

ICS 13.220.10

CCS C 84



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

**GB 5135.5-2018**

Replacing GB 5135.5-2003

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**Automatic sprinkler systems - Part 5: Deluge alarm valves**

自动喷水灭火系统 第5部分：雨淋报警阀

**Issued on: June 7, 2018**

**Implemented on: January 1, 2019**

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**Issued by: General Administration of Quality Supervision, Inspection and  
Quarantine;  
Standardization Administration of the PRC**

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## Foreword

Chapters 6 and 8 of this section are mandatory and the rest are recommended. GB 5135 "Automatic Sprinkler System" is divided into the following sections.

- Part 1. Sprinklers;
- Part 2. Wet alarm valve, retarder, hydraulic alarm bell;
- Part 3. Water spray nozzles;
- Part 4. Dry alarm valve;
- Part 5. Rain alarm valve;
- Part 6. General purpose valves;
- Part 7. Water flow indicator;
- Part 8. Accelerator;
- Part 9. Early suppression fast response (ESFR) nozzles;
- Part 10. Pressure switch;
- Part 11. Grooved pipe joints;
- Part 12. Expanding the coverage area sprinklers;
- Part 13. Water curtain nozzles;

## 1 Scope

Part 5 of China's mandatory series on automatic sprinkler systems, covering the deluge alarm valve - the valve that holds water out of a deluge or pre-action system and opens on command to admit it to every open head at once. It is the component on which those systems entirely depend: in a deluge system the heads are open and nothing but this valve stands between the water and the protected space, so a valve that leaks floods a room that is not on fire and a valve that fails to open leaves the system inert. This part specifies the terms and definitions, the classification and code, the model designation, the requirements, the test methods, the inspection rules, the marking and instructions, and the packaging, transport and storage of deluge alarm valves. The requirements cover the strength and tightness of the valve body under system pressure held indefinitely; the opening on command, with the response time and the reliability of the release, whether the trip is hydraulic, pneumatic, electrical or manual - and the requirement that a manual release always exist and always work; the flow the valve must pass once open, since a deluge system demands the full design flow immediately rather than the gradual demand of a wet system; the resetting; the alarm the valve must give when it operates; and the durability over long periods held closed, which is the state the valve is in for its whole life. The associated trim, the priming arrangements and the drain are treated as part of the product, because a deluge valve is only as reliable as the small pipework hung on it. Issued on 7 June 2018 and in force since 1 January 2019, it replaces GB 5135.5-2003.

This part of GB 5135 specifies the terms and definitions, classification and code, model, requirements, test methods, inspection rules, Logo, instruction manual and packaging, transportation and storage. This section applies to the rain alarm valve used in the sprinkler system.

## 2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 3287 malleable cast iron pipe joint

GB 5135.1 Automatic sprinkler systems - Part 1. Sprinklers

GB 5135.6 Automatic sprinkler systems - Part 6. General purpose valves

GB 5135.11 Automatic sprinkler systems - Part 11. Grooved fittings

GB/T 9112 Steel Pipe Flange Types and Parameters

GB/T 9969 General guidelines for the use of industrial products

GB/T 17241.6 integral cast iron flange

GB/T 21873-2008 Specification for interface seals for rubber seals, drains and sewers

### 3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Opened by electric, mechanical, pneumatic or other means, so that water can automatically flow into the water spray system in one direction and simultaneously alarm Kind of control valve.

3.2 The valve assembly of the rain alarm valve installed in the pipeline system is in the closed position, and the water supply side of the valve is filled with pressure-stabilized water, without water The state that flows out from the side of the rain alarm valve system.

3.3 A locking mechanism that prevents the flap assembly from returning to its closed position after actuation.

3.4 The operating point of the rain alarm valve to allow water to enter the sprinkler system is indicated by the system side, the water supply side or the auxiliary pressure. 3.5

3.6 The alarm valve is automatically opened.

3.7 Dynamic, pneumatic or mechanical starting methods allow the piston chamber or diaphragm cavity to be depressurized.

3.8 The valve is opened by the electric, pneumatic or mechanical starting method to make the water supply side pressure water enter the piston cavity or the diaphragm cavity through the pressure bearing area difference. carry out. 3.9 3.10

3.11 A portion of the valve separates the surface of the air and/or water seal assembly. When the valve is in the servo state, the chamber pressure is normal atmospheric pressure.

### 4 Classification and code

4.1 Rain alarm valve can be divided into.

- a) Pusher type, codenamed "G";
- b) diaphragm type, codenamed "M";
- c) Piston type, codenamed "S";
- d) butterfly valve type, codenamed "D";
- e) Warm type, codenamed "W".

4.2 Rain alarm valve can be divided into. according to the starting mode.

- a) Pressurized, codenamed "J";