

# Principle of new energy battery fire extinguishing device

**Keywords:** Lithium-ion battery safety, Thermal runaway behavior, Fire-extinguishing agent, Fire suppression strategy

1. Introduction With the increasing scarcity of traditional energy and the concerns for environmental pollution problems, the global demand for the new energy industry is ...

This paper summarizes the fire problems faced by the safe operation of the electric chemical energy storage power station in recent years, analyzes the shortcomings of the relevant design standards in the safety field of the energy storage power station and the fire characteristics of the energy storage power station, A characteristic gas monitoring device ...

**Main Description.** The size of lithium-ion battery boxes produced by different manufacturers varies. After installing lithium-ion batteries, the internal volume of the lithium-ion battery box is insufficient, making it very difficult to install the Lifepo4 Fire extinguishing system.

Aerosol fire extinguishers, due to their small size and high fire extinguishing efficiency, are the most suitable partners for new energy fire protection. For our new energy aerosol products, we have introduced them in other chapters. ...

6 ???&#0183; In this paper, the passive system-level battery fire prevention device is proposed, which is mainly based on the combination of Tesla valve channel and phase change material. The working process model is built and verified by experiment. Performances for layouts based on different Tesla valve channels are simulated and assessed.

The condensed floor-standing aerosol fire extinguishing device is called a "floor standing aerosol fire suppression system" For short you will see it is placed on the floor to make fire protection by way of total flooding, by ...

and distributed energy, however, the energy storage battery itself is relatively expensive. This device can be applied to energy storage power stations of various scales to effectively prevent fire and explosion accidents. New energy vehicle field: new energy vehicles are the development trend of future vehicles.

The specific methods and steps are as follows: Protecting the battery pack with micro lithium battery aerosol fire extinguishers. Use a power bank style or box-type heptafluoropropane or NOVEC1230 fire extinguisher to protect the lithium battery cluster and rack.; Large capacity of cylinder type FM200 or NOVEC1230 fire extinguishing system to ...

Overall, lithium battery fire extinguisher nozzles are a critical safety device used to prevent lithium battery

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fires. It works by detecting the source of a fire, spraying extinguishing agent, lowering the temperature, depriving the fire of oxygen and preventing the fire from re-igniting.

The working principle of the new energy lithium battery automatic fire extinguishing device, when the lithium-ion battery or capacitor internal short-circuit, thermal runaway, high temperature, extrusion by external force, puncture and so on, it is easy to cause the thermal expansion of the battery or capacitor and cause combustion.

6 ¶ Recently, batteries especially the lithium-ion battery are widely employed for the electric vehicle and energy storage [1], because of high efficiency, large energy density and long cycle life [2]. However, it suffers from the serious hazard such as fires and explosions in case of thermal runaway (The causes of thermal runaway can generally be categorized into ...

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