



Extinguishing Systems Ltd.



**Module of Powder Fire Extinguishing
MPE(n)-50-ST-GE-UZ
TU 4854-009-69229785-2011**



«BURAN- 50ST»

PASSPORT and OPERATION MANUAL

MPKD-V.500000.000PS



Saint-Petersburg
2013

1. DESIGNATION

1.1. The module of powder fire extinguishing "BURAN- 50ST" (further — "The module") is intended for extinguishing by fire extinguishing powders of fires and ignitions of Classes:

- A — fires of solid materials;
- B — fires of highly inflammable and combustible liquids;
- C — fires of gases;
- E — fires of electrical equipment that is under voltage up to 1000 V.

1.2. The Module is an executive mean of fire extinguishing system. One or several modules as units of a system can be used as for fire protection of some separate fire dangerous zones as of all area of a room.

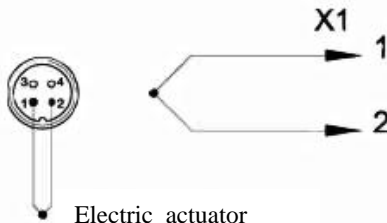
1.3. The Module can be used in the regions of temperate climate with the temperature of ambient air from -50°C to $+50^{\circ}\text{C}$ and the air relative humidity up to 98% at 25C (climatic execution U 3 according to GOST 15150-69).

1.4. The module is related to a Class of stationary fire extinguishers that do not contain ozone-depleting substances.

2. MAIN TECHNICAL CHARACTERISTICS

Denominations, measurement units	Value
1	2
1. Capacity of a body, l	50,0±0,5
2. Mass of fire extinguishing powder, kg, not more than	48,0±2,0
3. Dimensions of a body, mm, not more than: <ul style="list-style-type: none"> • diameter • height (without fasteners) 	300 860
4. Protected area, [m]2, <ul style="list-style-type: none"> • at extinguishing of fires of Class A with height of fixation of sprayers 3+5 m • at extinguishing of fires of Class B with height of fixation of sprayers 3+5 m 	75 60
5. Maximal protected volume, m ³ <ul style="list-style-type: none"> • at Class A extinguishing • at Class B extinguishing 	210 180
6. Specification of the electric igniter circuit: <ul style="list-style-type: none"> • Electric current of guaranteed work, A, not less than • Resistance of the electric circuit, Ohm • Electric current of revise (current of guaranteed non activation), under duration of an impulse of not less than 1 sec., A, not more than • Voltage at external terminals of activation device, V, not more than 	0,7 1,5±0,3 0,2 30

1	2
7. Soldering pattern of socket pins	diagram 1
8. Mark of electric connector for the reciprocal (cable) part of the circuit of the electric igniter	2PM14KПЭ4Г5B1
9. Weight of the assembled module: <ul style="list-style-type: none"> • Nett, kg • Gross, kg, no more than 	75,0±3,7 90,0
10. Area of extinguishing of standard fire of Class B of maximum range (8B) under GOST R 53286-2009, m2	0,25
11. Degree of protection from external influence under GOST 14254-96, not less than	IP54
SPEISIFICATION OF PIPELINES	
Diameter of water- gas- pipe, mm	25
Length of pipeline in horizontal direction, m (no more than)	30
Height of pipeline from a basis of a body, m,(no more than)	5



Sketch 1. Electric actuator.

3. A Delivery Set

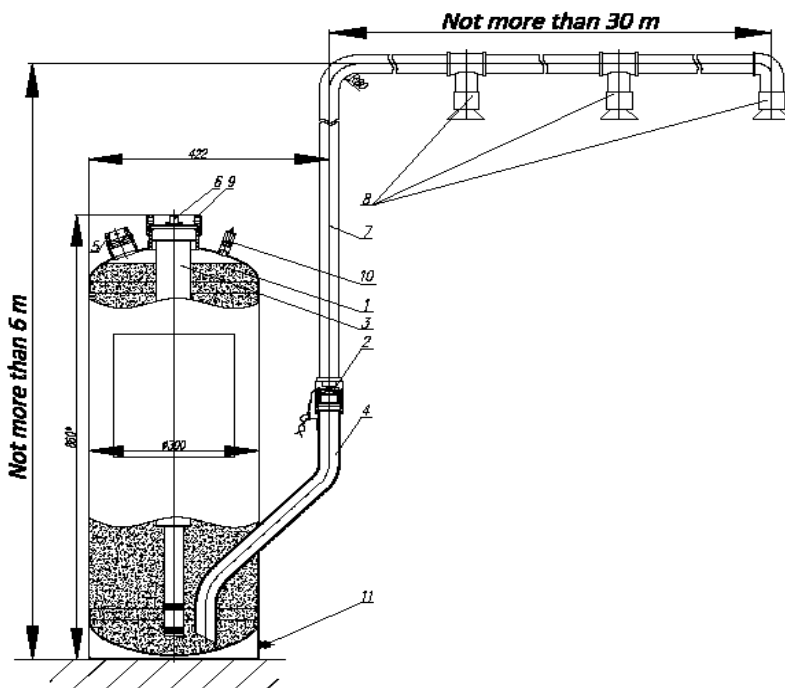
3.1 The delivery set (Drawing 1) includes:

- The assembled Module 1 unit;
- The Passport and Manual.....1 unit;
- Packing...1 unit;
- Sprayers – there type and number should be named when the purchase order is placed
- Cable part of connector.....1 unit.

4. CONSTRUCTION AND OPERATING PRINCIPLE

4.1. The Module (Drawing 1) is a sealed unit that consists of a welded steel body 1, filled with a fire extinguishing powder, a gas generator 3 mounted inside the body 1 and an outlet pipe 4 welded into a body. An outlet pipe is closed by membrane unit 2. The discharge opening of a membrane unit 2 has an internal thread G 1" (the membrane unit is closed by a cap for transportation) for joint of pipeline for fire extinguishing powder supply 7. A feeding throat 5 is intended for swamping the body 1 with a powder. The throat is welded into upper part of a body and is equipped with a cap. The upper part of a body is equipped with a safety device 10.

4.2. The Module when it is mounted like a part of a fire extinguishing system is not pressurized. Discharge of the Module takes place when a fire is detected and a voltage is supplied into an electric circuit of electric igniter of a gas generator 3. A minimum voltage is calculated from an electric resistance of a circuit of an igniter and wires of a start line as well as of an electric current guaranteed start.



Drawing 1. Sketch of the Module of powder extinguishing "Buran 50ST".

1 – a body with a fire extinguishing powder, 2 – a membrane unit, 3 – a gas generator, 4 – an outlet pipe, 5 - a feeding throat with a cap, 6 – a connector of an electric igniter, 7 – a pipeline for fire extinguishing powder supply, 8 - sprayers, 9- a union nut, 10 - a safety device, 11 – ground unit (bolt M6x12, nut M6, nut grower, two washers)

4.3. When a gas generator 3 works an intensive gas production takes place that make pressurization of a body 1 and aeration of powder that is inside of a body. When pressure inside a body 1 exceed some specific level a breakthrough of membrane in a membrane unit 2 is made and a fire extinguishing powder is delivered to a protected object through a pipeline 7 and sprayers 8.

5. PRECAUTIONARY MEASURES.

5.1. The persons admitted to the operation of module must study the content of present manual, the instructional inscriptions, substituted on the body of module and observe their requirements.

5.2. The fire-extinguishing powder thrown out of the module is removed as soon as possible with the aid of a vacuum cleaner, brush, moist rag or washed off by water. It is recommended to collect the removed powder into plastic bags or some other waterproof tanks. Further utilization of collected powder should be made according to regulations "Utilization and regeneration of fire extinguishing powders" issued by VNIPO in 1998 or by specialized company. During cleaning it is recommended to use the means of protection for breathing organs (respirator, gauze bandage), protective glasses, rubber gloves, overall. In the case of the powder particles hit into eyes, it is necessary to immediately wash eyes by a large quantity of water.

5.3. Dismantling, repair and recharge of module are permitted for those who studied module structure and principle of its operation and who received admittance for independent work in the established order at the specialized enterprise.

5.4. It is not allowed:

- arrangement of module near the heaters;
- connection of the Module to any electric power supply before it's regular mounting at an object;
- use of the Module after the impact actions, which led to the deformation of the body or to it's depressurization;
- use of the Module with destroyed manufacturer's sealing and with damages of a body, membrane and wires of a start circuit;
- operations with the Module that is connected with electric start circuit when the circuit is under voltage.

6. Application at the Object

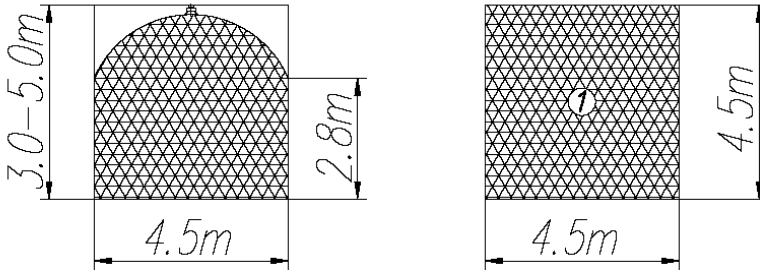
6.1. The Module is placed directly in the protected object (accommodation) and is mounted on the floor. Placement of the Module is possible on other levels with use of stands or fixation to vertical frames at an object. Wherein fasteners should bear static capacity in vertical not less than 400 kg (4000N), and the axis of the Module should not hade more than 10°.

6.2. Three schemes of mounting of sprayers are recommended for use. These schemes provide different shape of powder spraying and of the areas of fire extinguishing. If one object is protected by several modules there sprayers should be placed evenly, with given of providing of spraying of fire extinguishing powder into all the area of the object. Maximum height of mounting of sprayers should not exceed 5 m. Sketches of fire extinguishing zones are shown at drawings 2-5.

6.3. In scheme 1 three sprayers of one type RKN-95-14,5-3/4 are shown – Drawing 7. Shape of fire extinguishing zone for one of the sprayers is at Drawing 2.

Scheme 1

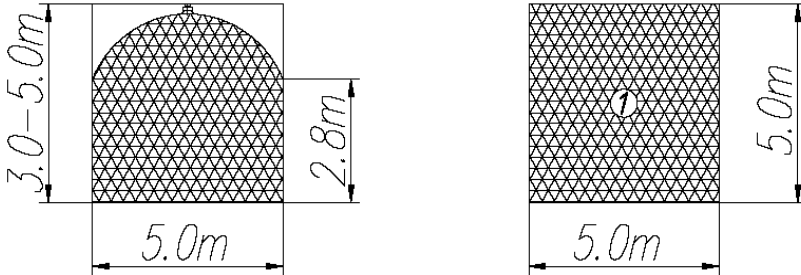
Area of extinguishing - $20m^2$ Volume of extinguishing - $60m^3$



For Class B fires

Area of extinguishing - $25m^2$

Volume of extinguishing - $70m^3$



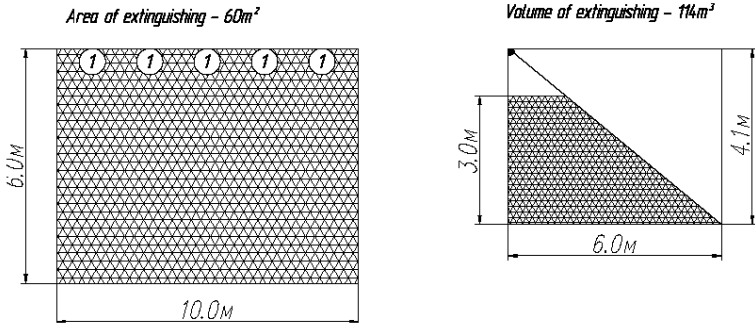
For Class A fires

(* 1 – sprayer RKN-95-14,5-3/4)

Drawing 2. Shape of fire extinguishing zone.

6.4. In Scheme 2 five sprayers RKN-95-14,5-3/4 (see drawing 7) mounted along the longest side of the room are shown. Drawings of fire extinguishing zone are at drawing 3.

Scheme 2

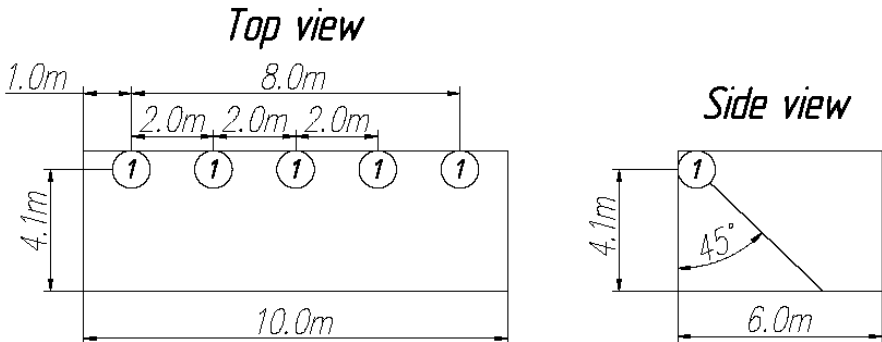


(* 1 – Sprayer RKN-95-14,5-3/4)

Drawing 3. Shape of fire extinguishing zone of Class A and Class B fires.

The recommended placement of sprayers under scheme 2 is at Drawing 4. Angle between axis of a sprayer and a vertical should be 45°.

Scheme 2

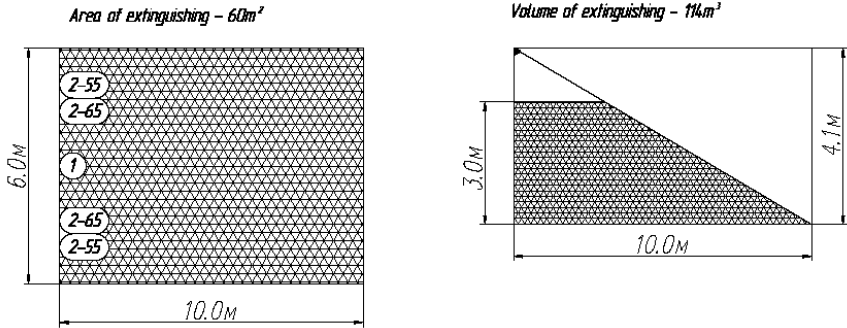


(* 1 – Sprayer RKN-95-14,5-3/4)

Drawing 4. Five sprayers placed along the longest side of the room

6.5. In Scheme 3 four sprayers RSN-19-14,5-3/4 (see drawing 8) and one sprayer RKN-95-14,5-3/4 (see drawing 7), that are placed along short side of the room are shown. Sketches of fire extinguishing zone are at drawing 5.

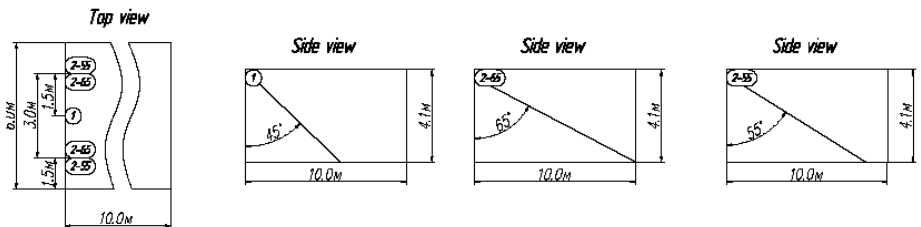
Scheme 3



(* 1 – Sprayer RKN-95-14,5-3/4; 2-55, 2-65 - Sprayer RSN-19-14,5-3/4)
 Drawing 5. Shapes of zones of fire extinguishing of Classes A and B.

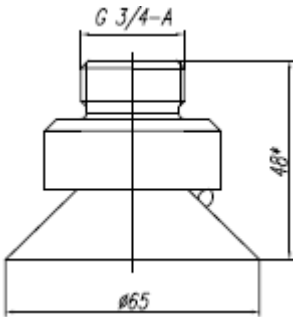
Recommended placement of sprayers under scheme 3 and angles of there axis are shown at Drawing 6.

Scheme 3

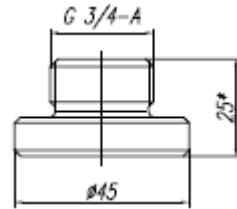


(* 1 – sprayer RKN-95-14,5-3/4; 2-55, 2-65 – sprayer RSN-19-14,5-3/4)

Drawing 6. Five sprayers placed along the shortest side of the room, Scheme 3.



Drawing 7. Sprayer
RKN-95-14,5-3/4.



Drawing 8. Sprayer
RSN-19-14,5-3/4

7. PREPARATION FOR WORK

7.1. To prepare module for the installation one should unpack it and check the package.

7.2. Mount the Module at the designed space and fix the Module.

7.3. Remove the transportation cap from the diaphragm unit 2 (drawing 1) and with the help of the fittings connect the Module to the powder feeding piping 7. For the connection to the piping 7 diaphragm unit 2 has an outlet with the thread G 1 ".

7.4. Connect the socket cable part with electric fuse socket 6. To check the integrity of entire circuit by a fire alarm control and indicating device or by a special instrument.

7.5. Ground a body of the Module by ground unit (11 at drawing 1).

Attention! The current of checking must be not more than 0.2 A.

8. MAINTENANCE

8.1. The Module does not need special technical services.

8.2. Ones per three months the integrity of a body, of sprayers and of sealing should be checked.

8.3. A body of the Module should be cleaned periodically from dust and dirt by moistened cloth.

8.4. Five years after filling of the Module by powder a technical examination of the Module should be made. Within the examination the Module should be disassembled and condition of a powder, a gas generator, a membrane unit, a safety device should be checked and the inside surface of the body should be checked as well. Technical examination should be made by specialized organization that have a license for making these type of works.

8.5. Order of works of technical examination, repair and re-filling of the Module is described in "Instructions on service, repair and re-filling of MPP "Buran 50 ST".

9. STORAGE AND TRANSPORTATION

9.1. Conditions for transportation and storage in the part of the climatic factors influence should be according to GOST 15150-69.

9.2. The Module must be stored and be transported in the packing. In this case the conditions preventing the Module from mechanical damages, direct action of solar rays, moisture and aggressive surroundings, must be provided.

9.3. The Module can be transported by all modes of transport to any distance in accordance with the rules of transportation of Cargo, that are valid for a specific mode of transport.

10. The Changes

Because of permanent perfecting of the Modules of powder fire extinguishing the manufacturer has the right to make changes in design of the Product that are not mentioned in the present passport. These changes do not decrease the quality of consumer of the Product.

11. Certificate of Acceptance

The Module of Powder Fire Extinguishing «Buran 50ST»,

Manufacturer's № _____,

corresponds to technical norms TU 4854-009-69229785-2011 and is recognized as suitable for operation.

The date of manufacture of the Module _____

Signature _____

Stamp of Technical Control Group

Filling with fire extinguishing powder:

Type of the Powder	Mark	TU Number	Weight, kg
P-FKChC-2		TU 2149-131-10964029-2000 with changes 1-3	53,0±2,6
P-FKChC		TU 2149-084-10964029-98 with changes 1-4	48,0±2,4
Fenix ABC		TU 2149-005-18215408-2000 with change 1	47,0±2,3
VECSON-ABC-50		TU 2149-028-10968286-97 with changes 1-3	48,0±2,4
VECSON-BC		TU 2149-086-10968286-2000	48,0±2,4

Is made

Date _____

Signature _____

Stamp of Technical Control Group

12. GUARANTEE

12.1. Manufacture guarantees the correspondence of the module characteristics to the technical requirements TU 4854-009-69229785-2011 with the compliance by the users of the regulations for the transportation, storage and operation.

12.2. Warranty period of the Module is 24 months from the date of delivery to the Client or from the date of sale through distributor net provided that the rules of exploitation named in the present TU are observed.

12.3. The service life of the Module is 10 years after acceptance by Technical Control Group. With the purpose of improvement of the characteristics of the Module the manufacturer has the right to make changes in design of the Product and in a mark of the fire extinguishing powder.

13. Data on filling, technical examination and repair

The date	Type of works	Implementer (Company, Name)	Signature and stamp of the company

14. Reference Mark of a Trade Company

Date of sale _____

Name of a Trade Company _____

Signature _____

Seal

Manufacturing Company:

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