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**POWDER FIRE EXTINGUISHING MODULE  
MPP(N)-4-I-GE-U2  
Passport and  
Manual instructions**



## 1 PURPOSE

1.1 Powder fire extinguishing module MPP(N)-4-I-GE-U2 (hereinafter referred to as the MPP) is intended for automatic smothering fires, Class A (solids), B (liquids), C (gases) and E (electric equipment under voltage regardless of the breakdown voltage of fire extinguishing powder).

1.2 The MPP is not designed to extinguish the ignition of substances that can burn without air access.

1.3 The MPP is intended to extinguish both the local and volume fire in the room.

1.4 The MPP can be made in normal version at operating temperatures of minus 50°C to plus 50°C or in special version at operating temperatures of minus 50°C to plus 90°C. The MPP is allowed to operate at relative humidity 95%.

1.5 The fire extinguishing powder is ejected by the gas generated with a cold gas source CGS-4(M)-01 SIAB 066614.023.000 TU.

1.6 The MPP is a reused-product.

1.7 Examples of the MPP marking (model) records when ordered:

- MPP (N)-4-I-GE-U2 TU 4854-009-54572789-04 in normal version at temperatures of minus 50°C to plus 50°C;
- MPP (N-T)-4-I-GE-U2 TU 4854-009-54572789-04 in special version at temperatures of minus 50°C to plus 90°C.

## 2 TECHNICAL CHARACTERISTICS

2.1 Technical characteristics of the MPP are given in Table 1.

Table 1

Name	Value
1 Case capacity, lit	4.3±0.1
2 Dimension, mm, not more than:	
- diameter	280
- height (with installation bracket)	195
3 Total weight of the MPP, kg, not more than	7
4 Fire extinguishing powder ISTO-1 weight, TU 2149-001-54572789-00, kg	4.0±0.2
5 MPP fast action (time from the moment of sending impulse to a triggering element of the MPP to the moment of ejecting extinguishing powder out of the module), s	of 4 to 10
6 Operating time (time of ejecting extinguishing powder), s, not more than	1



Table 1 to be continued

NOTES: \*) – surface area (S) to be protected for fires from height (H) of 2 to 3 m is calculated according to the formula:  $S = 10 + 2 \cdot (H-2)$ , from the height (H) of 3 to 6m based on formula:  $S = 12 - 0.67 \cdot (H-2)$ ;

\*\*) – fire extinguishing ability has been validated in the room with a base of 6.2×25 m and 6.0m high for fires, Class A (a rectangle 6.3×6.5m, surface area 40m<sup>2</sup>, was limited with sheet 3m high) and for Class B (square 4×4m, surface area 16 m<sup>2</sup>, was limited with two sheets 1.5m high);

\*\*\*) – according to NPB 67-98 model sites, ranks 233B and 144B are the surfaces of burning petrol (benzine) as circles with diameter 3.05m and 2.4, respectively, having the surface area as 7.32 m<sup>2</sup> and 4.52 m<sup>2</sup>, respectively.

### 3 COMPLETENESS OF SET

3.1 The MPP set to be supplied consists of:

- a) The module MPP TU 4854-009-54572789-04 –1 item;
- b) Passport and Manual instructions - 1 copy.

### 4 DESIGN AND OPERATION PRINCIPLE

4.1 The MPP design

4.1.1 The MPP (See Figure 1) consists of a case **1** where fire extinguishing powder (OP) **2** and cold gas source (CGS) **3** with electric triggering element **4** are placed. In the bottom of the case there is a nozzle-sprayer **5**, the output hole of it is closed by membrane **6**. The module has grounding clamp **7**. In the upper part the MPP is fitted with bracket **8** to fasten to the ceiling.



## 5 SAFETY MEASURES

5.1 The staff who was allowed to operate the MPP should study this Passport and observe its requirements.

5.2 It is not allowed:

- keeping and installing the MPP near heat sources;
- effecting rainfalls, direct sunlight, aggressive media, and moisture on the MPP;
- shocking the case and the CGS;
- dropping from the height more than 1.5 m;
- dismantling the MPP, except for maintenance work according to Section 7 of the present Passport;
- using the MPP with damaged case (dents, cracks, through holes).

5.3 Before connecting the module, the output ends of the triggering unit should be closed by twisting not less than twice and sealed. Connect the MPP only after its grounding. The outputs of the triggering unit of the normal version MPP should be placed separately into fluoroplastic tubes with inner diameter 2...5 mm. Electric safety while assembling the MPP should be provided by meeting the requirements PUE, PTE, PTB and PZSE

5.4 Loading, reloading, certification and technical maintenance should be carried out in the rooms specially equipped and designed for it at the MPP factory-manufacturer or stations of maintenance having the license of the State fire fighting service.

5.5 After detecting the module defects (dents, cracks, through holes) during the operation or after its service life, the module should be sent to the factory-manufacturer for utilization.

5.6 While operating the module is fire- and explosion-proof.

5.7 Fire extinguishing powder has no harmful effect on the body and clothes of people, does not cause damage to property and is easy-to-remove. Extinguishing powder waste utilization should be made according to the instruction: Utilization and Regeneration of Fire Extinguishing Powders M:VNIPO, 1988.

5.8 The bearing construction, the MPP is fastened to, should sustain the impulse load from the module kick at the moment of OP ejecting equal to 1200N.

## 10 CERTIFICATE OF ACCEPTANCE AND SALE

The fire extinguishing module

MPP(N)-4-I-GE-U2  MPP(N-T)-4-I-GE-U2  
(tick off the necessary)

corresponds to the requirements of TU 4854-009-54572789-04 and is considered to be fit for use.

Batch No \_\_\_\_\_

Manufacturing date \_\_\_\_\_  
(month, year)

Signature and Inspector stamp \_\_\_\_\_

Sold \_\_\_\_\_  
(name of the Seller)

Sale date \_\_\_\_\_

Shop stamp

## 9 WARRANTY

9.1 The factory-manufacturer guarantees the correspondence of the MPP to the requirements of technical conditions if the Customer observes operation, transportation and storage conditions.

9.2 Service life is stated to be:

- 10 years for MPP(N)-4-I-GE-U2;
- 5 years for MPP(N-T)-4-I-GE-U2.

and is estimated from the date of accepting the MPP by Quality Department of the factory-manufacturer.

9.3 Guaranteed MPP service life is stated from the date of the MPP sale:

- 2 years for MPP(N)-4-I-GE-U2;
- 1 year for MPP(N-T)-4-I-GE-U2.

9.4 The factory-manufacturer is not responsible for:

- misoperation if the owner does not observe operation rules;
- negligent storage and transportation of the MPP;
- passport loss;
- after performing certification, reloading the MPP under item 7.3 if they were not carried out at the factory-manufacturer;
- expiration of the service life stated from the date of accepting the MPP by Quality Department of the factory-manufacturer.

## 6 PREPARATION OF THE MPP TO OPERATION, LAYOUT AND MOUNTING

6.1 Unpack the MPP, and examine the integrity of case and membrane.

6.2 Fasten the bracket **8** (See Figure 1) on the ceiling. Positions of holes in the bracket intended to fasten the MPP on the ceiling are given in Figures 2a or 2b.

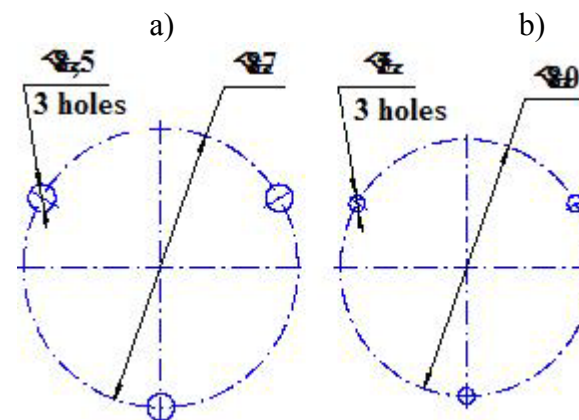


Figure 2

6.3 Connect the MPP with the bracket and fasten with nuts.

6.4 The number of modules in the rooms protected should be defined in accordance with section 8 NPB 88-2001.

6.7 While protecting separate surface parts, i.e. at local protection in rooms or under shelter at the height of installation (H) to 3.5 m, the local surface area (S) equals 7.32 m<sup>2</sup>, from the height 7m is 4.52m<sup>2</sup>, from the height of 3.5 to 7.0m is defined according to the formula  $S=7.32-0.8 \cdot (H-3.5)$ . The local protection surface is a circle.

6.8 The configuration of powder spraying and the area image, where smothering is achieved, are given in Figure 3 and in Table 2. For the MPP mounted in the room at a height of 2.5 to 4m the parameters of spraying are given in Table 3.

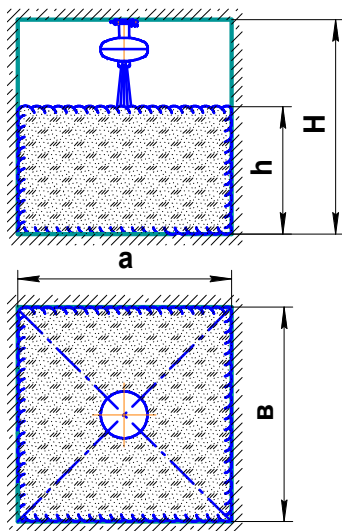


Figure 3

Table 2

Parameters	Class A	Class B		
		2	3	6
H, m	От 2 до 9	2	3	6
S, m <sup>2</sup>	35	10	12	10
V, m <sup>3</sup>	70	-	-	-
a, m	5.83	3.16	3.46	3.16
b, m	6.0	3.16	3.46	3.16
h, m	2.0	-	-	-

Table 3

Parameters	Class A	Class B
S, m <sup>2</sup>	40	16
V, m <sup>3</sup>	100	-
a, m	6.33	4.0
b, m	6.33	4.0
h, m	2.5	-

## 7 MAINTENANCE

7.1 Special technical maintenance is not required. Examine the integrity of the disk (membrane) closing the MPP nozzle-sprayer and the MPP grounding available **once a quarter**. If the disk (membrane) is not intact (damage, holes of puncture, cracks), replace the module.

7.2 Reloading after operating the MPP should be carried out by the MPP factory-manufacturer or at special stations for reloading powder fire extinguishers.

7.3 While reloading and assembling the MPP after its operation, it is necessary to use CGS 3 (Figure 1) CGS-4(M)-01 CIAB 066614.023.000 TU, fill in the MPP case with fire extinguishing powder and place the membrane 6 (Figure 1) made according to the drawing (Figure 4), Sheet AMuH2-0.5 GOST 21631-76. After placing the membrane, tighten the nut 9 (See Figure 1) under load  $(150 \pm 10) \text{N} \cdot \text{m}$ .

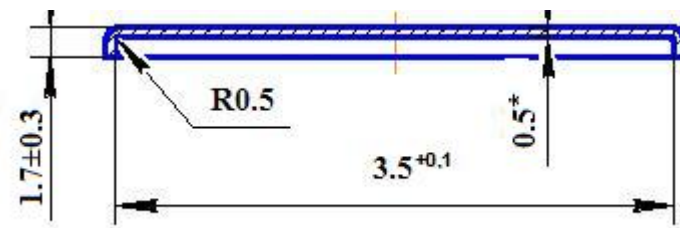


Figure 4

7.4 Record the results of tests and reloading on the MPP and in its Passport (See Annex A).

## 8 STORAGE AND TRANSPORTATION

8.1 The MPP transportation and storage conditions should meet the requirements of OG-4 GOST 15150-69.

8.2 The MPP transportation in the factory packing at temperatures of minus 50°C to plus 50°C is allowed by all kinds of transport according to the rules of transporting the goods by this kind of transport and taking into account transport conditions – harsh environment (G), GOST 23170-78.

8.3 When stored and transported the MPP, conditions preventing them from mechanical damage, direct sunlight, rainfalls and aggressive media should be provided.