“Extinguishing Systems Ltd.”

EPOTOS Group

Condensed fire extinguishing aerosol generator with gas conical outflow

“DOPING 2E80”
“DOPING 2E160”
“DOPING 2E225”
“DOPING 4E400”
“DOPING 4E700”

TECHNICAL PASPORT and USER MANUAL

“Extinguishing Systems Ltd.”
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1. DESIGNATION

1.1. Condensed fire extinguishing aerosol generators “Doping 2E80” “Doping 2E160” “Doping 2E225” “Doping 4E400” and “Doping 4E700” with gas conical outflow (further as «CAG») are designed for localization and extinguishing in conditionally closed volumes fires and ignitions of the following Classes:

A2 — solid combustible materials ignitions not accompanying with smoldering;

B — volatile flammable and combustible liquids ignitions;

C — gases ignition;

and fires of electrical equipment being under voltage of up to 140 kV.

1.2. CAG can operate in an ambient temperature range from -50°C to +95°C (it is permitted to rise repeatedly the ambient temperature up to +125°C for the duration of not more than 8 hours).

1.3. Predominant fields of application are engine compartments and other spaces on various transport means such as public transport, river and sea vessels, railway locomotives, cable vaults, electrical boxes and transformer plants, as well as rooms containing highly inflammable substances including volatile flammable liquids, combustible-lubricating materials and fuel gases, and also storage rooms of valuable materials etc.

1.4. The generators belong to the class of fixed extinguishers having zero ozone depleting potential.

1.5. The distinctive kinds of such generators are a relatively short stream and a relatively rapid of temperature decrease of the effusing aerosol as compared with generators of axial outflow. The most important peculiarity of such generators is their high fire extinguishing capacity with small dimensions and mass of generators. That gives the possibility to install generators in objects with relatively big and untight volumes.

9. NOTICE of ACCEPTANCE

This notice certifies that the generators supplied have left “EPOTOS” in full working order.

The generators “Doping-2E80”, “Doping-2E160”, “Doping-2E225”, “Doping-4E400” “Doping-4E700” covered by this notice are listed here:

- Goods were inspected and packed on:

- Inspector’s stamp and signature

Date of issuing

10. NOTICE of SELLER

Date of sale «_____» _____ 20___ г.

The seller name _____

_____

Signature _____ Stamp

The manufacturer
"Fire extinguishing systems"
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On the exclusive agreement for
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www.epotos.com
pojtehexport@mail.ru

brush, wet cleaning rag or washed off by water. During cleaning personal protection equipment should be used (respirator or gauze bandage). In case of eyes contact rinse eyes in plenty of water.

5.7. It is not allowed to:

- place generators near heating devices (in the zone with the temperature of higher than 100 ºC);
- connect generators to an electrical supply prior their standard installation on an object;
- fulfill any works with a generator connected to a trigger circuit;
- perform welding works, smocking and use open flame on the distance nearer than 2,5 meters from a generator.

6. MAINTENANCE REQUIREMENTS

6.1. The Doping generators do not require special maintenance beyond a regular visual inspection.

6.1.1. Once per a month each generator being in the standby state should be examined for the absence of visual internal abnormalities of package contents and security of attachment, changes in attachment condition, mechanical damages, as well for the absence of disconnection and internal abnormalities of the electrical actuator circuit.

Generators having troubles that can't be easily rectified should be checked by the manufacturer.

Attention! The electrical circuit should be checked by electric current of less, than 0,1 A.

7. STORAGE and TRANSPORTATION

7.1. The Doping generators should be stored and transported in original packing. These will provide protection from mechanical damage, direct sunlight, moisture and aggressive environments.

7.2. Generators Doping are unpressurised units. They can be transported by any transport at any distance in accordance with general existing rules of cargo transportation.

8. WARRANTY

8.1. The manufacturer guarantees the compliance of the generator to the requirements of the Technical Specification, provided the conditions of transportation, storage and operation are strictly observed by users.

8.2. The specified service life of generators is 10 years if the storage time is not more than 8 years.

8.3. The generator warranty assurance – 2 years from the acceptance date.

2. SPECIFICATION

Descriptions	Generators model and their data				
	2E80	**2E160**	**2E225**	**4E400**	**4E700**
1. Mass of AFC (charge of aerosol forming compound), kg	0,080 ±0,005	0,160 ±0,005	0,230 ±0,005	0,400 ±0,010	0,700 ±0,010
2. Generator's fire extinguishing capacity according to GOST R 53284, kg/m^3 ,not more than: - for fires of Class B; - for fires of Class A2			0,028 0,022		
3. Maximum protected volume in conditionally closed rooms (m^3): - for Class B fires; - for Class A2 fires	2,8 3,6	5,7 7,2	8,0 10,2	14,2 18,1	25 31,8
4. Time lag of generators operation ,sec., not more than			3,0		
5. Duration of aerosol outflow	4,0±1,0	6,0±1,0	6,0±1,0	9,0±1,5	9,0±1,5
6. Overall dimensions and sizes for fixing, mm, not more than : - length L (with brackets) - diameter D (ejector) - size E - size F	198 90 50 40	198 90 50 40	203 90 50 40	280 125 70 60	320 125 70 60
7. Mass of generator, kg	1,32 ±0,02	1,4 ±0,02	1,46 ±0,02	3,1 ±0,03	3,5 ±0,03
8. Dimensions of fire-safe zones, mm, not less than: - from canister; - from orifices			5 50		
9. Amount of heat (MJ), producing during CAG operation, not more than	0,095	0,19	0,28	0,48	0,84

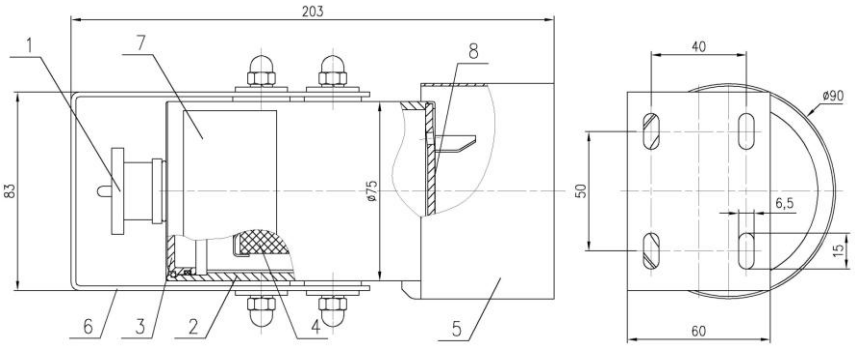
10. Distances (m) from orifices on the length of gas stream where the following temperatures can be fixated: 400 °C 200 °C 75 °C	0,1 0,25 1	0,1 0,3 1,1	0,1 0,3 1,1	0,1 0,5 2	0,1 0,55 2,1
11. Parameters of starting current: - direct current, A, not less than - resistance of starting circuit, Om - impulse duration, ms, not more than - starting voltage,VB, not more than - safe test current , A, не более	0,5 2,5÷5,0 20 26 0,1				

NOTE: The voltage at the output connectors of the electrical ignition device should be in range 2,5 ÷ 30,0 V.

3. SUPPLIED PARTS

3.1. The delivery set (fig.1) includes:

- CAG - 1 pc,
- Electrical activator – 1 pc,
- Cable plug – 1 pc (due to a buyer's desire),
- Mounting bracket – 1 pc,
- User manual - 1 pc (It is permitted to attach one manual for a generators' lot of not more than 10 pc).



1 – Electrical actuator
2 – Canister
3 – Back cover
4 – Aerosol-forming compound
5 – Ejector
6 – Bracket
7 - Label
8 – Front cover with a sticker

Fig.1. Condensed aerosol generator of conical outflow

4. DESIGN STRUCTURE, PRINCIPLE OF OPERATION AND INSTALATION DETAILS

4.1. Design structure is showed at Fig.1.

4.1.1. The generator consists of a cylindrical steel canister (2). The front cover of the cylinder is equipped with discharge outlets, closed with a sticker (8). The back cover (3) has a threaded hole for installing of electrical actuator (1). The charge of aerosol-forming compound (4) is disposed inside the canister in inner container, supported with a spring. The electrical actuator (1) should be screwed up to the back cover (3) of the canister into the fitment bore.

4.2. Principle of operation.

4.2.1. The generator will be activated after receiving an appropriate electrical on the electrical actuation device.

4.2.2. The electrical activator being actuated initiates aerosol-forming compound charge burning.

4.2.3. During the burning of the compound charge the generated gas-dispersed combustion products flow through the discharge outlets and extinguish a fire.

4.3. Installation details.

4.3.1. The generators can be mounted on the walls, floors or on the ceilings of protected objects with the help of the bracket. Arrangement of the holes on the bracket for fastening a generator is shown in Fig. 1.

4.3.2. Before installing take the generator out of the packing and inspect it to the effect that there are no damages on the body (canister 2) and on the electric actuator (1). Check the integrity of the actuator electric circuit by a millimeters (***safe test current should not exceed 0.1A***), extract the choke from the fitment bore in the back cover of the generator and screw in the actuator (1).

4.3.3. Select the place for the generator installation ensuring the absence of any obstacles that might impede aerosol outflow at a distance of about 0.5-0.8 m. Fix the generator with the bracket on the selected place.

4.3.4. Solder the cable of the starting circuit to the mate. Connect it with the cable plug of the electric actuator.

5. HEALTH AND SAFETY REQUIREMENTS

5.1. The generators are limited for use in the places of wide people presence (in the places of mass cultural actions or mass visiting).

5.2. Fire safety precautions (like at use of combustion agents) should be observed during maintenance of generators.

5.3. The personnel who may be expected to operate generators should read this manual and instructive notices printed on the casing (label) and follow their requirements.

5.4. After actuation of the generator any person should not be in the zone of the aerosol flow with the temperature higher than 75 °C.

5.5. People could be in the space filled with fire extinguishing aerosol during 60 sec. and more only if they wear personal protection equipment (respiratory apparatus).

5.6. Particles of fire extinguishing aerosol accumulated on the open surfaces after the generator operation are taken away with a vacuum cleaner,