection to other parts that result in a hazard		N/A
	Stranded conductor test, 8 mm insulation removed		N/A
	No contact between live parts and accessible metal parts and,		N/A
	for class II constructions, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N/A
26.6	Terminals for type X attachment and for connection of cables of fixed wiring suitable for connection of conductors with cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm²).....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If a specially prepared cord is used, terminals need only be suitable for that cord		N/A
26.7	Terminals for type X attachment, except in class III appliances not containing live parts, accessible after removal of a cover or part of the enclosure		N/A
26.8	Terminals for the connection of fixed wiring, including the earthing terminal, located close to each other		N/A
26.9	Terminals of the pillar type constructed and located as specified		N/A
26.10	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless		N/A
	conductors ends fitted with means suitable for screw terminals		N/A
	Pull test of 5 N to the connection		N/A
26.11	For type Y and Z attachment, soldered, welded, crimped or similar connections may be used		N/A
	For Class II appliances, the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		N/A
	If soldering, welding or crimping alone used, barriers provided so that clearances and creepage distances between live parts and other metal parts are not reduced below the values for supplementary insulation if the conductor becomes free		N/A
27	**PROVISION FOR EARTHING**		—
27.1	An earthing terminal is required only if the motor-Scroll Compressor is classified in accordance with 6.102 as being intended for direct connection of the appliance supply cord to the motor-Scroll Compressor terminals (IEC 60335-2-34)		P
	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 (IEC60335-1/A1)		N/A
	Class II appliances and class III appliances can incorporate an earth for functional purposes (IEC60335-1/A1)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Safety extra-low voltage circuits not earthed, unless		N/A
	protective extra-low voltage circuits		N/A
27.2	Clamping means of earthing terminals adequately secured against accidental loosening		N/A
	Terminals for the connection of external equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm², and		N/A
	- do not provide earthing continuity between different parts of the appliance, and		N/A
	- conductors cannot be loosened without the aid of a tool		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes (IEC60335-1/A1)		N/A
27.3	For a detachable part having an earth connection and being plugged into another part of the appliance, the earth connection is made before and separated after current-carrying connections when removing the part		N/A
	For appliances with supply cords, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes (IEC60335-1/A1)		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		N/A
	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		P
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes (IEC60335-1/A1)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes (IEC60335-1/A1)		N/A
	Resistance not exceeding 0,1 Ω at the specified low-resistance test (Ω).....:		P
27.6	The printed conductors of printed circuit boards not used to provide earthing continuity in hand-held appliances.		N/A
	They may be used to provide earthing continuity in other appliances if at least two tracks are used with independent soldering points and the appliance complies with 27.5 for each circuit		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes (IEC60335-1/A1)		N/A
28	**SCREWS AND CONNECTIONS**		—
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		P
	Screws of insulating material not used for any electrical connections or connections providing earthing continuity		P
	Screws used for electrical connections or connections providing earthing continuity screwed into metal		P
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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:		—
	• 30.2.2 is applicable and that carry a current not exceeding 0,5 A		N/A
	• 30.2.3 is applicable and that carry a current not exceeding 0,2 A		N/A
28.3	Space-threaded (sheet metal) screws only used for electrical connections if they clamp the parts together		N/A
	Thread-cutting (self-tapping) screws and thread rolling screws only used for electrical connections if they generate a full form standard machine screw thread		N/A
	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer		N/A
	Thread-cutting, thread rolling and space threaded screws may be used in connections providing earthing continuity provided it is not necessary to disturb the connection:		—
	- in normal use,		N/A
	- during user maintenance,		N/A
	- when replacing a supply cord having a type X attachment, or		N/A
	- during installation		N/A
	At least two screws being used for each connection providing earthing continuity, unless		N/A
	the screw forms a thread having a length of at least half the diameter of the screw		N/A
28.4	Screws and nuts that make mechanical connection secured against loosening if they also make electrical connections or connections providing earthing continuity		N/A
	This requirement does not apply to screws in the earthing circuit if at least two screws are used, or		N/A
	if an alternative earthing circuit is provided		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Rivets for electrical connections or connections providing earthing continuity secured against loosening if the connections are subjected to torsion		N/A
29	**CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION**		—
	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 .....:		P
	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		P
	These values apply to functional, basic, supplementary and reinforced insulation .....:		P
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 (IEC60335-1/A1)		N/A
	Impulse voltage test is not applicable:		—
	- when the microenvironment is pollution degree 3, or		N/A
	- for basic insulation of class 0 and class 01 appliances, or		N/A
	- to appliances intended for use at altitudes exceeding 2 000 m		N/A
	Appliances are in overvoltage category II		P
	A force of 2 N is applied to bare conductors, other than heating elements		N/A
	A force of 30 N is applied to accessible surfaces		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Except as specified in 29.1.1 and 29.1.4, clearances less than those specified in Table 16 are not allowed for basic insulation and functional insulation inside the housing (IEC 60335-2-34)		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)	N/A
	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1,0 mm if the microenvironment is pollution degree 1		N/A
	Lacquered conductors of windings considered to be bare conductors		N/A
	Clearances inside the housing shall not be less than 1,0 mm for a rated impulse voltage of 1500 V (IEC 60335-2-34)		N/A
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16.....:	(see appended table)	P
29.1.3	Clearances of reinforced insulation not less than those specified for basic insulation in table 16, using the next higher step for rated impulse voltage .....:	(see appended table)	P
	For double insulation, with no intermediate conductive part between basic and supplementary insulation, clearances are measured between live parts and the accessible surface, and the insulation system is treated as reinforced insulation		N/A
29.1.4	Clearances for functional insulation are the largest values determined from:		—
	- table 16 based on the rated impulse voltage .....:	(see appended table)	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 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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Lacquered conductors of windings considered to be bare conductors		N/A
	However, clearances at crossover points are not measured		N/A
	Clearance between surfaces of PTC heating elements may be reduced to 1mm		N/A
	Clearances inside the housing are reduced by 0,5 mm for rated impulse voltages of 2500 V or more (IEC 60335-2-34)		N/A
	Between winding wires and winding leads for motors or thermal motor-protectors, no minimum clearance is specified (IEC 60335-2-34)		N/A
29.1.5	Appliances having higher working voltages than rated voltage, clearances for basic insulation are the largest values determined from:		—
	- table 16 based on the rated impulse voltage .....:		N/A
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		P
	- 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		P
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1, the clearances of reinforced insulation dimensioned as specified in Table F.7a are to withstand 160% of the withstand voltage required for basic insulation		N/A
	If clearances for basic insulation are selected from Clause 4 of IEC 60664-4, the clearances of reinforced insulation are twice the value required for basic insulation		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

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Clause	Requirement + Test	Result - Remark	Verdict
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree.....:	(see appended table)	P
	Pollution degree 2 applies, unless		P
	- precautions taken to protect the insulation; pollution degree 1		N/A
	- insulation subjected to conductive pollution; pollution degree 3		N/A
	A force of 2 N is applied to bare conductors, other than heating elements		N/A
	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		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.....:		P
	Except for pollution degree 1, corresponding creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14 .....:		N/A
	This does not apply to glass insulated terminals where corrosion protection extends over the glass (IEC 60335-2-34)		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 .....:		P
29.2.3	Creepage distances of reinforced insulation at least double those specified for basic insulation in table 17, or.....:	(see appended table)	N/A
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 18.....:		P
	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited		P
	This does not apply to glass insulated terminals where corrosion protection extends over the glass (IEC 60335-2-34)		N/A
29.3	Supplementary and reinforced insulation have adequate thickness, or a sufficient number of layers, to withstand the electrical stresses		N/A
	Compliance checked:		—
	- by measurement, in accordance with 29.3.1, or		N/A
	- by an electric strength test in accordance with 29.3.2, or		N/A
	- for insulation, other than single layer internal wiring insulation, by an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3, and (IEC60335-1/A1)		N/A
	for accessible parts of reinforced insulation consisting of a single layer, by measurement in accordance with 29.3.4, or (IEC60335-1/A1)		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 (IEC60335-1/A1)		N/A
	- as specified in subclause 6.3 of IEC 60664-4 for insulation that is subjected to any periodic voltage having a frequency exceeding 30 kHz		N/A
29.3.1	Supplementary insulation have a thickness of at least 1 mm		N/A
	Reinforced insulation have a thickness of at least 2 mm		N/A
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		N/A
	Supplementary insulation consist of at least 2 layers		N/A
	Reinforced insulation consist of at least 3 layers		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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 .....:		N/A
30	**RESISTANCE TO HEAT AND FIRE**		—
	This clause is applicable only to non-metallic and insulating materials which are outside the housing (IEC 60335-2-34)		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		N/A
	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 30.1)	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 30.1)	P
	Parts of thermoplastic material providing supplementary or reinforced insulation tested at 25 °C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C) .....:	(see appended table 30.1)	N/A
30.2	Parts of non-metallic material resistant to ignition and spread of fire		
	This requirement does not apply to:		—
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
	For appliances for remote operation, 30.2.3 applies		N/A
	For base material of printed circuit boards, 30.2.4 applies		N/A
30.2.1	Parts of non-metallic material subjected to the glow-wire test of IEC 60695-2-11 at 550°C	(see appended table 30.2)	P
	However, test not carried out if the material is classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 550 °C, or		P
	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 60335-2-34)		N/A
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2		N/A
	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		N/A
	parts of non-metallic material, other than small parts, within a distance of 3 mm,		N/A
	subjected to the glow-wire test of IEC 60695-2-11 with a test severity of 850 °C	(see appended table 30.2)	N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 850 °C		N/A
30.2.3.2	Parts of non-metallic material supporting connections, and		N/A
	parts of non-metallic material within a distance of 3mm,		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	subjected to the glow-wire test of IEC 60695-2-11 with appropriate severity level:	(see appended table 30.2)	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
	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:		—
	- a glow-wire ignition temperature according to IEC 60695-2-13 of at least:		N/A
	• 775 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	• 675 °C, for other connections		N/A
	- a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		—
	- comprise material having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or		N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
	The consequential needle-flame test of Annex E applied to non-metallic parts that encroach within the vertical cylinder placed above the centre of the connection zone and on top of the non-metallic parts supporting current-carrying connections, and parts of non-metallic material within a distance of 3 mm of such connections if these parts are those:		—
	- 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

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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:		—
	- 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	(see appended table 30.2/30.4)	N/A
	Test not applicable to conditions as specified.....:		N/A
31	**RESISTANCE TO RUSTING**		—
	This clause is applicable only to parts which are outside the housing (IEC 60335-2-34)		N/A
	Relevant ferrous parts adequately protected against rusting		N/A
32	**RADIATION, TOXICITY AND SIMILAR HAZARDS**		—
	Not Applicable (IEC 60335-2-34)		N/A
A	**ANNEX A (INFORMATIVE) ROUTINE TESTS**		—
	Description of routine tests to be carried out by the manufacturer		P
B	**ANNEX B (NORMATIVE) APPLIANCES POWERED BY RECHARGEABLE BATTERIES THAT ARE RECHARGED IN THE APPLIANCE**		—
	The following modifications to this standard are applicable for appliances powered by batteries that are recharged in the appliance (IEC60335-1/A1)		N/A
	Three forms of construction covered:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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 (IEC60335-1/A1)		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 (IEC60335-1/A1)		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 (IEC60335-1/A1)		N/A
3.1.9	Appliance operated under the following conditions:		—
	- the appliance, supplied by its fully charged battery, operated as specified in relevant part 2		N/A
	- the battery is charged, the battery being initially discharged to such an extent that the appliance cannot operate		N/A
	-if possible, the appliance is supplied from the supply mains through its battery charger, the battery being initially discharged to such an extent that the appliance cannot operate. The appliance is operated as specified in relevant part 2		N/A
	- if the appliance incorporates inductive coupling between two parts that are detachable from each other, the appliance is supplied from the supply mains with the detachable part removed		N/A
3.6.2	Part to be removed in order to discard the battery is not considered to be detachable		N/A
5.B.101	Appliances supplied from the supply mains tested as specified for motor-operated appliances		N/A
7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage (V) and polarity of the terminals..... .....:		N/A
	The positive terminal indicated by symbol IEC 60417-5005 and the negative terminal by symbol IEC 60417-5006		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Appliances intending to be supplied from a detachable supply unit marked with symbol IEC 60417-6181 and its type reference along with symbol ISO 7000-0790 (2004-01), or (IEC60335-1/A1)		N/A
	use only with <model designation> supply unit .....:		N/A
7.6	Additional symbols (IEC60335-1/A1)		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: (IEC60335-1/A1)		—
	WARNING: For the purposes of recharging the battery, only use the detachable supply unit provided with this appliance (IEC60335-1/A1)		N/A
	If the symbol for detachable supply unit is used, its meaning is explained (IEC60335-1/A1)		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 (IEC60335-1/A1)		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) (IEC60335-1/A1) .....:		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.B.101	Appliances supplied at rated voltage for 168 h, the battery being continually charged		N/A
19.B.102	For appliances having batteries that can be removed without the aid of a tool, short-circuit of the terminals of the battery, the battery being fully charged,		N/A
19.B.103	Appliances having batteries replaceable by the user supplied at rated voltage under normal operation with the battery removed or in any position allowed by the construction		N/A
19.13	The battery does not rupture or ignite (IEC60335-1/A1)		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:		—
	- 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**		—
	Not Applicable (IEC 60335-2-34)		N/A
D	**ANNEX D (NORMATIVE)** **THERMAL MOTOR PROTECTORS**		—
	Not Applicable (IEC 60335-2-34)		N/A
E	**ANNEX E (NORMATIVE)** **NEEDLE-FLAME TEST**		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Needle-flame test carried out in accordance with IEC 60695-11-5, with the following modifications:		N/A
7	Severities		N/A
	The duration of application of the test flame is 30 s ± 1 s		N/A
9	Test procedure		—
9.1	The specimen so arranged that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1		N/A
9.2	The first paragraph does not apply		N/A
	If possible, the flame is applied at least 10 mm from a corner		N/A
9.3	The test is carried out on one specimen		N/A
	If the specimen does not withstand the test, the test may be repeated on two additional specimens, both withstanding the test		N/A
11	Evaluation of test results		—
	The duration of burning not exceeding 30 s		N/A
	However, for printed circuit boards, the duration of burning not exceeding 15 s		N/A
F	**ANNEX F (NORMATIVE) CAPACITORS**		—
	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		—
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		—
	Items a) and b) are applicable		N/A
3.4	Approval testing		—
3.4.3.2	Table 3 is applicable as described		N/A
4.1	Visual examination and check of dimensions		—
	This subclause is applicable		N/A
4.2	Electrical tests		—
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		—
	This subclause is applicable		N/A
	Only insulation resistance and voltage proof are checked		N/A
4.13	Impulse voltage		—
	This subclause is applicable		N/A
4.14	Endurance		—
	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		—
	This subclause is applicable		N/A
4.18	Active flammability test		—
	This subclause is applicable		N/A
G	**ANNEX G (NORMATIVE)** **SAFETY ISOLATING TRANSFORMERS**		**—**
	The following modifications to this standard are applicable for safety isolating transformers:		—
7	Marking and instructions		—
7.1	Transformers for specific use marked with:		—
	-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		—
	Fail-safe transformers comply with subclause 15.5 of IEC 61558-1		N/A
22	Construction		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Subclauses 19.1 and 19.1.2 of IEC 61558-2-6 are applicable		N/A
29	Clearances, creepage distances and solid insulation		—
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**		—
	Switches comply with the following clauses of IEC 61058-1, as modified below:		—
	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		—
	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		—
	The tests may be carried out on a separate sample		N/A
15	Insulation resistance and dielectric strength		—
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		—
	Compliance is checked on three separate appliances or switches		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	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		—
	Clause 20 is applicable to clearances across full disconnection and micro-disconnection (IEC60335-1/A1)		N/A
	It is also applicable to creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in Table 24 (IEC60335-1/A1)		N/A
I	**ANNEX I (NORMATIVE)** **MOTORS HAVING BASIC INSULATION THAT IS INADEQUATE FOR THE RATED VOLTAGE OF THE APPLIANCE**		—
	The following modifications to this standard are applicable for motors having basic insulation that is inadequate for the rated voltage of the appliance:		—
8	Protection against access to live parts		—
8.1	Metal parts of the motor are considered to be bare live parts		N/A
11	Heating		—
11.3	The temperature rise of the body of the motor is determined instead of the temperature rise of the windings		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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		—
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		—
19.1	The tests of 19.7 to 19.9 are not carried out		N/A
19.I.101	Appliance operated at rated voltage with each of the following fault conditions:		—
	- 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		—
22.I.101	For class I appliances incorporating a motor supplied by a rectifier circuit, the d.c. circuit being insulated from accessible parts of the appliance by double or reinforced insulation		N/A
	Compliance checked by the tests specified for double and reinforced insulation		N/A
J	**ANNEX J (NORMATIVE)** **COATED PRINTED CIRCUIT BOARDS**		—
	Testing of protective coatings of printed circuit boards carried out in accordance with IEC 60664-3 with the following modifications:		—
5.7	Conditioning of the test specimens		—
	When production samples are used, three samples of the printed circuit board are tested		N/A
5.7.1	Cold		—
	The test is carried out at -25 °C		N/A
5.7.3	Rapid change of temperature		—
	Severity 1 is specified		N/A
5.9	Additional tests		—
	This subclause is not applicable		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
K	**ANNEX K (NORMATIVE) OVERVOLTAGE CATEGORIES**		—
	The information on overvoltage categories is extracted from IEC 60664-1		N/A
	Overvoltage category is a numeral defining a transient overvoltage condition		N/A
	Equipment of overvoltage category IV is for use at the origin of the installation		N/A
	Equipment of overvoltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements		N/A
	Equipment of overvoltage category II is energy consuming equipment to be supplied from the fixed installation		N/A
	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**		—
	Information for the determination of clearances and creepage distances		P
M	**ANNEX M (NORMATIVE) POLLUTION DEGREE**		—
	The information on pollution degrees is extracted from IEC 60664-1		N/A
	Pollution		—
	The microenvironment determines the effect of pollution on the insulation, taking into account the macroenvironment		N/A
	Means may be provided to reduce pollution at the insulation by effective enclosures or similar		N/A
	Minimum clearances specified where pollution may be present in the microenvironment		N/A
	Degrees of pollution in the microenvironment		—

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Clause	Requirement + Test	Result - Remark	Verdict
	For evaluating creepage distances, the following degrees of pollution in the microenvironment are established:		—
	- 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		N/A
	- 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**		—
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications:		—
7	Test apparatus		—
7.3	Test solutions		—
	Test solution A is used		N/A
10	Determination of proof tracking index (PTI)		—
10.1	Procedure		—
	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		—
	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**		—
	Description of tests for determination of resistance to heat and fire		N/A
P	**ANNEX P (INFORMATIVE)** **GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN WARM DAMP EQUABLE CLIMATES**		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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		—
	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		—
5.7	The ambient temperature for the tests of clauses 11 and 13 is 40°C +3/0 °C		N/A
7.1	The appliance marked with the letters WDaE		N/A
7.12	The instructions state that the appliance is to be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30 mA		N/A
	The instructions state that the appliance is considered to be suitable for use in countries having a 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**		—
	Description of tests for appliances incorporating electronic circuits		N/A
R	**ANNEX R (NORMATIVE)** **SOFTWARE EVALUATION**		—
	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		—
	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

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Clause	Requirement + Test	Result - Remark	Verdict
R.2	Requirements for the architecture		—
	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:		—
	- single channel with periodic self-test and monitoring		N/A
	- dual channel (homogenous) with comparison		N/A
	- dual channel (diverse) with comparison		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 have one of the following structures:		—
	- 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		—
R.2.2.1	When redundant memory with comparison is provided on two areas of the same component, the data in one area is stored in a different format from that in the other area		N/A
R.2.2.2	Programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.2 and that use dual channel structures with comparison, have additional fault/error detection means for any fault/errors not detected by the comparison		N/A
R.2.2.3	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, means are provided for the recognition and control of errors in transmissions to external safety-related data paths		N/A
R.2.2.4	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the programmable electronic circuits incorporate measures to address the fault/errors in safety-related segments and data indicated in table R.1 and R.2 as appropriate		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
R.2.2.5	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, detection of a fault/error occur before compliance with clause 19 is impaired		N/A
R.2.2.6	The software is referenced to relevant parts of the operating sequence and the associated hardware functions		N/A
R.2.2.7	Labels used for memory locations are unique		N/A
R.2.2.8	The software is protected from user alteration of safety-related segments and data		N/A
R.2.2.9	Software and safety-related hardware under its control is initialized and terminates before compliance with clause 19 is impaired		N/A
R.3	Measures to avoid errors		—
R.3.1	General		—
	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		—
	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		—
R.3.2.1	Software safety requirements:	Software Id:	—
	The specification of the software safety requirements includes the descriptions listed		N/A
R.3.2.2	Software architecture		—

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Clause	Requirement + Test	Result - Remark	Verdict
R.3.2.2.1	The specification of the software architecture includes the aspects listed - techniques and measures to control software faults/errors (refer to R.2.2); - interactions between hardware and software; - partitioning into modules and their allocation to the specified safety functions; - hierarchy and call structure of the modules (control flow); - interrupt handling; - data flow and restrictions on data access; - architecture and storage of data; - time-based dependencies of sequences and data	Document ref. No:	N/A
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		—
R.3.2.3.1	Based on the architecture design, software is suitably refined into modules		N/A
	Software module design and coding is implemented in a way that is traceable to the software architecture and requirements		N/A
R.3.2.3.2	Software code is structured		N/A
R.3.2.3.3	Coded software is validated against the module specification by static analysis		N/A
	The module specification is validated against the architecture specification by static analysis		N/A
R.3.3.3	Software validation		—
	The software is validated with reference to the requirements of the software safety requirements specification		N/A
	Compliance is checked by simulation of:		—
	- input signals present during normal operation		N/A
	- anticipated occurrences		N/A
	- undesired conditions requiring system action		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

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Clause	Requirement + Test	Result - Remark	Verdict

7.2 Analog I/O 7.2.1 A/D and D/A-converter	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A
7.2.2 Analog multiplexer	Wrong addressing	Plausibility check	H.2.18.13			N/A
8 VOID						N/A
9 Custom chips d e.g. ASIC, GAL, gate array	Any output outside the static and dynamic functional specification	Periodic self-test	H.2.16.6			N/A
NOTE A Stuck-at fault model denotes a fault model representing an open circuit or a non-varying signal level. A DC fault model denotes a stuck-at fault model incorporating short circuit between signal lines.						
a) For fault/error assessment, some components are divided into their sub-functions. b) For each sub-function in the table, the Table R.2 measure will cover the software fault/error. c) Where more than one measure is given for a sub-function, these are alternatives. d) To be divided as necessary by the manufacturer into sub-functions. e) Table R.1 is applied according to the requirements of R.1 to R.2.2.9 inclusive.						

AA	**ANNEX AA, (NORMATIVE) RUNNING OVERLOAD TESTS FOR MOTOR-Scroll CompressorS CLASSIFIED AS TESTED WITH ANNEX AA (IEC 60335-2-34)**		—
AA.1	The tests in this annex are applicable only if the motor-Scroll Compressor is classified as being tested with Annex AA according to 6.101 (IEC 60335-2-34)	(see additional table)	P
	Excluding starting current, the maximum value of the current averaged over any 5 min period is recorded. The interval between current measurements shall not exceed 30 s. The starting current is considered to be excluded if the first current measurement is made approximately 1 min after starting (IEC60335-2-34/A1)		P
	Before testing according to this annex is started, it shall be verified that the motor-Scroll Compressor is in working order		P
	by applying the test of 16.3		P

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Clause	Requirement + Test	Result - Remark	Verdict
	by operating it in a substitute refrigeration circuit under:		P
	- the conditions specified in Table AA.1 but at rated voltage or		P
	- the maximum load – maximum cooling conditions specified in Table AA.2		N/A
	as appropriate for a period of not less than 2 h		P
	If the motor-Scroll Compressor protection system or motor-Scroll Compressor control system contains an electronic circuit the tests in Clauses AA.4 and AA.5 are to be conducted, otherwise		P
	the tests in Clauses AA.2 and AA.3 are to be conducted		N/A
	If two-stage motor-Scroll Compressor are to be tested in accordance with Clauses AA.2 and AA.3		N/A
	they have to be tested under the most onerous conditions of operation		P
AA.2	The motor-Scroll Compressor including the motor-Scroll Compressor protection system or motor-Scroll Compressor control system, if any, is connected to the substitute refrigeration circuit of Figure AA.1 and operated under the appropriate conditions given in Table AA.1 for tests 1 and 2	(see additional table)	N/A
	However, for R-744 refrigerant intended for use in a transcritical refrigeration system, for all tests the maximum operating discharge pressure is 12 MPa and the return gas temperature is +25 °C. (IEC60335-2-34/A1)		O
	The tests are continued until steady conditions are reached		O
	If the motor-Scroll Compressor cooling capacity is variable, the tests are carried out at maximum and minimum cooling conditions		N/A
	During tests 1 and 2:		—
	- the temperature rises are measured and shall not exceed the values given in Table 3 of Part 1 reduced by 7 K		P
	- the motor-Scroll Compressor protection system shall not operate to disconnect the motor-Scroll Compressor from the supply		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- the temperature of the housing and of the accessible surfaces of associated components shall not exceed 150°C		N/A
AA.3	Immediately after the tests of Clause AA.2, the motor-Scroll Compressor including the motor-Scroll Compressor protection system or motor-Scroll Compressor control system, if any, is operated under the appropriate conditions given in Table AA.1 for test 3 until:		—
	- the motor-Scroll Compressor protection system operates or		N/A
	- the motor-Scroll Compressor reaches steady conditions in the stalled or running condition		P
	During test 3 , if the motor-Scroll Compressor protection system does not operate, the voltage is reduced in steps of 4 % ± 1 % of the rated voltage, at a rate of approximately 2 V/min, until:		—
	- the motor-Scroll Compressor protection system operates or		N/A
	- the motor-Scroll Compressor stalls and steady conditions are reached		P
	In neither of these conditions shall the motor-Scroll Compressor winding temperature exceed:		—
	- 160°C for motor-Scroll Compressors with synthetic insulation		P
	- 150°C for motor-Scroll Compressors with cellulosic insulation		N/A
AA.4	The motor-Scroll Compressor including the motor-Scroll Compressor protection system and motor-Scroll Compressor control system, if any, is connected to the substitute refrigeration circuit of Figure AA.1 and operated under the appropriate conditions given in Table AA.1 for each of tests 4, 5, 6 and 7	(see additional table)	P
	However, for R-744 refrigerant intended for use in a transcritical refrigeration system, for all tests the maximum operating discharge pressure is 12 MPa and for tests 4 and 6 the return gas temperature is +25 °C. (IEC60335-2-34)		P
	The tests are continued until steady conditions are reached		P
	During tests 4, 5, 6 and 7:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- the temperature rises of the motor-Scroll Compressor control system and the motor-Scroll Compressor protection system containing electronic components are measured and shall not exceed the values given in Table 3 of Part 1 reduced by 7 K (IEC60335-2-34/A1)		P
	- the motor-Scroll Compressor protective electronic circuit shall not operate to disconnect the motor-Scroll Compressor from the supply		P
	- the temperature of the housing and of the accessible surfaces of associated components shall not exceed 150°C		P
AA.5	If during the test of Clause AA.4 that results in the highest temperature of the housing, a declared safety function reduces the motor-Scroll Compressor speed		N/A
	the tests of Clause AA.5 are performed at the reduced speed		N/A
	The test of 4, 5, 6 and 7 in Table AA.2 that resulted in the highest temperature of the housing is then repeated until steady conditions are reached		N/A
	For refrigerants other than R-744, the condensing temperature is then increased in steps of 5 K until steady conditions are reached at each step (IEC60335-2-34)		N/A
	This procedure is continued until:		N/A
	- the motor-Scroll Compressor protective electronic circuit operates to disconnect the motor-Scroll Compressor from the supply or		N/A
	- the motor-Scroll Compressor stalls and steady conditions are reached		N/A
	For R-744 refrigerant, the operating discharge pressure is then increased in steps of 0,8 MPa until steady conditions are reached at each step. This procedure is continued until one of the following conditions occurs (IEC60335-2-34/A1):		N/A
	– the motor-Scroll Compressor protective electronic circuit operates to disconnect the motorScroll Compressor from the supply;		N/A
	– the motor-Scroll Compressor stalls and steady conditions are reached		N/A
	In neither of these conditions shall the motor-Scroll Compressor winding temperature exceed:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- 160°C for motor-Scroll Compressors with synthetic insulation		N/A
	- 150°C for motor-Scroll Compressors with cellulosic insulation		N/A
BB	**ANNEX BB (NORMATIVE) WINDING WIRE INSULATION COMPATIBILITY TESTS (IEC60335-2-34/A1)**		—
BB.1	Testing of winding wire insulation shall be conducted on two sets of six representative samples as follows :		—
	a) Film-coated winding wire shall be prepared in accordance with 4.4.1 of IEC 60851-5:2008 except that samples for the refrigerant and oil exposure shall not have the loop at the end removed until after the refrigerant and oil exposure.		N/A
	b) Other winding wires shall be straight lengths of wire.		N/A
BB.2	The size of the test samples shall be the smallest nominal wire size (diameter) intended for use on the motor-Scroll Compressor.		N/A
BB.3	One set of six samples shall be maintained in the as-received condition (no exposure to refrigerant and oil). Another set of six samples shall be prepared for the refrigerant and oil exposure testing.		N/A
BB.4	The six as-received samples of winding wire shall be subjected to the electric strength test of 16.3 except that the applied voltage shall be 125 % of the maximum working voltage of the motor-Scroll Compressor, but not less than 500 V. The test voltage is applied between the conductors of the wires. The winding wire tested shall withstand the application of the test voltage specified without breakdown.		N/A
BB.5	The set of six samples prepared for the refrigerant and oil exposure testing shall be placed in test vessel(s) and each test vessel shall be provided with a pressure relief device. Each test vessel shall then be sealed, evacuated to 100 µm of mercury or less and heated to not less than 150 °C for at least 1 h.		N/A
BB.6	The oil shall be added within each test vessel so that all samples will remain partially immersed in the refrigerant-oil-mixture throughout the duration of the test, including during the no heat period.		N/A
BB.7	Each test vessel shall then be re-sealed, evacuated and heated in accordance with Clause BB.5.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
BB.8	Each test vessel shall then be charged with the refrigerant vapour in a manner which does not permit air to be introduced into the test vessel. The pressure of the refrigerant vapour shall be any convenient pressure between 1,0 MPa and 2,4 MPa for any refrigerant other than transcritical R-744, which shall be at a pressure of not less than 7,3 MPa		N/A
BB.9	The test samples shall be tested as detailed in Table BB.1. The time of heating shall be divided into five equal heating periods. Each heating period is followed by a period without heating. The period without heating shall be at a temperature of approximately 25 °C for 48 h.		N/A
BB.10	The time temperature heating cycle used for the test is selected by the manufacturer.		N/A
BB.11	Immediately after being exposed to the refrigerant and oil, the winding wire samples shall be subjected to the electric strength test of 16.3 except that the applied voltage shall be not less than 100 % of the maximum working voltage of the motor-Scroll Compressor for which the winding wire is intended to be used. The test voltage is applied between the conductors of the wires. The winding wire tested shall withstand the application of the test voltage specified without breakdown.		N/A
CC	**ANNEX CC (NORMATIVE)** **TIE CORDS AND INSULATION COMPATIBILITY TESTS (IEC60335-2-34/A1)**		—
CC.1	Testing of tie cords, insulating system materials or parts shall be conducted on two sets of six representative samples as follows:		—
	a) Tie cords shall be at least 500 mm long and of the minimum nominal thickness intended for use on the motor-Scroll Compressor.		N/A
	b) Insulating system materials shall be of an amount approximately proportional to their use in the system. They shall be of the minimum nominal thickness intended for use on the motor-Scroll Compressor and having an overall size so the test in Clause CC.3 can be conducted without flashover.		N/A
	c) Parts such as an internal motor terminal assembly or lead connection block shall be the actual type and size as intended for use in the motor-Scroll Compressor.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
CC.2	One set of six samples shall be maintained in the as-received condition (no exposure to refrigerant and oil). Another set of six samples shall be prepared for the refrigerant and oil exposure testing		N/A
CC.3	The six as-received samples of insulating materials or parts shall be subjected to the electric strength test of 16.3 except that the applied voltage shall be not less than 125 % of the maximum working voltage of the circuit for which the materials are intended, but not less than 500 V.		N/A
CC.4	If the parts to be tested are:		—
	a) insulating materials other than tubing or leads, the test electrodes shall be opposing cylindrical rods, sized 5 mm diameter with edges rounded to a 1 mm radius;		N/A
	b) tubing, the test electrodes shall be a copper conductor and spherical metal shot. The copper conductor shall be of a size approximately equal to the tubing internal diameter and then inserted into the tubing. The tubing and conductor shall be bent 180° over a mandrel having a diameter of not more than 10 mm. The metal shot shall be sized 2 mm to 3 mm diameter. The tubing and conductor shall be inserted into the metal shot such that the test voltage is applied between the conductor within the tubing and the metal shot;		N/A
	c) leads, the tests electrodes shall be the wire within the lead and metal foil 50 mm long, wrapped around the lead and centred on the lead length. The test voltage shall be applied between the wire within the lead and the metal foil.		N/A
CC.5	The insulation or parts tested shall withstand the application of the test voltage specified without breakdown.		N/A
CC.6	The six as-received sample tie cords shall be subjected to a breaking test as follows:		—
	a) Tie cord breaking strength shall be determined by using constant rate of specimen extension tensile testing machine. Clamping jaws, such as of the drum or capstan type to prevent slippage or breakage of the tie cord, shall be used. The distance between the contact points of the jaws shall be adjusted to 250 mm ±10 mm.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	b) Tie cord samples shall be installed and aligned in the test machine jaws. The movable jaw shall be operated at a speed of 300 mm/min ±10 mm/min. If a sample breaks within 10 mm of the jaw contact point, the results shall be disregarded and another sample tested.		N/A
CC.7	The average tie cord breaking strength shall be recorded.		N/A
CC.8	The set of six samples prepared for the refrigerant and oil exposure testing shall be placed in test vessel(s) and each test vessel shall be provided with a pressure relief device. Each test vessel shall then be sealed, evacuated to 100 µm of mercury or less and heated to not less than 150 °C for at least 1 h.		N/A
CC.9	The oil shall be added within each test vessel so that all samples will remain partially immersed in the refrigerant-oil-mixture throughout the duration of the test, including during the no heat period.		N/A
CC.10	Each test vessel shall then be re-sealed, evacuated and heated in accordance with Clause CC.8.		N/A
CC.11	Each test vessel shall then be charged with the refrigerant vapour in a manner which does not permit air to be introduced into the test vessel. The pressure of the refrigerant vapour shall be any convenient pressure between 1,0 MPa and 2,4 MPa for any refrigerant other than transcritical R-744, which shall be at a pressure of not less than 7,3 MPa.		N/A
CC.12	The test samples shall be tested as detailed in Table CC.1. The time of heating shall be divided into five equal heating periods. Each heating period is followed by a period without heating. The period without heating shall be at a temperature of approximately 25 °C for 48 h.		N/A
CC.13	The time temperature heating cycle used for the test is selected by the manufacturer.		N/A
CC.14	Immediately after being exposed to the refrigerant and oil:		—
	a) Tie cord samples shall be subjected to the breaking strength test in accordance with Clause CC.6. Not less than five of the six tie cord samples exposed to refrigerant and oil shall have a breaking strength of at least 80 % of the average as-received tie cord breaking strength.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	b) Other insulation samples shall be subjected to the strength test of 16.3 except that the applied voltage shall be not less than 100 % of the maximum working voltage of the circuit for which the materials are intended. The insulation or parts tested shall withstand the application of the test voltage specified without breakdown.		N/A
DD	**ANNEX DD (NORMATIVE)** **NON-SPARKING "N" ELECTRICAL APPARATUS (IEC60335-2-34/A1)**		—
16	General supplementary requirements for equipment producing arcs, sparks or hot surfaces		N/A
	Clause 16 is applicable.		N/A
17	Supplementary requirements for enclosed-break devices and non-incendive components producing arcs, sparks or hot surfaces		N/A
	Clause 17 is applicable.		N/A
18	Supplementary requirements for hermetically sealed devices producing arcs, sparks or hot surfaces		N/A
	Clause 18 is applicable		N/A
19	Supplementary requirements for sealed devices producing arcs, sparks or hot surfaces		N/A
	Clause 19 is applicable		N/A
20	Supplementary requirements for restricted-breathing enclosures protecting apparatus producing arcs, sparks or hot surfaces		N/A
	Clause 20 is applicable.		N/A
S	**ANNEX S (NORMATIVE)** **BATTERY OPERATED APPLIANCES POWERED BY BATTERIES THAT ARE NON-RECHARGEABLE OR NOT RECHARGED IN THE APPLIANCE (IEC60335-1/A1)**		—
	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

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Clause	Requirement + Test	Result - Remark	Verdict
5.S.101	Appliances intended for use with a battery box are tested with the battery box supplied with the appliance or with the battery box recommended in the instructions		N/A
5.S.102	Appliances are tested as motor-operated appliances.		N/A
7.1	Appliances marked with the battery voltage (V) and the polarity of the terminals, unless:		N/A
	the polarity is irrelevant		N/A
	Appliances also marked with:		—
	– name, trade mark or identification mark of the manufacturer or responsible vendor:		N/A
	– model or type reference:		N/A
	– IP number according to degree of protection against ingress of water, other than IPX0:		N/A
	– type reference of battery or batteries:		N/A
	If relevant, the positive terminal is indicated by the symbol IEC 60417-5005 and the negative terminal by the symbol IEC 60417-5006		N/A
	If appliances use more than one battery, they are marked to indicate correct polarity connection of the batteries		N/A
7.6	Additional symbols		N/A
7.12	The instructions contain the following, as applicable:		—
	– 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		—

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Clause	Requirement + Test	Result - Remark	Verdict
	– 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
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)**	**Δ P**	**Required Δ P**	**Remark**
380 V, 50 Hz	6850	6841.9	-0.12%	+15 % or 60 W (whichever is the greater)	pass
380 V, 60 Hz	6850	6842.5	-0.11%		pass
460 V, 50 Hz	6850	6844.3	-0.08%		pass
460 V, 60 Hz	6850	6846.1	-0.06%		pass
Supplementary information:					

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

11.8	TABLE: Heating test		P
	Test voltage (V).....:	460V x 1.06	—
	Ambient (°C).....:	--	—

Thermocouple locations:	Max. temperature rise measured, Δ T (K)	Max. temperature rise limit, Δ T (K)
Surface of control panel	5.9	60
Internal wire connection to heating element	65.6	T200-25=175
Internal wire connection to PCB	13.4	80-25=55
Ambient of switch	8.8	30
Ambient of thermostat	52.5	T290-25=265
control panel PCB	18.3	60
handle	5.6	50
Ambient of switch	29.5	60
Enclosure outside, near heating element	33.6	Cl.30
Enclosure inside, near heating element	8.8	60
Enclosure of the stand	4.5	65

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Clause	Requirement + Test	Result - Remark	Verdict

Test corner	4.8	65
Supplementary information:		

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

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

13.2	TABLE: Leakage current		P
	Heating appliances: 1.15 x rated input (W) ..... :		—
	Motor-operated and combined appliances: 1.06 x rated voltage (V) ..... :	1.06×240 V	—

Leakage current between:	I (mA)	Max. allowed I (mA)
L/N to earthing terminal	0.119/0.035	0.75mA rms
Supplementary information:		

13.3	TABLE: Dielectric strength		P

Test voltage applied between:	Test potential applied (V)	Breakdown / flashover (Yes/No)
Live parts to earthing terminal	1000V	No
Supplementary information:		

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Clause	Requirement + Test	Result - Remark	Verdict

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

16.2	TABLE: Leakage current		P
	Single phase appliances: 1.06 x rated voltage (V) . :	1.06×240 V	—
	Three phase appliances 1.06 x rated voltage divided by √3 (V) ..... :		—
Leakage current between:		**I (mA)**	**Max. allowed I (mA)**
Live parts to earthing terminal		0.120mA	0.75mA
Supplementary information:			

16.3	TABLE: Dielectric strength		P
Test voltage applied between:		**Test potential applied (V)**	**Breakdown / flashover (Yes/No)**
Live parts to earthing terminal		1250V	No
Supplementary information:			

17	TABLE: Overload protection		N/A
Thermocouple locations:		**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:		

17	TABLE: Overload protection, resistance method		N/A
	Test voltage (V) ..... :		—
	Ambient, t1 (°C) ..... :		—
	Ambient, t2 (°C) ..... :		—

Temperature of winding:	R1 (Ω)	R2 (Ω)	Δ T (K)	T (°C)	Max. T (°C)
Supplementary information:					

19	Abnormal operation conditions		P
Operational characteristics	**YES/NO**	**Operational conditions**	
Are there electronic circuits to control the appliance operation?	No	-	
Are there “off” or “stand-by” position?	No	-	
The unintended operation of the appliance results in dangerous malfunction?	No	-	

Sub-clause	Operating conditions description	Test results description	PEC description	EMP 19.11.4	Software type required	19.11.3 PEC	Final result
19.2	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.3	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.4	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.5	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.6	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.7	Lock rotor	No harzard	N.A	N.A	N.A	N.A	N.A

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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	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.11.4.8	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.10X	N.A	N.A	N.A	N.A	N.A	N.A	N.A
Supplementary information:							

19.101 to 19.105	**TABLE: Abnormal operation, locked rotor test**		**P**
	Test voltage (V)..... :	240 V	—
	Starting control device ..... :		—
	Protection system (1), if present ..... :		—
	Protection system (2)..... :		—
	Start capacitor ..... :		—
	Run capacitor..... :		—
	Cooling; (static); (fan-m3/h); (oil);..... :		—

19.101, 19.104	**Self-resetting**				**Non-self-resetting**
Rated voltage	**Vn max (V)**			**Vn min (V)**	**Vn (V)**
	After 72 h	**After 288 h**	**After 360 h**	**After 363 h**	**After 50 cycles**
Room temperature (°C) (20 ± 5°C)					
Electric strength (see 13.3)					
Leakage current (mA) (see 16.2)					
Housing temper. (°C) (≤ 150°C)					
Supplementary information:					

19.102, 19.104	**After 3 h or steady condition**		**After 3 h or steady condition**	
	With start capacitor open-circuited	**With start capacitor short-circuited**	**With run capacitor open-circuited**	**With run capacitor short-circuited**

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Room temperature (°C) (20 ± 5°C)				
Electric strength (see 13.3)				
Leakage current (mA) (see 16.2)				
Housing temperature (°C) (≤ 150°C)				
Supplementary information:				

19.103, 19.104	**Self-resetting**	**Non-self-resetting**
One phase disconnected (3-phases Scroll Compressor at max Vn)	**3 h or steady condition**	**1 operation**
Room temperature (°C) (20 ± 5°C)		
Electric strength (see 13.3)		
Leakage current (mA) (see 16.2)		
Housing temper. (°C) (≤ 150°C)		
Supplementary information:		

19.105	**Self-resetting**	**Non-self-resetting**
Protection against primary single-phase failure (3-phases Scroll Compressor at max Vn)	**24 h or steady condition**	**1 operation**
Room temperature (°C) (20 ± 5°C)		
Electric strength (see 13.3)		
Leakage current (mA) (see 16.2)		
Housing temper. (°C) (≤ 150°C)		
Windings not damaged		
Supplementary information:		

AA	**TABLE: running and overload tests**		N/A
	Starting control device:		—
	Protection system (1), if present:		—
	Protection system (2):		—
	Start capacitor:		—
	Run capacitor:		—
	Cooling; (static); (fan-m^3/h); (oil);:		—

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Clause	Requirement + Test	Result - Remark	Verdict

AA.1	**TABLE: running test**		N/A
	R1 main winding (Ω) at t1 (°C):		—
	R1 start winding (Ω) at t1 (°C):		—

Electric strength (16.3)			—
AA.1 Test Options	**AA.1 – Option 1**		**AA.1 – Option 2**
Voltage (V)	**Vn (max. cooling)**	**Vn (min. cooling)**	**Vn (max load - max. cooling)**
Evaporation (°C)			
Condensation °C)			
Return gas (°C)			
Room (°C)			
Protection system operates (Yes/No)			
Optional (F=fan / S=static)			
Working time (≥ 2 h)			—
Correct working conditions			—
Supplementary information:			

AA.2	**TABLE: overload test**				N/A
	R1 main winding (Ω) at t1 (°C):				—
	R1 start winding (Ω) at t1 (°C):				—

		AA.2 – Test 1		**AA.2 – Test 2**	
Voltage (V)		**1,06 Vn (max. cooling)**	**1,06 Vn (min. cooling)**	**0,94 Vn (max. cooling)**	**0,94 Vn (min. cooling)**
Evaporation (°C)	—				
Condensation °C)	—				
Return gas (°C)	—				
Room (°C)	—				
Part	***Allowed***				

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Housing (°C)	**≤ 150°C**				
Electronic control system (K)					
Start relay winding (K)					
PTC housing (K)					
Start capacitor surface (K)					
Run capacitor surface (K)					
Terminal block terminals (K)					
Earthing terminal (K)					
Protector cable (K)					
Internal wiring (K)					
R2 main winding (Ω)	**—**				
R2 start winding (Ω)	**—**				
T2 main winding (°C)	**≤ 160°C**				
T2 start winding (°C)	**≤ 160°C**				
Protection system operates	**Yes/No**				
Optional (F=fan / S=static)	**F/S**				
Supplementary information:					

AA.3	**TABLE: overload test**					N/A
	R1 main winding (Ω) at t1 (°C):					—
	R1 start winding (Ω) at t1 (°C):					—
		AA.3 – Test 3				
Voltage (V)		**0,85 Vn (max. cooling)**	**0,85 Vn (min. cooling)**	**0,xx Vn (max. cooling)**	**0,xx Vn (min. cooling)**	
Evaporation (°C)	**—**					
Condensation °C)	**—**					
Return gas (°C)	**—**					
Room (°C)	**—**					
Part	***Allowed***					
Housing (°C)	**≤ 150°C**					

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Clause	Requirement + Test	Result - Remark	Verdict

Electronic control system (K)					
Start relay winding (K)					
PTC housing (K)					
Start capacitor surface (K)					
Run capacitor surface (K)					
Terminal block terminals (K)					
Earthing terminal (K)					
Protector cable (K)					
Internal wiring (K)					
External wiring (supply cord) (K)					
R2 main winding (Ω)	**—**				
R2 start winding (Ω)	**—**				
T2 main winding (°C)	**≤ 160°C**				
T2 start winding (°C)	**≤ 160°C**				
Protection system operates	**Yes/No**				
Stalling and reaching of steady conditions	**Yes/No**				
Optional (F=fan / S=static)	**F/S**				
Supplementary information:					

AA.4	**TABLE: overload test**		N/A
	R1 main winding (Ω) at t1 (°C):		—
	R1 start winding (Ω) at t1 (°C):		—

		AA.4 – Test 4	**AA.4 – Test 5**
Voltage (V)		**Vn (max load - max. cooling)**	**Vn (min load - max. cooling)**
Evaporation (°C)	**—**		
Condensation °C)	**—**		
Return gas (°C)	**—**		
Room (°C)	**—**		
Part	***Allowed***		

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Clause	Requirement + Test	Result - Remark	Verdict

Housing (°C)	**≤ 150°C**		
Electronic control system (K)			
Start relay winding (K)			
PTC housing (K)			
Start capacitor surface (K)			
Run capacitor surface (K)			
Terminal block terminals (K)			
Earthing terminal (K)			
Protector cable (K)			
Internal wiring (K)			
External wiring (supply cord) (K)			
R2 main winding (Ω)	**—**		
R2 start winding (Ω)	**—**		
T2 main winding (°C)	**≤ 160°C**		
T2 start winding (°C)	**≤ 160°C**		
Protection system operates	**Yes/No**		
Speed reduction	**Yes/No (a)**		
Optional (F=fan / S=static)	**F/S**		
Supplementary information: **(a) If "Yes," the tests of Clause AA.5 are performed at the reduced speed.**			

AA.4	**TABLE: overload test**		**N/A**
	R1 main winding (Ω) at t1 (°C).....:		—
	R1 start winding (Ω) at t1 (°C).....:		—

		AA.4 – Test 6	**AA.4 – Test 7**
Voltage (V)		**Vn (max load - min. cooling)**	**Vn (min load - min. cooling)**
Evaporation (°C)	—		
Condensation °C)	—		
Return gas (°C)	—		

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Clause	Requirement + Test	Result - Remark	Verdict

Room (°C)	**—**		
Part	**Allowed**		
Housing (°C)	**≤ 150°C**		
Electronic control system (K)			
Start relay winding (K)			
PTC housing (K)			
Start capacitor surface (K)			
Run capacitor surface (K)			
Terminal block terminals (K)			
Earthing terminal (K)			
Protector cable (K)			
Internal wiring (K)			
External wiring (supply cord) (K)			
R2 main winding (Ω)	**—**		
R2 start winding (Ω)	**—**		
T2 main winding (°C)	**≤ 160°C**		
T2 start winding (°C)	**≤ 160°C**		
Protection system operates	**Yes/No**		
Speed reduction	**Yes/No (a)**		
Optional (F=fan / S=static)	**F/S**		
Supplementary information: **(a) If "Yes," the tests of Clause AA.5 are performed at the reduced speed.**			

AA.5	**TABLE: overload test (with reduced speed)**			N/A
	R1 main winding (Ω) at t1 (°C):			—
	R1 start winding (Ω) at t1 (°C):			—
			AA.5 – Test ..	**AA.5 – Test ..**
Voltage (V)			**Vn (max/min. load - max./min. cooling)**	**Vn (max/min. load - max./min. cooling)**
Evaporation (°C)		**—**		

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Clause	Requirement + Test	Result - Remark	Verdict

Condensation °C)	**—**		(+ 5 K)
Return gas (°C)	**—**		
Room (°C)	**—**		
Part	***Allowed***		
Housing (°C)	**≤ 150°C**		
Electronic control system (K)			
Start relay winding (K)			
PTC housing (K)			
Start capacitor surface (K)			
Run capacitor surface (K)			
Terminal block terminals (K)			
Earthing terminal (K)			
Protector cable (K)			
Internal wiring (K)			
External wiring (supply cord) (K)			
R2 main winding (Ω)	**—**		
R2 start winding (Ω)	**—**		
T2 main winding (°C)	**≤ 160°C**		
T2 start winding (°C)	**≤ 160°C**		
Protection system operates	**Yes/No**		
Stalling and reaching of steady conditions	**Yes/No**		
Optional (F=fan / S=static)	**F/S**		
Supplementary information:			

24.1	TABLE: Critical components information				P
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**

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Clause	Requirement + Test	Result - Remark	Verdict

Plug	Lesco Manufacturing (Pty) Ltd	SABS 164-1	16 A, 250 V	SANS 1489-2	SABS 11205/17568
Supply cord	Dongguan Jinhui Electric Co., Ltd	H05VV-F	3×1.0 mm^2	EN 50525-2-11	VDE 40024362
Internal wire	SHENZHEN DINGYU ELECTRICAL TECHNOLOGY CO LTD	1007	80 deg C, 300 Vac	UL 758	UL E365423
Motor					
Switch	Yueqing Weite Electronic Co., Ltd.	KCD3	250 V, 6 A, T105	EN 61058-1	VDE 40029666
Plastic enclosure	Sabic Innovative Plastics Us	V3504	V-0, 120°C, Min. 2.2mm	UL 94, UL 746	UL E45587
Supplementary information: [1]) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

28.1	**TABLE: Threaded part torque test**		**P**
Threaded part identification:	**Diameter of thread (mm)**	**Column number (I, II, or III)**	**Applied torque (Nm)**
Fixed the enclosure	3.3 mm	II	0.8 Nm
Supplementary information:			

29.1	**TABLE: Clearances**						P
	Overvoltage category .... :		II				—
		Type of insulation:					
Rated impulse voltage (V):	**Min. cl (mm)**	**Basic (mm)**	**Supplementary (mm)**	**Reinforced (mm)**	**Functional (mm)**	**Verdict / Remark**	
330	0,2* / 0,5 / 0,8**	-	-	-	-	N/A	
500	0,2* / 0,5 / 0,8**	-	-	-	-	N/A	
800	0,2* / 0,5 / 0,8**	-	-	-	-	N/A	
1 500	0,5 / 0,8** / 1,0***	-	-	-	-	N/A	

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2 500	**1,5** / 2,0***	>1.5	-	-	-	P
4 000	**3,0** / 3,5***	-	-	>3.0	-	P
6 000	5,5 / 6,0***	-	-	-	-	N/A
8 000	8,0 / 8,5***	-	-	-	-	N/A
10 000	11,0 / 11,5***	-	-	-	-	N/A

Supplementary information:

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

29.2	TABLE: Distance Through Insulation Measurements			N/A
Distance through insulation di at/of:	**U r.m.s. (V)**	**Test voltage (V)**	**Required di (mm)**	**di (mm)**

Supplementary information:

30.1	TABLE: Ball Pressure Test of Thermoplastics			N/A
Allowed impression diameter (mm) ..... :				—
Object/ Part No./ Material	**Manufacturer/ trademark**	**Test temperature (°C)**	**Impression diameter (mm)**	

Supplementary information:

30.2	TABLE: Resistance to heat and fire - Glow wire tests							N/A
Object/ Part No./ Material	**Manufacturer/ trademark**	**Glow wire test (GWT); (°C)**						**Verdict**
		550	**650**		**750**		**850**	
			te	**ti**	**te**	**ti**		

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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**	
The test specimen passed the glow wire test (GWT) with no ignition [(te – ti) ≤ 2s] (Yes/No) .. :								
If no, then surrounding parts passed the needle-flame test of annex E (Yes/No)..... :								
The test specimen passed the test by virtue of most of the flaming material being withdrawn with the glow-wire (Yes/No)? ..... :								
Ignition of the specified layer placed underneath the test specimen (Yes/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)**				**N/A**
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**
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					

Attachment No.2 **Product Photos**

Details of: Overview for model 9GRW-4

- End of test report -