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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18837-2015

Replacing GB/T 18837-2002

Multi-connected air-condition(heat-pump)unit

多联式空调（热泵）机组

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1 Scope

GB/T 18837-2015 is the Chinese national standard on multi-connected air-condition(heat-pump)unit, in the field of energy and heat transfer engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 10 December 2015 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1

July 2016. Classification: ICS 27.200, CCS J73. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Standard specifies the terms and definitions, types, models and basic parameters, requirements, tests, inspection rules, labeling, packaging, transportation and storage of multi-connected air condition (heat pump) unit (hereinafter referred as the "unit"). This Standard is applicable to multi-connected air condition (heat pump) unit which uses A1 freezing medium as stipulated in GB/T 7778. For the unit and dual cooling circulation system and multiple cooling circulation system which use A2L freezing medium, this Standard is served as reference.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 191 Packaging - Pictorial marking for handling of goods

GB/T 2828.1 Sampling procedures for inspection by attributes - Part

1. Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection

GB/T 6388 Transport package shipping mark

GB/T 7778 Number designation and safety classification of refrigerants

GB 9237 Mechanical refrigerating systems Used for cooling and heating - Safety requirements

3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in JB/T 7249 and GB/T 17758 and as follows apply.

3.1 multi-split air condition (heat pump) unit A cooling circulation system that is constituted of one or many outdoor units connected to many direct evaporated indoor units of different types and capacities or of the same type and capacity that directly supplies the processed air to one or many areas.

3.2 Heat recovery multi-split air-condition (heat pump) unit A unit with different indoor units operating at heating and cooling modes at the same time. During the operation, the unit can recycle the heat of condensation of indoor unit operating in the cooling mode to the indoor unit operating in the heating mode.

3.3 Cooling (heating) capacity of indoor machine Indoor unit that discharges (liberates) the heat from an enclosed space, room or area in a unit time under the specified cooling (heating) capacity test conditions, expressed in W.

3.4 Maximum ordonnance rate The maximum value of the ratio of the total of nominal cooling capacities of indoor units to the total of nominal cooling capacities of outdoor units, expressed in %.

3.5 Minimum ordonnance rate The minimum value of the ratio of the total of nominal cooling capacities of indoor units to the total of nominal cooling capacities of outdoor units, expressed in %.

4.1 Type

4.1.1 Classification by functions. single-cold, heat pump, heat recycling.

4.1.2 Classification by the structural form of indoor unit. floor stand, wall mounted, ceiling hung, embedded, hidden mounted, air pipe type.

4.2 Model The model of unit shall be designated by the manufacturer, however, the model shall reflect the cooling capacity of the unit under the nominal operating conditions.

4.3 Basic parameters

4.3.1 The power of unit is the rated voltage 220V single phase or 380V three phase AC power with the rated frequency of 50Hz.

4.3.4 For indoor unit or outdoor unit which is not connected to air pipe on site, its external static pressure is

0 Pa; for indoor or outdoor unit with air pipe, the external static pressure shall be indicated.

5.1 General requirements

5.1.1 The unit shall comply with this Standard; and it shall be produced according to the drawings and technical documents which are approved according to the stipulated procedure.

5.1.4 The calibration of the nominal cooling capacity of indoor unit shall be carried out in accordance with the test method as stipulated in Annex G.

5.2 Safety requirements The safety requirements of the unit shall comply with GB 25130 and GB 9237.

5.4.4 Requirements on normal operation The unit shall work safely and reliably under various nominal conditions prescribed by the manufacturer, including maximum height difference between indoor and outdoor units, maximum connecting pipe length between indoor and outdoor units, maximum height difference between indoor units, maximum

ordonnance rate, minimum ordonnance rate, cooling at the maximum environmental temperature, and heating at the minimum environmental temperature, etc.

5.4 Performance requirements

5.4.1 Cooling system sealing property The leakage amount of freezing medium of each part of cooling system shall not be greater than 14 g/a.

5.4.3 Cooling capacity The actual cooling capacity of the unit shall not be lower than 95% of the nominal cooling capacity.

5.4.8 Maximum operating cooling

5.4.8.1 Each part of the unit shall not be damaged and shall work normally during the maximum cooling operation of the unit; overload protector shall not be tripped off.

5.4.9 Maximum operating heating

5.4.9.1 Each part of the unit shall not be damaged; it shall work normally during the maximum operating heating period; the overload protector shall not be tripped off.

5.4.9.2 When the unit stops after 3 min, re-start the unit for 1 h continuous operation; during which period, the overload protector is allowed to trip-off within the first 5 min of activating operation, however, the tripping-off is not allowed after that; for the unit with overload protector not reset within the first 5 min but reset within 30 min since shutdown, 1 h continuous operation is required.

5.4.17 Water-side pressure-drop The water-side pressure-drop of water-cooled unit through water-cooled heat exchanger under the stipulated operating conditions shall not be greater than 105kPa nor greater than 115% of the indicated value.

6.1 Test instruments and test operating conditions

6.1.1 The instruments used in the cooling capacity, heating capacity tests and seasonal energy efficiency ratio test (SEER) annual performance factor test (APF) shall comply with Annex A of GE/T 17758-2010 and Annex B of GB/T 10870-2014.

6.1.2 The cooling integrated part load value test of water-cooled unit and test instruments shall comply with Annex A of GB/T 17758-2010.

6.1.3 The test operating conditions are described in

4.3.3 where the unit shall be tested at the corresponding condition.

6.3.6 Direct blow-off indoor unit combination shall be used preferably for test or the indoor unit combination with the minimum outdoor static pressure air pipe.