



FSS- Fire Suppression System

Hot aerosol fire extinguishing device model: QRR0.1G/S

1. Product Overview

The new thermal aerosol fire extinguishing device is a breakthrough product in the fire field with ultra-high fire extinguishing efficiency and reliability. The product has the characteristics of small size, no pressure storage, no need to lay pipe network and maintenance, efficient fire extinguishing, rapid, non-toxic and harmless, safe and reliable, green environmental protection, etc., especially suitable for relatively closed places such as DCFC or AC Chargers, communication room, battery compartment, engine compartment, battery box, etc.

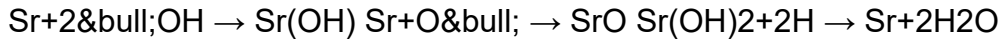
2. Product Features

The suppression effect of S-type thermal aerosol on fire is mainly reflected in the following aspects:

The fire extinguishing mechanism of general fire extinguishing agent mainly includes isolation method, suffocation method, cooling method and chemical suppression method. Different fire extinguishing agents have different fire extinguishing mechanisms. The fire extinguishing mechanism of hot aerosol is mainly reflected in two aspects: on the one hand, the cooling effect of endothermic decomposition, on the other hand, the chemical inhibition of gas phase and solid phase, which play a synergistic role with each other. In addition, the gas phase components in the aerosol fire extinguishing agent product also play a certain role in paving.

- Cooling and fire extinguishing effect of endothermic decomposition
The cooling effect of thermal aerosol fire extinguishing agent mainly depends on the endothermic decomposition of 4 metal oxides and carbonates. The heat released by any fire in a short period of time is limited. If the solid particles in the aerosol can absorb part of the heat released by the fire source in a short period of time, the temperature of the flame will be reduced, the heat radiated to the combustion surface and used to crack the vaporized combustible molecules into free radicals will be reduced, and the combustion reaction will be inhibited to a certain extent.

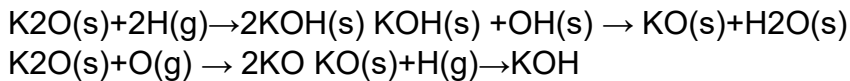
- Gas phase chemical inhibition
Under the action of heat, vaporized metal ions such as Sr, K, Mg or cations that lose electrons, which are extinguished and decomposed by hot aerosol, exist in the form of steam and undergo multiple chain reactions with active groups H, OH and O in combustion. Sr is taken as an example below:



Repeatedly, the active groups in the combustion are consumed in large quantities, the concentration is continuously reduced, and the combustion is suppressed.

Solid phase chemical inhibition

The solid particles in the hot aerosol fire extinguishing agent can adsorb the chain reaction intermediates OH, H and O, and catalyze them to reconstitute stable molecules, so that the branch chain of the combustion process reflects the terminal, taking K as an example as follows:



In the above-mentioned fire extinguishing effect, several fire extinguishing mechanisms interact and work together, but the gas transmission effect and the heat absorption and cooling effect of metal oxides or carbonates only play a paving effect, and the main fire extinguishing effect still depends on the chemical inhibition effect of gas and solid phase.

Applications

Scope of application of FSS products

3.1. Scope of application

The thermal aerosol system is a fully submerged system, suitable for extinguishing Class A, B, C and E fires in relatively closed spaces.

Disaster

- a) put out A Class of fire: such as wood, paper and other solid substances initial fire, suitable for wood products, archives, museums, libraries, reference rooms and other relatively closed places fire
- b) Extinguishing Class B fires: applicable to fires in relatively closed places such as storage of diesel oil (except for No. 35 diesel oil), heavy oil, transformer oil, animal oil, vegetable oil and other Class C combustible liquids;
- c) put out the fire class C: applicable to the storage of all kinds of gas, such as gas, natural gas, methane, ethane, propane and other relatively closed place fire;
- d) Extinguish Class E fire: applicable to transformer (distribution) electricity room, wind power electrical box, generator room and cable

Fire in relatively closed places such as interlayer, cable well, cable trench, electronic computer room, communication room, battery compartment, engine compartment, power change cabinet, etc.

3.2. Scope of application

Hot aerosol automatic fire extinguishing device can not be used to fight the fire caused by the following substances:

- a) No air can still quickly oxidize chemical substances, such as nitrocellulose, gunpowder and so on.
- b) Active metals, such as potassium, sodium, magnesium, titanium, zirconium, uranium, plutonium, etc.
- c) Can decompose compounds, such as some peroxides, hydrazine, etc.
- d) Metal hydrides, such as potassium hydride, sodium hydride, etc.
- e) Substances capable of spontaneous combustion, such as phosphorus.
- f) Strong oxidants, such as nitrogen oxide, fluorine, etc.

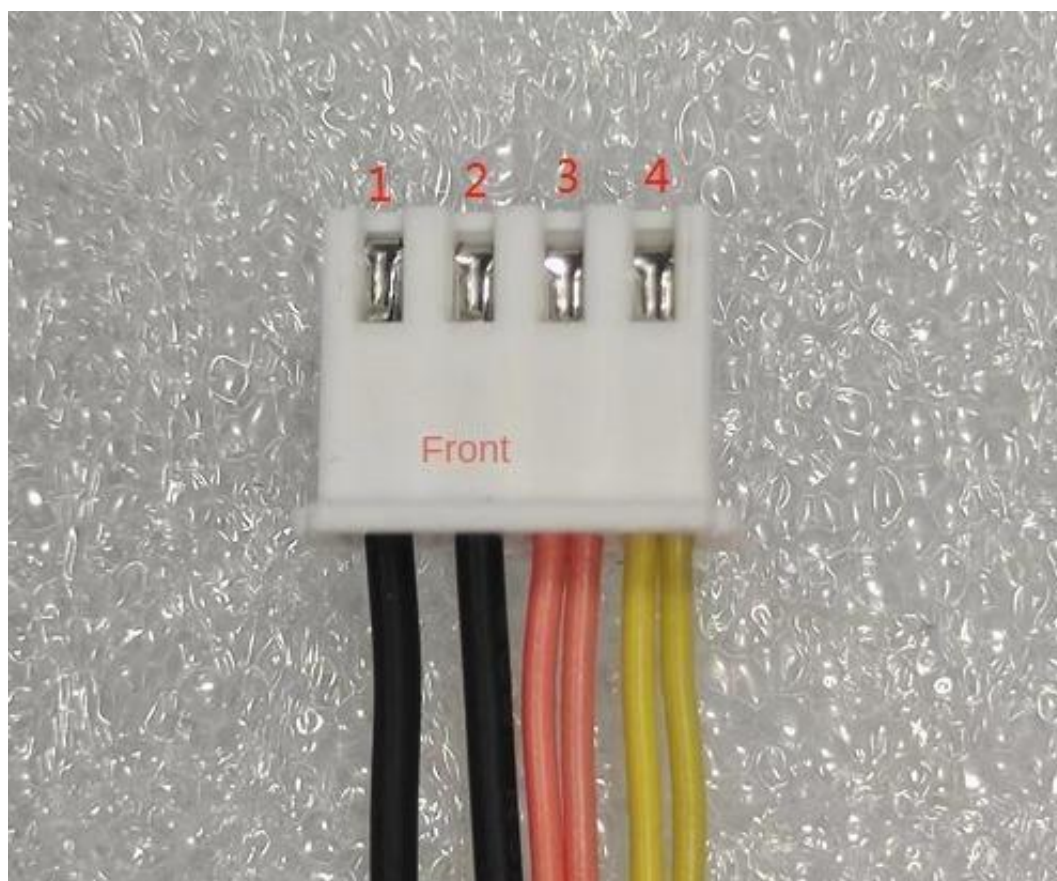
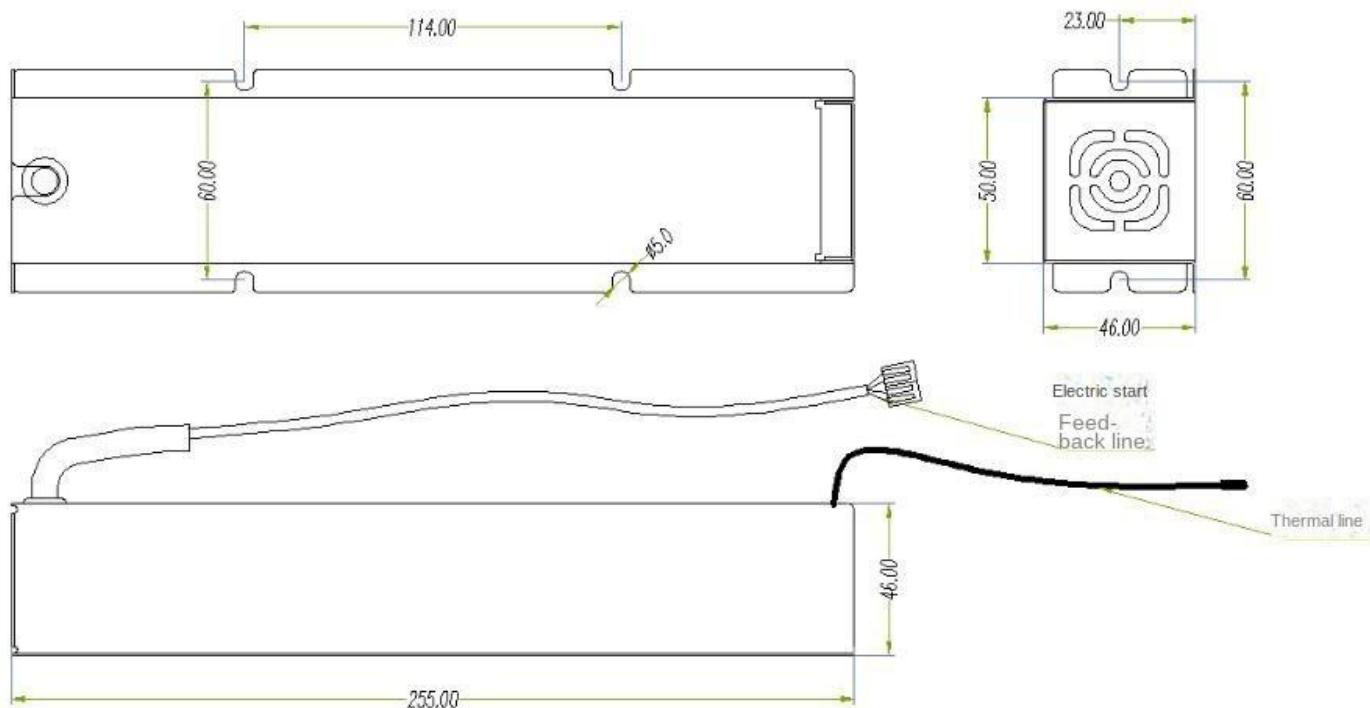
3.3. Non-applicable places

- a) commercial, catering services, entertainment and other crowded places;
- b) storage of flammable and explosive materials.

4. technical parameters

- 4.1. S-type hot aerosol production implementation standard XF499.1 "aerosol fire extinguishing system part 1: hot aerosol fire extinguishing device"
- 4.2. Validity of use: 10 years
- 4.3. Start mode: electric start/hot start
- 4.4. Starting temperature: 160 °C → 180 °C;
- 4.5. Use ambient temperature: -40 °C → +85 °C
- 4.6. Protection space: ≤ 3 m³
- 4.7. Dose of hot aerosol: 100g ± 2%
- 4.8. Release lag time: ≤ 5s
- 4.9. Thermal spacing: 0.02m ≤; 400 °C; 0.05m ≤; 200 °C; 0.1m ≤; 75 °C
- 4.10. Passive switching value feedback signal: normally open
- 4.11. Device mass: 1444g +/-10g

5. Structure Installation



Description:

1. Unit: mm
2. Length of thermosensitive wire: $A = 200 \pm 10$;
3. Feedback line terminal model: XHB2.54-4P buckle
terminal feedback line: $B = 200 \pm 10$; Normally open

4. Wiring method:

the two black wires of serial numbers 1 and 2 are for switch feedback signal wiring; 3 and 4 are electric starting wires, which can be connected to DC1.5-24V power starting devices without positive and negative distinction;

5. Fixing screw: Adaptation specification M4.

6. Use operation precautions

- 6.1. It is forbidden to pile up equipment, sundries and other obstacles within 0.1m in front of the nozzle of the fire extinguishing device to ensure the fire extinguishing period of the fire extinguishing device.
- 6.2. After the device is started, please contact our company for replacement in time.
- 6.3. The validity period of the electric initiator is 10 years. After the validity period is exceeded, the user shall contact the supplier for replacement.

7. Safety tips

- 7.1. Non-professionals are not allowed to disassemble.
- 7.2. After spraying, do not touch the shell before cooling to prevent scaldi

