

JB

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

JB/T 4119-2013

Replacing JB/T 4119-1991

Solenoid valves for refrigeration

制冷用电磁阀

(English Translation)

Issued on: April 25, 2013

Implemented on: September 1, 2013

**Issued by: Ministry of Industry and Information Technology of the
People's Republic of China**

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Foreword

This Standard is drafted according to the rules specified in GB/T 1.1-2009. This Standard replaces GB/T 4119-1991 "Solenoid Valve For Refrigeration Equipment". Compared with GB/T 4119-1991, main technical changes are as follows.

- Revise the rang of application (see chapter 1, chapter 1 in edition 1991);
- Revise terms and definitions (see chapter 3, chapter 3 in edition 1991);
- Revise the basic parameters of solenoid valve;
- Increase the requirements on dimension, material, appearance, level of protection, high temperature resistance, low temperature resistance, corrosion resistance, cleanliness, noise, breaking strength;
- Revise the requirements on tightness, maximum opening pressure differential, internal leakage rate, insulation resistance, electrical strength, heat and humidity resistance, vibration resistance, durability and flow rate;
- Revise the tightness, maximum opening pressure differential, internal leakage rate, insulation resistance, insulation resistance, electrical strength, heat and humidity resistance, durability and flow rate test method.

1 Scope

This Standard specifies terms and definitions, types, models and basic parameters, requirements, test methods, inspection rules, marking, packaging, transportation, and storage of solenoid valve for refrigeration equipment (hereinafter referred to as "solenoid valve").

This Standard applies to solenoid valve, of which the nominal diameter is not greater than 40 mm, and of which the pipes, high-and-low pressure steam pipes use R22, R134a, R404A, R407C and R410A as the refrigerants. Solenoid valves of using other refrigerants may reference to this Standard for use.

2 Normative references

The articles contained in the following documents have become part of this document when they are quoted herein. For the dated documents so quoted, all the modifications (Including all corrections) or revisions made thereafter shall be applicable to this document.

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

GB/T 2423.1 Environmental testing - Part 2: Test methods - Tests A. Cold

GB/T 2423.2 Environmental testing - Part 2: Test methods - Tests B. Dry heat

GB/T 2423.3 Environmental testing for electric and electronic products - Part 2: Testing method test Cab. Damp heat Steady state

GB/T 2423.17 Environmental testing for electric and electronic products - Part 2: Test method - Test Ka. Salt mist

GB/T 2624(All parts) Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full

GB/T 10567.2 Wrought copper and copper alloys - Detection of residual stress - Ammonia test

GB/T 13306 Plates

GB 14536.1 Automatic electrical controls for household and similar use - Part 1: General requirements

JB/T 5296 Valves for general purposes - Test method of flow coefficient and flow resistance coefficient

3 Terms and definitions

Following terms and definitions apply to this document.

3.1 Solenoid valve for refrigeration equipment

The valve that utilizes the electromagnetic force generated by the coil energized excitation to drive the valve element to open or close.

3.2 Direct action-type solenoid valve

The valve that is opened and closed by utilizing the electromagnetic force generated by coil energized excitation to directly drive the valve element to realize open-close.

3.3 Pilot-type solenoid valve

The valve that utilizes the electromagnetic force generated by the coil energized excitation to drive pilot valve; then through the pilot pressure, open and close the main valve by the pressure differential of upper-lower parts of valve element.

3.4 Normally closed solenoid valve

The valve that is closed when coil is not energized, and opened when coil is energized.

3.5 Normally open solenoid valve

The valve that that is opened when coil is not energized, and closed when coil is energized.

3.6 Maximum working pressure

The allowable maximum working pressure when solenoid valve is operated.

3.7 Maximum opening pressure differential

The maximum pressure differential, between valve inlet and outlet, that enables solenoid valve to open reliably.

3.8 Minimum opening pressure differential

The minimum pressure differential, between valve inlet and outlet, that enables solenoid valve to open reliably.

3.9 Pressure drop

The pressure differential that refrigerant passes inlet and outlet of solenoid valve.

3.10 Internal leakage rate

Under specified test conditions, the flow rate when test medium passes through valve's close-position.