



ANTIDET FIRE SUPPRESSOR

ANTIDET FIRE SUPPRESSOR FSS-2 is an active system for suppressing the fire in any type of railway vehicles, including light and underground trains and tramways. It consists of Control Unit, Action Elements and Fire Detectors.

Its aim is the fire identification within specified vehicle areas or after the identification to suppress the fire with a single-shot extinguishing action. The system works independently on vehicle electronic controls or its speed and can be set up to work fully automatically without accepting incorrect human's inputs.

The system is intended to be used for protection of engines, power distributors, electrical equipment, heating units and passenger or cargo areas.

Function

Detectors detect the effects of the fire, which can be temperature raising, flame or smoke presence and their combinations (based on detector type) in protected area.

When the temperature rises above the limit or flame/smoke appears, the Control Unit analyses this as the fire and activates appropriate Action Element(s), which distributes extinguishing agent in the area and eliminates the fire.

System can be also used only for the fire detecting without extinguishing.

System description

All functions of the system are controlled by the computer-based Control Unit. The Control Unit has implemented decision processes which eliminate false alarms, checks up the ready state periodically and switches between automatic and manual control.

False alarms are caused mainly by the outside interference. Control Unit of the system is designed and developed to eliminate these external interferences and reacts only for real danger.

Special function is logical protection (block) against extinguishing in the case of incorrect human input when the detectors are not reporting the fire.

System is equipped with *self-test* function which checks up all the parameters during the ready state. Any incorrect value which is out of the set up limits is reported as specific error to the staff.

ANTIDET FIRE SUPPRESSOR system works in fully automatic or manual mode. Automatic mode needs no attention of the staff - after dependable fire detection the fire is extinguished automatically after set up delay.



After switching into manual mode, human input is requested for action. Manual mode makes possible to extinguish fire immediately (if there is no block by other requirements like vehicle speed or fan run-out, etc.), to refuse extinguishing or to „freeze“ the state of the system for visual control of the protected areas.

Communication with control system of the vehicle (train) is possible via logical inputs and outputs or by communication interfaces RS232 / RS485 (protocol Modbus) or CAN 2.0

The system is designed to work in the external temperatures range of $-40 \div +80^{\circ}\text{C}$, it was certified for electromagnetic compatibility (EMC) and for all kind of vibrations.

System Components

Control Unit

CU controls and checks up the whole system. If any parameter is out of the limits, the unit reports this state as a specific error.

CU stores the history of all situations (logs) like errors and activations.

Using external PC connected via standard USB interface makes possible to download the log file, to set up all parameters of the system and combinations of the Detectors with Action Elements.

Fire Detector

Fire Detector indicates the fire presence in the protected area.

When the temperature rises above the set up limit or flame or smoke within the space appears, Detector sends the definite signal.

Action Element

Action Element is pressure vessel with extinguishing agent which is closed by fast opening valve. In the case of activation the valve opens and distributes the extinguishing agent in the protected area.

For the cases when persons enter the protected areas and their behaviour (service, maintenance, etc.) could cause unwanted activation, the Action Element is equipped with safety block which doesn't allow the valve to be opened. Action elements can be electrically blocked also by pressing the button on the Control Unit.

The extinguish agent is FE-36, commonly used in fire extinguishers. This agent respects all environmental needs and has no time of expiration.

Contact

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