



Ref. Certif. No.

JPTUV-030643-M3

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST  
CERTIFICATES FOR ELECTRICAL EQUIPMENT  
(IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE  
CERTIFICATS D'ESSAIS DES EQUIPEMENTS  
ELECTRIQUES (IECEE) METHODE OC

## CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product  
Produit

Split Type Air Conditioner Outdoor Unit

Name and address of the applicant  
Nom et adresse du demandeur

ACE S.A.S.  
1 bis Avenue du 8 mai 1945  
Saint Quentin en Yvelines, 78284 Guyancourt Cedex, France

Name and address of the manufacturer  
Nom et adresse du fabricant

ACE S.A.S.  
1 bis Avenue du 8 mai 1945  
Saint Quentin en Yvelines, 78284 Guyancourt Cedex, France

Name and address of the factory  
Nom et adresse de l'usine

See additional page(s)

Rating and principal characteristics  
Valeurs nominales et caractéristiques principales

1) AC 220-240V, 50Hz; 2) AC 220-240V, 50/60Hz; Class I  
For power input, refer to the test report.  
IP24 (Outdoor unit only); Refrigerant: R410A

Trade mark (if any)  
Marque de fabrique (si elle existe)

Airwell

Model/type Ref.  
Ref. de type

1) DCI 25 R410A, YBD 007, DCI 35 R410A, DCI 50 R410A  
DCI 60 R410A, DCI 72Z R410A, YBD 024, YVD 024  
DCI 80Z R410A, YBD 030  
2) YBD 018, YVD 018, YBD 022

Additional information (if necessary)  
Information complémentaire (si nécessaire)

For model differences, refer to the test report.  
Re-issue of JPTUV-030643-M2 dated 22.11.2010,  
due to third modification.

A sample of the product was tested and found  
to be in conformity with  
Un échantillon de ce produit a été essayé et a été  
considéré conforme à la

IEC 60335-2-40:2002 + A1 + A2  
IEC 60335-1:2001 + A1 + A2

As shown in the Test Report Ref. No. which forms part  
of this Certificate  
Comme indiqué dans le Rapport d'essais numéro de  
référence qui constitue une partie de ce Certificat

16021397 004

This CB Test Certificate is issued by the National Certification Body  
Ce Certificat d'essai OC est établi par l'Organisme National de Certification



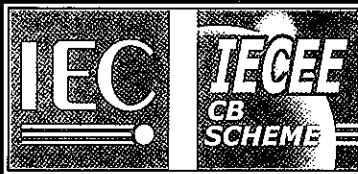
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Date: 11.05.2011

Signature:

Dipl. Ing. (FH) T. Zimmer



Ref. Certif. No.

JPTUV-030643-M3

PAGE 2 OF 2

1. Airwell Air-Conditioning  
(China) Co., Ltd.  
2 Wuhe Avenue S.  
Bantian, Long Gang  
Shenzhen, Guangdong, P.R. China
2. Electra Air-conditioning  
Industries 2006 Ltd.  
Sapir 1, Rishon Lezion  
75704  
Israel

**Additional information (if necessary)**  
**Information complémentaire (si nécessaire)**

Date: 11.05.2011

Signature:



Dipl. Ing. (FH) T. Zimmer



Test Report issued under the responsibility of:



<b>TEST REPORT</b> <b>IEC 60335-2-40 / EN 60335-2-40</b> <b>Safety of household and similar electrical appliances</b> <b>Part 2: Particular requirements for electrical heat pumps, air conditioners and dehumidifier</b>	
Report Reference No.....	16021397 004
Date of issue.....	2011.05.10
Total number of pages.....	17 pages
CB Testing Laboratory.....	TÜV Rheinland (Guangdong) Ltd.
Address.....	No.199 Kezhu Road, Guangzhou Science City, 510663 Guangzhou, CHINA
Applicant's name.....	ACE S.A.S.
Address.....	1 bis Avenue du 8 mai 1945, Saint Quentin en Yvelines, 78284 Guyancourt Cedex, France
<b>Test specification:</b>	
Standard .....	<input checked="" type="checkbox"/> IEC 60335-2-40:2002 (Edition 4) + A1:2005 + A2:2005 with <input checked="" type="checkbox"/> IEC 60335-1:2001 (incl. Corrigendum 1:2002) + A1:2004 <input type="checkbox"/> EN 60335-2-40:2003 + A11:2004 + A12: 2005 + A1:2006 with <input type="checkbox"/> EN 60335-1:2002 + A11:2004 + A1:2004 and <input type="checkbox"/> EN 50366:2003
Test procedure .....	CB
Non-standard test method.....	N/A
Test Report Form No.....	IECEN60335_2_40B
Test Report Form(s) Originator .....	VDE
Master TRF.....	Dated 2006-11
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<b>This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.</b>	
If this Test Report Form is used by non-CCA members, the CIG logo and the reference to the CCA Procedure shall be removed.	
<b>This report is not valid as a CCA Test Report unless signed by an approved CCA Testing Laboratory and appended to a CCA Test Certificate issued by an NCB in accordance with CCA</b>	

<b>Test item description.....</b>	Split Type Air Conditioner Outdoor Unit	
Trade Mark .....	Airwell	
Manufacturer.....	Same as applicant	
Model/Type reference.....	See model list on page 5	
Ratings.....	220-240V~ 50Hz	
	Rated input: see model list on page 5	
	Refrigerant: R410A	
<b>Testing procedure and testing location:</b>		
<input checked="" type="checkbox"/> <b>CB Testing Laboratory:</b>	TÜV Rheinland (Guangdong) Ltd.	
Testing location/ address.....	No.199 Kezhu Road, Guangzhou Science City, 510663 Guangzhou, CHINA	
<input type="checkbox"/> <b>Associated CB Laboratory:</b>	N/A	
Testing location/ address .....	N/A	
Tested by (name + signature).....	Jeffery Luo	
Approved by (+ signature).....	Brenda Fan	
<input type="checkbox"/> Testing procedure: TMP	N/A	
Tested by (name + signature) .....	N/A	
Approved by (+ signature) .....	N/A	
Testing location/ address.....	N/A	
<input type="checkbox"/> Testing procedure: WMT	N/A	
Tested by (name + signature) .....	N/A	
Witnessed by (+ signature).....	N/A	
Approved by (+ signature) .....	N/A	
Testing location/ address.....	N/A	
<input type="checkbox"/> Testing procedure: SMT	N/A	
Tested by (name + signature) .....	N/A	
Approved by (+ signature) .....	N/A	
Supervised by (+ signature).....	N/A	
Testing location/ address.....	N/A	
<input type="checkbox"/> Testing procedure: RMT	N/A	
Tested by (name + signature) .....	N/A	
Approved by (+ signature) .....	N/A	
Supervised by (+ signature).....	N/A	
Testing location/ address.....	N/A	

**Summary of testing:****Tests performed (name of test and test clause):**

1. The appliances were tested according to IEC 60335-1 and IEC 60335-2-40.
2. For modification description on page 5, clause 8.1.2, 13, 16, 19.4, 24.1, 29 and 30 were re-evaluated in this report. For further information can refer to original report.
3. The test sample was prototype sample without serial numbers.
4. The requirement of IEC 60335-1:2001/A2:2006 was considered in original report.

**Testing location:**

TÜV Rheinland (Guangdong) Ltd.  
Unit 101, No. 7 Caipin Road, Guangzhou Science City, Guangzhou, 510663

**Summary of compliance with National Differences:**

National difference was not considered in this report.

<b>Test item particulars</b> .....:	
Classification of installation and use.....:	Class I, split type air conditioner outdoor unit
Supply Connection.....:	Air conditioner outdoor unit with interconnection cable connecting to indoor unit and supplied by fixed wiring.
.....:	
.....:	

<b>Possible test case verdicts:</b>	
- 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)

<b>Testing</b> .....	
Date of receipt of test item..... :	2011.02.25
Date (s) of performance of tests..... :	2011.05.01—2011.05.10

**General remarks:**

The test results presented in this report relate only to the object tested.  
 This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.  
 "(See Enclosure #)" refers to additional information appended to the report.  
 "(See appended table)" refers to a table appended to the report.  
**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 is used as the decimal separator.

**Note:** The Requirements of IEC 60335-2-40 and EN 60335-2-40 in clause 15 are by identical content different numbered. For better handling the column "Clause" contains an additional Information "IEC" or "EN".

**National difference was not considered in this report.**

**No EU group differences and EU special national differences have been considered in this report.**

**Construction of all alternative components(in table 24.1) were considered in this report.**

**This report should be used in conjunction with attached photo document (5 pages).**

Locations of factories:  
 Factory 1: Airwell Air-Conditioning (China) Co., Ltd.  
 Address: 2 Wuhe Avenue S., Bantian, Long Gang, Shenzhen, Guangdong, P.R. China  
 Factory 2: Electra Air-conditioning Industries 2006 Ltd.  
 Address: Sapir 1, Rishon Lezion, 75704, Israel

**History of amendments and modifications:**

Ref No. 16021397 001 dated 2010.01.27 (original test report)  
 Ref No. 16021397 002 dated 2010.07.07 (current report for additional new models for report 16021397 001)  
 Ref No. 16021397 003 dated 2010.11.19 (current report for additional new model for report 16021397 001)  
 Ref No. 16021397 004 dated 2011.05.10 (current report for alternate components and re-evaluated the clause 8.1.2, 13, 16, 19.4, 30)

**General product information:**

- The appliances are air conditioner outdoor unit driven by inverter compressor.
- The unit is supplied by single phase (AC 220-240V) from supply mains, with permanently fixed wiring.
- The interconnection cable and power supply cord are not supplied by the manufacture. They will be provided during final installation. The supply cord and the connecting cable between indoor and outdoor unit shall be an approved polychloroprene sheathed flexible cord.

**There are two issues in this report, see below:**
**Issue 1. Re-evaluated the clause 8.1.2, 13, 16, 19.4, 30 based on original report**
**Issue 2. Alternate components for issued models in below model list, see below for details:**

- Alternate compressor for model A9, A10, A11, A12, the alternate compressor is identical with original compressor except different angle between the liquid storage tank and the support of the compressor;
- Alternate high pressure for model A5, A6, A9, A10, A11, A12;
- Modified the wrong winding class for motor YDK35-6Y-2;
- Alternate controller 467300355R, IPM for model A5, A6, A13, the alternate controller 467300355R is identical with the controller 467300233R except PCB layout and IPM(power module);
- Alternate inductance for controller, alternate PCB material for all controller board.

**Model list:**

Code	Model name	Rated voltage	Rated power input	Refrigerant/mass	Report
A1	DCI 25 R410A	220-240V 50Hz	1600W	R410A/1100g	16021397 001
A2	YBD 007	220-240V 50Hz	1600W	R410A/1100g	16021397 002
A3	DCI 35 R410A	220-240V 50Hz	1800W	R410A/1200g	16021397 001
A4	DCI 50 R410A	220-240V 50Hz	2500W	R410A/1500g	16021397 001
A5	YBD 018	220-240V 50/60Hz	2400W	R410A/1260g	16021397 002
A6	YVD 018	220-240V 50/60Hz	2400W	R410A/1200g	16021397 002
A7	DCI 60 R410A	220-240V 50Hz	2680W	R410A/1650g	16021397 001
A8	DCI 72Z R410A	220-240V 50Hz	3200W	R410A/2300g	16021397 001
A9	YBD 024	220-240V 50Hz	3200W	R410A/2300g	16021397 002
A10	YVD 024	220-240V 50Hz	3200W	R410A/2150g	16021397 002
A11	DCI 80Z R410A	220-240V 50Hz	3200W	R410A/2500g	16021397 001
A12	YBD 030	220-240V 50Hz	3200W	R410A/2500g	16021397 002
A13	YBD 022	220-240V 50/60Hz	2600W	R410A/1600g	16021397 003

**Matching Table:**

The outdoor unit can be connected with anyone of indoor unit and the possible combination shown as below:

ODU Model	DCI 25 R410A/ YBD 007	DCI 35 R410A	DCI 50 R410A/ YBD 018	DCI 60 R410A/ YBD 022	DCI 72Z R410A/ YBD 024	DCI 80Z R410A/ YBD 030
IDU Model	WNG 25 DCI	WNG 35 DCI	WNG 50 DCI	WNG 60 DCI	WNG 72 DCI	WNG 80 DCI
	LEX 25 DCI	LEX 35 DCI	LEX 50 DCI	LEX 60 DCI	LEX 72 DCI	----
	----	----	HAD 50 DCI	HAD 60 DCI	HAD 72 DCI	----
	----	----	Delta 50 DCI	----	----	----
	K 25 DCI	K 35 DCI	K 50 DCI	KN 60 DCI	KN 72 DCI	KN 80 DCI
	----	----	----	----	NKN 72 DCI	NKN 80 DCI
	CN 25 DCI	CN 35 DCI	CN 50 DCI	CN 60 DCI	CN 70 DCI	----
	PXD 25 DCI	PXD 35 DCI	PXD 50 DCI	PXD 60 DCI	PXD 72 DCI	PXD 80 DCI
	LSN 25 DCI	LSN 35 DCI	LSN 50 DCI	LSN 60 DCI	LSN 72 DCI	----
	----	LS 35 DCI	----	----	----	----
	TOP 25 DCI	TOP 35 DCI	----	----	----	----
	----	----	DNG 50 DCI	DNG 60 DCI	DNG 72 DCI	DNG 80 DCI



IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
8	PROTECTION AGAINST ACCESS TO LIVE PARTS		P
8.1.2	Use of test probe 13 of IEC 61032 through openings in class 0 appliances and class II appliances/ constructions: no contact with live parts	Class II construction is applied.	P
	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts		P

13	LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE		P
13.1	Leakage current not excessive and electric strength adequate		P
	Heating appliances operated at 1.15 times rated power input .....	Not heating appliance	N/A
	Motor-operated appliances and combined appliances supplied at 1.06 times rated voltage...	1,06x240=254,4V	P
	Protective impedance and radio interference filters disconnected before carrying out the tests		N/A
13.2	Leakage current measured by means of the circuit described in figure 4 of IEC 60990		P
	Leakage current measurements	(see appended table)	P
13.3	The appliance is disconnected from the supply and the insulation is immediately subjected to a voltage having a frequency of 50 Hz or 60 Hz for 1 min, in accordance with IEC 61180-1. (IEC/EN 60335-1/A1)		P
	The high-voltage source used for the test is to be capable of supplying a short circuit current $I_s$ between the output terminals after the output voltage has been adjusted to the appropriate test voltage.(IEC/EN 60335-1/A1)	(see appended table)	P
	The overload release of the circuit is not to be operated by any current below the tripping current $I_r$ . The values of $I_s$ and $I_r$ are given in Table 5 for various high-voltage sources. (IEC/EN 60335-1/A1)		P
	No breakdown during the tests		P

16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		P
16.1	Leakage current not excessive and electric strength adequate		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Protective impedance disconnected from live parts before carrying out the tests		N/A
16.2	Single-phase appliances: test voltage 1.06 times rated voltage .....	1,06X240=254,4V	P
	Three-phase appliances: test voltage 1.06 times rated voltage divided by $\sqrt{3}$ .....	Single phase	N/A
	Leakage current measurements	(see appended table)	P
16.3	Electric strength tests according to table 7	(see appended table)	P
	No breakdown during the tests		P

19	ABNORMAL OPERATION		P
19.4	Test of three-phase motors operated under the conditions of Cl. 11 with one phase disconnected until steady conditions (IEC/EN 60335-2-40)	The appliance stopped because of logical function.	P

24	COMPONENTS		P
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components	(see appended table)	P
	Components not tested and found to comply with relevant IEC standard for the number of cycles specified are tested in accordance with 24.1.1 to 24.1.6		N/A
	Components not tested and found to comply with relevant IEC standard, components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance		P
	Motor-compressors not tested according to IEC 60335-2-34 (not necessary to meet all requirements of IEC 60335-2-34) (IEC/EN 60335-2-40)	Approved compressor	N/A

29	CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION		P
	Clearances, creepage distances and solid insulation withstand electrical stress		P
	For coatings used on printed circuits boards to protect the microenvironment (Type A) or to provide basic insulation (Type B), annex J applies (IEC/EN 60335-1/A1)		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	The microenvironment is pollution degree 1 under Type A coating (IEC/EN 60335-1/A1)		N/A
	No creepage distance or clearance requirements under Type B coating (IEC/EN 60335-1/A1)		N/A
	For motor-compressor complies with IEC 60335-2-34, parts related not checked (IEC/EN 60335-2-40)		N/A
	For motor-compressor not complying with IEC 60335-2-34, additions and modifications as specified (IEC/EN 60335-2-40)	Approved compressor	N/A
29.1	Clearances not less than the values specified in Table 16, taking into account the rated impulse voltage for the overvoltage categories of Table 15, unless (IEC/EN 60335-1/A1)	(See appended table)	P
	for basic insulation and functional insulation, they comply with the impulse voltage test of clause 14 (IEC/EN 60335-1/A1)	The impulse voltage in clause 14 is not applicable.	N/A
	However, if construction is affected by wear, distortion, movement of the parts or during assembly, the clearances for rated impulse voltages of 1500V and above are increased by 0.5mm and the impulse voltage test is not applicable (IEC/EN 60335-1/A1)		P
	Impulse voltage test not applicable:	(IEC/EN 60335-1/A1)	N/A
	- when the microenvironment is pollution degree 3 (IEC/EN 60335-1/A1)		N/A
	- for basic insulation of class 0 and class 0I appliances (IEC/EN 60335-1/A1)		N/A
	Appliances are in overvoltage category II		P
	Compliance is checked by inspection and measurements as specified		P
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage		N/A
	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1mm if the microenvironment is pollution degree 1		N/A
	Lacquered conductors of windings considered to be bare conductors (IEC/EN 60335-1/A1)		N/A
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
29.1.3	Clearances of reinforced insulation not less than those specified for basic insulation in table 16, but using the next higher step for rated impulse voltage		N/A
29.1.4	For functional insulation, the values of table 16 are applicable, unless	(See appended table) All functional insulation fulfills table 16	P
	the appliance complies with clause 19 with the functional insulation short-circuited		P
	Lacquered conductors of windings considered to be bare conductors (IEC/EN 60335-1/A1)		P
	However, clearances at crossover points are not measured		N/A
	Clearance between surfaces of PTC heating elements may be reduced to 1mm		P
	Lacquered conductors of windings assumed to be bare conductors, but the clearances specified in table 16 are reduced by 0.5mm for rated impulse voltages of at least 1500V		P
29.1.5	Appliances having higher working voltage than rated voltage, the voltage used for determining clearances from table 16 is the sum of the rated impulse voltage and the difference between the peak value of the working voltage and the peak value of the rated voltage		P
	If the secondary winding of a step-down transformer is earthed, or if there is an earthed screen between the primary and secondary windings, clearances of basic insulation on the secondary side not less than those specified in table 16, but using the next lower step for rated impulse voltage		N/A
	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation based on the working voltage used as the rated voltage in table 15		P
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree		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
	Compliance is checked by inspection and measurements as specified		P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Insulation located in airflow, pollution degree 3 unless (IEC/EN 60335-2-40)		N/A
	Insulation enclosed or located so that unlikely to be exposed to pollution due to normal use (IEC/EN 60335-2-40)		P
29.2.1	Creepage distances of basic insulation not less than specified in table 17		N/A
	For pollution degree 1, creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14		N/A
29.2.2	Creepage distances of supplementary insulation at least as specified for basic insulation in table 17		N/A
29.2.3	Creepage distances of reinforced insulation at least double as specified for basic insulation in table 17		N/A
29.2.4	Creepage distances of functional insulation not less than specified in table 18	(See appended table)	P
	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited		N/A
29.3	Supplementary and reinforced insulation having adequate thickness, or a sufficient number of layers, to withstand the electrical stresses (IEC/EN 60335-1/A1)		N/A
	Compliance checked by:		N/A
	- measurement, in accordance with 29.3.1, or		N/A
	- an electric strength test in accordance with 29.3.2, or		N/A
	- an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3		N/A
29.3.1	Supplementary insulation having a thickness of at least 1mm (IEC/EN 60335-1/A1)		N/A
	Reinforced insulation having a thickness of at least 2mm (IEC/EN 60335-1/A1)		N/A
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation (IEC/EN 60335-1/A1)		N/A
	Supplementary insulation consisting of at least 2 layers (IEC/EN 60335-1/A1)		N/A
	Reinforced insulation consisting of at least 3 layers		N/A

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by (IEC/EN 60335-1/A1)		N/A
	the electric strength of 16.3 (IEC/EN 60335-1/A1)		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 (IEC/EN 60335-1/A1)		N/A

30	RESISTANCE TO HEAT AND FIRE		P
30.1	External parts of non-metallic material,	See appended table.	P
	parts supporting live parts, and		P
	thermoplastic material providing supplementary or reinforced insulation,		P
	sufficiently resistant to heat		P
	Ball-pressure test according to IEC 60695-10-2		P
	External parts: at 40 °C plus the maximum temperature rise determined during the test of clause 11, or at 75 °C, whichever is the higher; temperature (°C).....	See appended table.	P
	Parts supporting live parts: 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) .....		P
	Parts of thermoplastic material providing supplementary or reinforced insulation, 25°C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C).....		N/A
30.2	Relevant parts of non-metallic material adequately resistant to ignition and spread of fire		P
30.2.1	Glow-wire test of IEC 60695-2-11 at 550 °C, unless	(See appended table)	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 meet the requirements in ISO9772 for category HBF material (IEC/EN 60335-1/A1)		N/A
30.2.2	Not applicable (IEC/EN 60335-2-40)		N/A
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2	(See appended table)	P

IEC / EN 60335-2-40			
Clause	Requirement – Test	Result	Verdict
	Test not applicable to conditions as specified		P
30.2.3.1	Parts of insulating material supporting connections carrying a current exceeding 0.2A during normal operation, and		P
	parts of insulating material within a distance of 3mm,		P
	having a glow-wire flammability index of at least 850°C according to IEC 60695-2-12	(See appended table)	P
30.2.3.2	Parts of insulating material supporting current-carrying connections, and		P
	parts of insulating material within a distance of 3mm,		P
	subjected to glow-wire test of IEC 60695-2-11		P
	Test not carried out on material having a glow-wire ignition temperature according to IEC 60695-2-13 as specified		N/A
	Glow-wire test of IEC 60695-2-11, the temperature being:		P
	-750°C, for connections carrying a current exceeding 0,2A during normal operation	(See appended table)	P
	-650°C, for other connections		N/A
	Parts that during the test produce a flame persisting longer than 2 s, tested as specified	For terminal block and relay.	P
	If a flame persists longer than 2 s during the test, parts above the connection, as specified, subjected to the needle-flame test of annex E, unless	The above parts subjected to needle-flame test and passed.	P
	the material is classified as V-0 or V-1 according to IEC 60695-11-10	PCB is approved V-0 class	P
30.2.4	Base material of printed circuit boards subjected to needle-flame test of annex E		N/A
	Test not applicable to conditions as specified	PCB is approved V-0 class	P

13.2	TABLE: LEAKAGE CURRENT MEASUREMENTS AT OPERATING TEMPERATURE		P
Heating appliances: 1,15 times rated input (W) :		n.a.	-
Motor-operated and combined appliances: at 1,06 times rated voltage (V) :		1,06X240=254,4	-
Measured between:		Measured (mA)	Limit (mA)
L/N to earthed metal parts		0,366	3,5
L/N – enclosure plastic		0,034	0,25
Remark: all samples were tested and highest value was listed.			

13.3	TABLE: ELECTRICAL INSULATION AT OPERATING TEMPERATURE		P
Test voltage applied between:		Test voltage (V)	Result
L/N- earthed metal part		1000	No
L/N – enclosure plastic		3000	No
Remark: all samples were tested.			

16.2	TABLE: LEAKAGE CURRENT MEASUREMENTS		P
Heating appliances: 1,15 times rated input (W) :		n.a.	-
At 1,06 times rated voltage (V) .....		1,06X240=254,4	-
Measured between:		Measured (mA)	Limit (mA)
L/N to earthed metal parts		0,388	3,5
L/N – enclosure plastic		0,033	0,25
Remark: all the samples were tested and highest value was listed.			

16.3	TABLE: ELECTRIC STRENGTH TESTS		P
Test voltage applied between:		Test voltage (V)	Result
L/N- earthed metal parts		1250	No
L/N – enclosure plastic		3000	No
Remark: all the samples were tested.			

24.1	TABLE: components-outdoor unit					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity	
Remark 1: For thermal cut-outs, thermal links of compressors, fan motors and transformers which have been approved according to relevant IEC standards, the manufacturer, types and characters not listed in the CDF but should be in this scope authorized by original certification bodies.						
Remark 2: only show deviation components.						
Built-in components with windings: (motors, transformers, magnetic coils etc.)						



Compressor for A9, A10, A11, A12	SANYO	C-7RZ233H1A	Winding: 0.788Ω±5% Class: E	IEC 60335-2-34	TUV R 50020812
High Pressure Switch for A5, A6, A9, A10, A11, A12 C03528500	Wilspec	HR200-919-0001	120/240 VAC-375VA 24VAC-125VA 4.2/3.3MPa Cycle life:100,000	--	UL E196928
Alternate	Changzhou Match-well pressure control technique Co., Ltd.	YK-4.2/3.7	DC12V Off : 4.2MPa On : 3.7MPa cycle life:100,000	IEC 60730	VDE 40000571
Motor for A5, A6, A9, A10, A11, A12, A13 466100034R	Welling	YDK35-6Y-2	Main: 243Ω±10%; Aux: 248Ω±10% Class B	IEC 60335-2-40	Tested with appliance
Controller for A5, A6, A13	Airwell Air-conditioning (China) Co., Ltd.	467300355R	220-240V, 50/60Hz	IEC 60335-2-40	Test with appliance
IPM for 467300355R	Mitsubishi	PS21997-AST	600V, 30A	--	UL E80276
Inductance L101, L102 for controller 467300233R, 467300322R, 467300355R	Xinji	CH-305-030	25mΩ±10%(25°C); Class B	IEC 60335-2-40	Test with appliance

**PCB(base material) for all controller board**

PCB	Kingboard Laminates (Macao Commercial Offshore) Ltd	KB-2150/3150 /5150/6150/7150/6160	94V0; thickness: 1,65mm	IEC 60335-2-40	UL E123995
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29.1	TABLE: Clearances					P
	Overvoltage category ... :	II			—	
		Type of insulation:				
Rated impulse voltage (V):	Min. cl (mm)	Basic	Functional	Supplementary	Reinforced	Verdict / Remark
330	0,5	N/A	N/A	N/A	N/A	N/A
500	0,5	N/A	N/A	N/A	N/A	N/A

800	0,5	N/A	N/A	N/A	N/A	N/A
1 500	0,5	N/A	N/A	N/A	N/A	N/A
<b>2 500</b>	<b>1,5</b>	<b>1,5</b>	<b>1,5<sup>1)</sup></b>	<b>1,5</b>	N/A	<b>P</b>
4 000	3,0	N/A	N/A	N/A	N/A	N/A
6 000	5,5	N/A	N/A	N/A	N/A	N/A
8 000	8,0	N/A	N/A	N/A	N/A	N/A
10 000	11,0	N/A	N/A	N/A	N/A	N/A

**Remark:**

- Function<sup>1)</sup>: between different polarity on the PCB. Cl=3,0mm

Only considered for alternate controller.

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

Pollution degree 2 and material group IIIa/IIIb was applied.

30	TABLE: ball-pressure tests			P
Part	test temperature (°C)	Impression diameter (mm)	Limit (mm)	
PCB <sup>1)</sup>	125	0,6	2,0	
IPM module	125	1,3	2,0	
Transformer bobbin	125	1,0	2,0	
Terminal block	125	0,6	2,0	

Remark 1: the test was performed on all materials with different manufacturer and highest value was listed.

30.2	TABLE: resistance to heat, fire and tracking, glow-wire test							P
Part	Tracking test(V)		Glow-wire test (°C)					
	175	250	Test (°C)	Result				
				Ti=	Te=	Max height of flame	Ignition of tissue paper	Other observations
Terminal block	175	--	850	--	--	--	No	Not burning
Terminal block <sup>2)</sup>	175	--	750	1,54	13,32	40	No	--
IPM module	--	--	850	--	--	--	No	Not burning
IPM module	--	--	750	--	--	--	No	Not burning
Transformer bobbin	175	--	850	--	--	--	No	Not burning
Transformer bobbin	175	--	750	--	--	--	No	Not burning
PCB	175	--	850	--	--	--	No	Not burning
PCB <sup>1)</sup>	175	--	750	--	--	--	No	Not burning
Relay	--	--	850	--	--	--	No	Not burning
Relay <sup>2)</sup>	--	--	750	0,85	3,13	--	No	--
Capacitor	--	--	850	--	--	--	No	Not burning
Capacitor	--	--	750	--	--	--	No	Not burning

**Remark:**

Ti = the time between glow wire touched the material and the material ignited

Te = the time between glow wire touched the material and the flame extinguished

Remark 1: PCB test performed on all samples with different suppliers and the highest value was listed.

Remark 2: The above parts subjected to needle-flame test and passed.

30.2	TABLE: Needle flame test		P
Part	Application Time (s)	Verdict	
Internal wire	30	P	
Plactic cover	30	P	