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GB/T 4706.32-2024 / IEC 60335-2-40:2022

Replacing GB 4706.32-2012

**Safety of Household and Similar Electrical Appliances –
Part 32: Particular Requirements for Electrical Heat Pumps,
Air-Conditioners and Dehumidifiers**

家用和类似用途电器的安全 第 32 部分：热泵、空调器和除湿机的
特殊要求

(IEC 60335-2-40:2022, Household and Similar Electrical Appliances – Safety- Part 2-
40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and
Dehumidifiers, IDT)

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Table of Contents

Foreword	4
Introduction	8
1 Scope	9
2 Normative References	10
3 Terms and Definitions	13
4 General Requirement	22
5 General Conditions for the Tests	22
6 Classification	23
7 Marking and Instructions	24
8 Protection against Access to Live Parts	31
9 Starting of Motor-Operated Appliances	31
10 Power Input and Current	31
11 Heating	31
12 Void	35
13 Leakage Current and Electric Strength at Operating Temperature	35
14 Transient Over-Voltages	35
15 Moisture Resistance	36
16 Leakage Current and Electric Strength	37
17 Overload Protection of Transformers and Associated Circuits	37
18 Endurance	38
19 Abnormal Operation	38
20 Stability and Mechanical Hazards	45
21 Mechanical Strength	46
22 Construction	47
23 Internal Wiring	63
24 Components	63
25 Supply Connection and External Flexible Cords	65
26 Terminals for External Conductors	65
27 Provision for Earthing	65
28 Screws and Connections	66
29 Clearances, Creepage Distances and Solid Insulation	66
30 Resistance to Heat and Fire	66
31 Resistance to Rusting	68

Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 *Directives for Standardization – Part 1: Rules for the Structure and Drafting of Standardizing Documents*.

This Document is Part 32 of GB/T 4706 *Safety of Household and Similar Electrical Appliances*. GB/T 4706 has published the following parts:

- Part 1: General requirements;
- Part 2: Particular requirements for electric irons;
- ...
- Part 121: Particular requirements for professional ice-cream makers.

This Document replaced GB 4706.32-2012 *Household and Similar Electrical Appliances – Safety – Particular Requirements for Heat Pumps, Air-Conditioners and Dehumidifiers*. Compared with GB 4706.32-2012, the major technical changes of this Document are as follows besides structural adjustments and editorial modifications:

- Change the applicable voltage range of single-phase appliances (see Clause 1 of this Edition; Clause 1 of the 2012 Edition);
- Add some units; clarify that thermoelectric heat pumps, dehumidifiers with and without compressors are within the scope of the standard (see Clause 1 of this Edition);
- Add the provisions on the scope of refrigerants applicable to this Document (see Clause 1 of this Edition);
- Add more than 30 terms and definitions such as "particle foam material", "factory sealed single package unit", "pre-charged pipe sets", etc. (see 3.127~3.165 of this Edition);
- Delete the terms and definitions such as "comfort dehumidification", "process dehumidification", and "heat recovery dehumidification" (see 3.105~3.107 of the 2012 Edition);
- Add the refrigerant pipe length during testing (see 5.10 of this Edition);
- Change the flame symbol of flammable refrigerants; add the minimum room area symbol; add leakage monitoring devices, electric safety protection measures and other related instructions (see Clause 7 of this Edition; Clause 7 of the 2012 Edition);
- Add pressure symbols; add trans-critical refrigeration system related instructions (see Clause 7 of this Edition);

- Add UV-C germicidal lamp system requirements (see Clause 7 of this Edition);
- Add some unit instructions related requirements (see Clause 7 of this Edition);
- Add installation position requirements for panel or cover installation tests (see 8.1.5 of this Edition);
- Add testing procedures of the heating test (see Clause 11 of this Edition);
- Change the leakage current requirements for stationary Class I appliances (see Clauses 13 and 16 of this Edition; Clauses 13 and 16 of the 2012 Edition);
- Add related requirements for supplementary air heaters (see 19.104 of this Edition);
- Add abnormal tests for dehumidifiers (see 19.105 of this Edition);
- Add related requirements for particle foam materials (see 21.2 of this Edition);
- Add vibration tests during transportation of appliances using flammable refrigerants (see 21.101 of this Edition);
- Add conditions for arc or spark ignition sources to be considered as non-ignition sources (see 22.116 of this Edition);
- Change related requirements for hot surfaces (see 22.117 of this Edition; 22.117 of the 2012 Edition);
- Change related requirements for indoor mechanical joints (see 22.118 of this Edition; 22.118 of the 2012 Edition);
- Add related requirements for leakage monitoring system, refrigerant monitoring system, enhanced sealed refrigeration system, safety shut-off valve requirements (see 22.121~22.123, 22.125, 22.132 of this Edition);
- Add related requirements for some units (see 22.119, 22.120 of this Edition);
- Add UV-C germicidal lamp system requirements (see 22.126~22.130 of this Edition);
- Add related requirements for trans-critical refrigeration system (see 22.131 of this Edition);
- Added related requirements for particle foam material (see 22.133, 22.134 of this Edition);
- Add requirements to avoid the connection between lines and pipes (see Clause 23 of this Edition);
- Add related requirements for compressors, refrigerant detection systems, and pressure limiting devices for trans-critical refrigeration systems (see Clause 24 of this Edition);

Safety of Household and Similar Electrical Appliances – Part 32: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers

1 Scope

This clause of GB/T 4706.1-2024 is replaced by the following:

This Document specifies the safety requirements for household and similar heat pumps, air conditioners and dehumidifiers.

This Document deals with the safety of electric **heat pumps**, **sanitary hot water heat pumps** and **air conditioners**, incorporating motor-compressors as well as **hydronic fan coils units**, **dehumidifiers** (with or without motor-compressors), **thermoelectric heat pumps** and **partial units**. Their maximum **rated voltage** being no more than 300 V for single phase appliances and 600 V for multi-phase appliances.

Appliances not intended for normal household use but which nevertheless can be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms, are within the scope of this Document.

The appliances referenced above can consist of one or more factory-made assemblies. If provided in more than one assembly, the separate assemblies are used together, and they are based on the use of matched assemblies specified in the technical requirements of this Document.

NOTE 101: A definition of ‘motor-compressor’ is given in IEC 60335-2-34, which includes the statement that the term motor-compressor is used to designate either a hermetic motor-compressor or semi-hermetic motor-compressor.

NOTE 102: Requirements for containers intended for storage of the heated water included in **sanitary hot water heat pumps** are, in addition, covered by IEC 60335-2-21.

This Document does not take into account refrigerants other than group A1, A2L, A2 and A3 as defined by ISO 817. **Flammable refrigerants** are limited to those of a molar mass of more than or equal to 42 kg/kmol based on WCF (worst case formulation) as specified in ISO 817.

As far as practical, this Document deals with common hazards presented by appliances that are encountered in normal use and assumes that installation, servicing, decommissioning, and disposal are safely handled by competent persons and accidental release of refrigerants is

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