

A faint, light gray technical drawing or schematic of a mechanical component, possibly a fire extinguisher, is visible in the background. It features various lines, curves, and a grid pattern, typical of engineering drawings.

DSPA b.v.

OPERATION MANUAL

**STANDALONE AEROSOL FIRE EXTINGUISHING
UNIT WITH A THERMAL STARTER**

DSPA 12

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Intended use

Standalone aerosol fire extinguishing unit with a thermal starter DSPA 12 (DSPA 12/1, 12/2, 12/3, 12/4 is a saturation extinguisher and intended to control and extinguish fires of flammable and combustible liquids, solid fuels and electrical equipment, including energized one.

The generators are used for fire protection of small volumes (electric cabinets, engine compartments, etc.), including vehicles.

When using the generator it necessary to observe the applicable normative documents SP 5.13130.2009 "Automatic fire alarm and control systems".

The generators are not used to extinguish alkali and alkaline earth metals, as well as sub-stances, which burn without air.

Design

Standalone aerosol fire extinguishing unit consists of the body, which houses the aerosol-forming block, and the activation unit. The aerosol-forming block is separated from the upper lid and the bottom of the generator body by heat shield material. On the side surface of the body, there is a slot nozzle, through which the aerosol exits.

Operating principle

By applying an electrical or thermal pulse to the activation unit the aerosol-forming block ignites, the combustion of which forms gas-aerosol fire-extinguishing mixture consisting of fine particulates (potassium salts being potent inhibitors) about 70% of the original weight of the composition and the gas phase, which enters the protected volume.

Technical data

DSPA 12/1



DSPA 12/2



DSPA 12/3



DSPA 12/4



Technical Data

	DSPA 12/1	DSPA 12/2	DSPA 12/3	DSPA 12/4
Weight of the unit, kg	0,1+0,01	0,15 ± 0,02	0,5 ± 0,05	0,65 ± 0,07
Weight of aerosol-forming charge, kg	0,015 ± 0,02	0,03 ± 0,003	0,055 ± 0,006	0,11 ± 0,01
Fire control capability, kg/m ³	0,05	0,05	0,05	0,05
Maximal protected volume of the nominally tight room ($\delta^* < 0.001\text{m}^{-1}$), m ³	0,3	0,6	1,1	2,2
Dimensions, mm (diameter x height)	75 x 20	75 x 28	105 x 20	105 x 28
Working time, s	5 ± 0,5	8 ± 0,8	6 ± 0,6	10 ± 1,0

* δ^* - the ratio of the total area is permanent of door openings to the volume of the protected room.

Operation conditions:

- operating temperature range, °C.....- 40 - + 75
- relative humidity at 25 °C, % 80
- physical impact 1g within the frequency range up to 100 Hz

To start the generator use special actuation units: electric or thermo-chemical.

Application of thermochemical actuation units activating when the temperature in the protected volume reaches 180°C enables each generator to work totally autonomously.

The amount of heat generated during operation of the generator – 100 kJ.

The temperature of the gas-aerosol stream at a distance of 250 mm from the outlet cross section of the fire extinguishing unit does not exceed 75 °C.

False positives actuation of the standalone aerosol fire extinguishing unit with a thermal starter DSPA 12 excluded. DSPA 12 in standby mode does not affect the maintenance personnel, passengers or environment.

Determination of necessary quantity of fire extinguishing unit and their arrangement in the protected volumes

Design and installation work on aerosol fire-extinguishing systems shall be carried out by specialized organizations which have a license to perform these works. Calculation of the number of units required to protect a given volume, is performed according to the procedures set forth in the current regulations. (SP 5.13130.2009 "Automatic fire alarm and control systems").

It is recommended to install the standalone aerosol fire extinguishing unit with a thermal starter DSPA 12 in the lower part of the protected volume so to ensure rapid and uniform filling of the entire volume with fire extinguishing aerosol and minimize removal of aerosol through the openings (hatches, gates, ventilation, etc.).

Standalone aerosol fire extinguishing unit with a thermal starter DSPA 12 in the protected volume should be located observing the following requirements:

- distance from the side surface and the lid of the generator to the walls, partitions, hardware, wiring, etc. must be at least 100 mm;
- distance between the generators must be at least 200 mm;
- not allowed to install the generator on easy-to-combust bases;
- it is necessary to provide access to the installed DSPA 12 to carry out preventive and routine maintenance.

When using several units to protect one volume, the generators should actuate simultaneously.



Pre-starting procedure

Standalone aerosol fire extinguishing unit with a thermal starter DSPA 12 shall be installed on the enclosing structures.

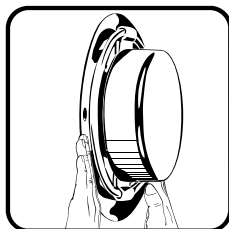
Fastening is carried out using different types of hardware through 3mm diameter holes or double sided tape.



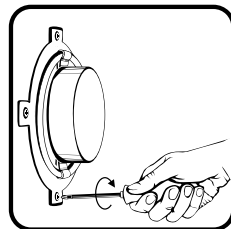
Degrease the surface



Remove the protective film



Press firmly to the surface



Hardware fastening

- Before tape fastening, you must degrease the surface for the installation of the product.
- Remove the protective film from the back of the unit DSPA 12.
- Press firmly to the surface.

Installation by tape should be in a heated room, under normal climatic conditions, then a temperature mode should not be changed for 3 hours.

Safety measures during installation and operation fire extinguishing unit

Working with unit and actuation units one should remember that they include flammable compounds.

It should be remembered that the gas-aerosol mixture contains no toxic substances in amounts harmful to human, and the aerosol particles themselves can only irritate the mucous membranes, and their effect can be neutralized by using respiratory protection, gauze or cloth bandages.

After triggering of the fire extinguishing aerosol generators, the products of combustion and deposited aerosol must be removed from the surfaces in the protected volume not later than 3 days later, as the aerosol is hygroscopic and during absorbing moisture gives slightly alkaline reaction. Cleaning shall be done with a vacuum cleaner, brushes and followed by wet cleaning.

Cleaning shall be done using personal protective equipment (respirator of "petal" type and rubber gloves).

Standalone aerosol fire extinguishing unit with a thermal starter DSPA 12 should not start up until complete evacuation all people of the protected object or premises.

Maintenance is intended to prevent occurrence of failures in DSPA 12, keeping them in instant readiness ensuring reliable operation in the case of fire.

Maintenance of the DSPA 12 includes visual inspection of the unit availability in the places of installation, reliability of their fixing, integrity and reliability of the attached lead wires for the unit.

Standalone aerosol fire extinguishing unit with a thermal starter DSPA 12 is not subject to repairs and if any defects are detected or after being actuated, they must be replaced.

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FORBIDDEN:

- TO USE THE UNIT FOR MANUAL FIREFIGHTING;
- TO PERFORM WELDING OR OTHER HOT WORKS CLOSER THAN 2 M FROM THE GENERATOR;
- TO USE THE GENERATORS WHICH HAVE MECHANICAL DAMAGES;
- TO DISASSEMBLE THE GENERATOR.

Marking, packing, handling and storage

On the enclosure of standalone aerosol fire extinguishing unit with a thermal starter DSPA 12 adhesive label and signs designating classes of fire, to extinguish that can be used unit.

Each box with a packaged generator and shipping container has adhesive printed label and handling marks.

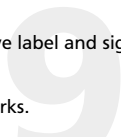
The technical data sheet and label contain the lot numbers of aerosol-forming charge unit, h/w version, production date, charge weight and the maximum volume for which the unit is designed.

Products are supplied from the factory packed in carton boxes. The generator does not belong to dangerous goods and is not subject to special marking.

Products in their original packaging can be transported by all kinds of vehicles.

The units are stored in the original packaging indoors at temperatures of $+5 - + 40^{\circ}\text{C}$ and relative humidity of 80% in the absence of aggressive media.

Units are allowed to be stacked in their original packaging on each other, without limiting the number in the row by height.





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