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ASSOCIATION STANDARD

T/CSAE 86-2018

Requirements and test methods of automatic fire extinguishing devices for the lithium-ion battery on electric vehicles

电动汽车锂离子电池箱火灾防控装置 性能要求和试验方法

(English Translation)

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

Some elements of this standard may involve patents, and the standard issuing authority

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does not assume responsibility for identifying these patents.

This standard was proposed by the Technical Innovation Alliance of the Electric Vehicle Industry.

This standard was drafted. Shanghai Fire Research Institute of the Ministry of Public Security, Hangzhou Zhongchuan Fire Equipment Co., Ltd.

1 Scope

This standard specifies the performance requirements and test methods for automatic fire extinguishing devices for lithium-ion battery cases in electric vehicles.

This standard applies to the design, layout and testing of fire extinguishing devices.

2 Normative references

The following standards are essential for the application of this document. All dated references, all subsequent modifications (not the inclusion of errata content or revisions does not apply to this specification, but parties to agreements based on this specification are encouraged to study the use of these documents.

The possibility of the latest version.

GB 2423.1 Environmental testing of electrical and electronic products - Part 2. Test methods Test A. Low temperature GB 2423.2 Environmental testing of electrical and electronic products - Part 2. Test methods Test A. High temperature GB/T 31467.3 Lithium-ion battery packs and systems for electric vehicles - Part 3 - Safety requirements and test methods GB 7258 Motorcycle Operation Safety Technical Conditions QC/T 413-2015 Basic technical conditions for automotive electrical equipment

3.1 Lithium ion battery box lithium-ion battery box

An energy storage device box with a plurality of lithium ion battery cells or modules, usually including a lithium ion battery module, a battery management module, the cabinet and corresponding accessories are referred to as lithium ion battery boxes.

3.2 Fire extinguishing device fire extinguishing device

Electric vehicle lithium-ion battery box automatic fire extinguishing device (hereinafter referred to as "fire extinguishing device") consists of measurement and control module, acquisition module, fire extinguishing the composition of the tank, the nozzle, the connecting pipe fitting and the main control unit are used to suppress the initial loss of the lithium ion battery due to the thermal runaway of the battery.

Burning and exploding.

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3.3 Start time starting time

The time from when the fire extinguishing device receives the detection signal to the action of the fire extinguisher tank.

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3.4 Injection time discharging time

After the fire extinguishing device is started, the time when the fire extinguishing agent is ejected from the nozzle to the time when the spouting is stopped.

4.2 Model Tag Example

The model of a gas fire extinguishing device with a storage pressure of 1.0 MPa and a mass media of 0.48 kg is expressed as EVMQ0.48/1.0.

5.1 Basic requirements

5.1.1

The fire extinguishing device shall be able to work normally in an environment with a temperature of -20 ° C to + 60 ° C.

5.1.2

The wiring harness used in the fire extinguishing device shall comply with the requirements of GB 7258.

5.1.3

Fire-resistant devices and accessories shall be subjected to vibration, mechanical shock, temperature shock and damp heat cycle to meet the requirements of GB/T 31467.3.

5.1.4

The requirements for electromagnetic compatibility of fire-extinguishing devices shall meet the requirements of item 3.9 of QC/T 413-2015.

5.1.5

The extinguishing agent shall be a qualified product permitted by the State and shall comply with the relevant national standards and industry standards.

5.2 Appearance and logo

5.2.1

Each component of the fire extinguishing device shall have no obvious processing defects or mechanical damage, and the outer surface of the component shall be treated with anti-corrosion treatment and anti-corrosion.

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The coating and plating should be complete and uniform.

5.2.2
The nameplate of the fire extinguishing device shall be firmly placed in the obvious part of the device, indicating. device name, model specification, and implementation standard Code, working temperature range, production unit, equipment number, production date, etc.

5.3 Power supply

5.3.1
The nominal voltage of the fire extinguishing device shall be 12 Vd.c or 24 Vd.c, the monitoring current shall not exceed 100 mA, and the working current shall not be customize Storage pressure in megapascals (MPa) Extinguishing agent quality in kilograms (kg) Type of extinguishing agent (Q stands for gas, F stands for dry powder, R stands for hot aerosol, S stands for other) Electric vehicle lithium ion battery box automatic fire extinguishing device - -XXXEVM - -/3T/CSAE 86 -.2018 should be greater than 2 A, power should not be greater than 30 W.

5.3.2
The fire extinguishing device shall have a rechargeable standby power supply, and the standby power supply capacity shall be capable of continuous operation for 24 hours under normal monitoring conditions.

The system should be guaranteed to start reliably during the period.

5.3.3
The main and standby power supply of the fire extinguishing device shall have working instructions.

5.4 Detection alarm

5.4.1
Fire-extinguishing device detectors shall comply with the relevant national standards or industry standards.

5.4.2
The fire extinguishing device shall be able to receive the fire alarm signal of the fire detector and emit an audible and visual alarm signal, and comply with the provisions of GB 7258.

5.5 Start running

5.5.1
Fire extinguishing devices shall have automatic start and manual start functions.

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