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ГОСТ Р ИСО 9001



**POWDER FIRE EXTINGUISHING MODULE**

**MPP (N)-10-I-GE-U2**

**Passport and  
Manual instructions**



**1 PURPOSE**

1.1 Powder fire extinguishing module MPP(N)-10-I-GE-U2 (hereinafter referred to as the MPP) is intended for automatic smothering fires, Class A (solids), B (liquids), C (gases) and E (electrical equipment under tension without taking into account the value of firefighting powder discharge voltage).

MPP can be equipped with electronic activation device during the usage of which a module obtains a function of self-activation and can be used as an autonomous powder fire-extinguishing mean.

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 seats of fire and fires on square and in volume in the room.

1.4 The MPP can be performed in normal version with operating temperatures of minus 50°C to plus 50°C, in special version at operating temperatures of minus 60°C to plus 90°C, or in wide temperature operation range of minus 60°C to plus 125°C. MPP operation is allowed under relative humidity not more than 95% when temperature is 25°C.

1.5 The fire extinguishing powder is ejected by the gas generated with a cold gas source CGS-10(M) SIAV 066614.025.000 TU.

1.6 The MPP is a reused-product.

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

MPP(N)-10-I-GE-U2, TU 4854-012-54572789-06 in normal version at temperatures of minus 50°C to plus 50°C;

MPP(N-T)-10-I-GE-U2, TU 4854-012-54572789-06 in special version at temperatures of minus 60°C to plus 90°C;

MPP(N-T1)-10-I-GE-U2, TU 4854-012-54572789-06 in wide temperature operation range of minus 60°C to plus 125°C.

**ANNEX A**  
(obligatory)

THE RESULTS OF TECHNICAL MAINTENANCE  
Table A.1 - Information about reloading, reexamination

Date	Work to do	Executive (company, name)	Executive's signature and stamp

The alterations not given in the present passport and not affecting the principal technical characteristics, dimension and connecting sizes can be introduced into the module design.

- 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.

### 10 CERTIFICATE OF ACCEPTANCE AND SALE

The fire extinguishing module

MPP(N)-10-I-GE-U2                       MPP(N-T)-10-I-GE-U2

MPP(N-T1)-10-I-GE-U2

(tick off the necessary)

corresponds to the requirements of TU 4854-012-54572789-06 and is considered to be fit for use.

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

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

Inspector signature and stamp \_\_\_\_\_

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

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

Shop stamp

## 2 TECHNICAL CHARACTERISTICS

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

Name	Value
1 Case capacity (with the CGS mounted), lit	9.2 <sup>-0.5</sup>
2 Dimension, mm, not more than: - diameter - height	240 340
3 Total weight of the MPP, kg, not more than	17
4 Fire extinguishing powder ISTO-1 weight, TU 2149-001-54572789-00, kg	9.5±0.3
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 3 to 10
6 Operating time (time of ejecting extinguishing powder), s, not more than	1
7 Pressure of membrane rupture, MPa	2.0 <sup>+0.1</sup>
8 Fire extinguishing ability of the MPP: 8.1 Surface area (S) to be protected for fires, Class A, m <sup>2</sup> 8.2 Volume (V) to be protected for fires, Class A at the ceiling height to 15 m, m <sup>3</sup> 8.3 Surface area (S) to be protected for fires, Class B, m <sup>2</sup> 8.4 Volume (V) to be protected for fires, Class B, m <sup>3</sup>	36 216 18.3 75
9 Circuit characteristics of electric triggering unit for MPP(N)-10, MPP(N-T)-10 modifications: - safe current of testing circuit, A, not more than - operating current, A, not less than: - electric resistance, Ohm	0.03 0.2 8...16
10 Circuit characteristics of electric triggering unit for MPP(N-T1)-10 modification: - safe current of testing circuit, A, not more than - operating current, A, not less than: - electric resistance, Ohm	0.2 0.6 2...5
11 Irregularity coefficient of spraying powder K <sub>1</sub> (SP 5.13130.2009)	1.0

### 3 COMPLETENESS OF SET

3.1 The MPP set to be supplied consists of:

- a) The module MPP TU 4854-012-54572789-06 –1 item;
- b) Passport and Manual instructions - 1 copy;
- c) MPP package –1 item.

### 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** or **4** with electro-triggering element **5** are placed. CGS **3** is purposed for MPP(N)-10 and MPP(N-T)-10; CGS **4** – for MPP(N-T1)-10. In the upper part of the case there is a nozzle-sprayer **6** that can operate as a siphon pipe when ejecting OP from the case. The output hole of the nozzle-sprayer is closed by membrane **7**. The module has grounding clamp **8**. In the lower part the MPP case is fitted with three supports (legs) **9** to install on the floor.

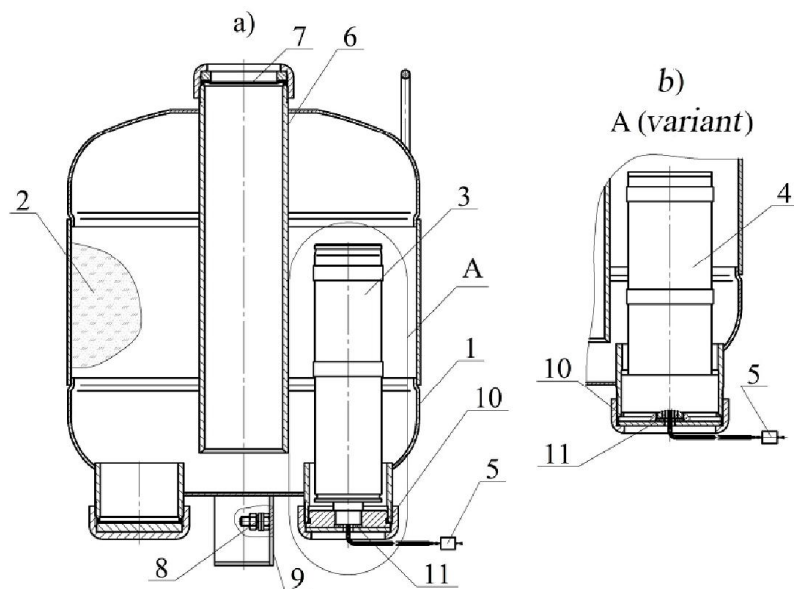


Figure 1

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.

### 9 MPP UTILIZATION AFTER FIXED SERVICE LIFE EXPIRATION

9.1 Utilization works should be made by MPP factory-manufacturer or in organizations having a license for this kind of activity.

9.2 Disassemble MPP.

9.3 MPP frame utilization is made by means of taking to scrap metal.

9.4 Firefighting powder utilization is made according to paragraph 5.7 requirements.

9.5 CGS utilization should be made according to the following instructions.

9.5.1 Actuate CGS in premises equipped with supply-and-exhaust ventilation. For this purpose CGS is placed in a clamp, connected to a direct current power source, which is correspondent to p. 9 or p. 10 of Table 1. The launch is made distantly without any people inside.

9.5.2 After launching make sure that the premises are ventilated till safe concentration or enter using isolating protective breath means, draw CGS from the clamp using thermo protective gloves, and then utilize according to the requirements of p. 5.8.

### 10 WARRANTY

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

10.2 Service life is stated to be:

- not more than 10 years for MPP(N)-10-I-GE-U2;
- not more than 5 years for MPP(N-T)-10-I-GE-U2;
- MPP(N-T1)-10-I-GE-U2,

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

10.3 The factory-manufacturer is not responsible for:

- misoperation if the owner does not observe operation rules;
- negligent storage and transportation of the MPP;

## 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 The delivery set for MPP(N)-10, MPP(N-T)-10 reloading (see Figure 1):

- CGS-10 (M)-01 SIAV 066614.025.000 TU for MPP of normal version; CGS-10(M)-02 SIAV 066614.025.000 TU for MPP of special version (see item 3 on Figure 1) – 1 item;

- rubber ring 050-054-25 GOST 9833-73 (see item 10 on Figure 1) – 1 item;

- rubber gasket of SIAV 634233.006.023 drawing (see item 11 on Figure 1).

- fire-extinguishing powder ISTO-1 TU 2149-001-54572789-00 (see item 2 on Figure 1) – 9.5 kg;

- membrane of SIAV 634233.006.003 drawing (see item 7 on Figure 1) – 1 item.

7.4 The delivery set for MPP(N-T1)-10 reloading (see Figure 1):

- CGS-10(M)-06 SIAV 066614.025.000 TU (see item 4 on Figure 1) – 1 item;

- rubber ring 058-062-25 GOST 9833-73 (see item 10 on Figure 1) – 1 item;

- rubber gasket of SIAV 634233.006.023 drawing (see item 11 on Figure 1) – 1 item;

- fire-extinguishing powder ISTO-1 TU 2149-001-54572789-00 (see item 2 on Figure 1) – 9.5 kg;

- membrane of SIAV 634233.006.003 drawing (see item 7 on Figure 1) – 1 item.

7.4 After MPP checking and reloading notes are made on MPP case (with a label or ticket fastening) and in MPP manual (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

4.1.2 The MPP actuates with the help of current impulse that can be generated by:

- receiving/control, fire alarm, and safeguard devices;

- manual start button;

- self-contained signaling-and-triggering devices (for example, signaling-and-triggering independent automatic device for fire extinguishing setups USPAA-1 TU 4371-032-00226827-99, signaling-and-triggering device USP-101 TU 4371-004-21326303-96), detecting-and-triggering device “Pulsar-31” TU 4371-025-26289848-07).

## 5 SAFETY MEASURES

5.1 The staff allowed to work with the module should study this Passport and Manual instructions.

5.2 It is not allowed:

- keep and install the MPP near heat sources;

- rainfalls, direct sunlight, aggressive media, moisture;

- shocking the case and CGS;

- dropping from the height more than 2 m;

- dismantling the MPP, except maintenance work according to Section 7 of the present Passport;

- use of the MPP with damaged case (dents, cracks, through holes);

- performing of any fire tests without experimental works program concordance or in case of absence of company-manufacturer representative.

5.3 Before switching ON 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 grounding. Electric safety while assembling the MPP should be provided by observing the requirements PUE, PTE, PTB, and PZSE.

5.4 Loading, reloading and technical maintenance of modules should be performed in the rooms specially equipped and designed for these purposes at the factory-manufacturer of the MPP or in organizations having a license for such kind of activity.

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 or utilized according to p. 9.

5.6 When using 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. After MPP actuation to remove the combustion products and fire extinguishing powder in the air it is necessary to use general ventilation. It is allowed to apply mobile ventilations sets for this purpose. The powder fell is removed by

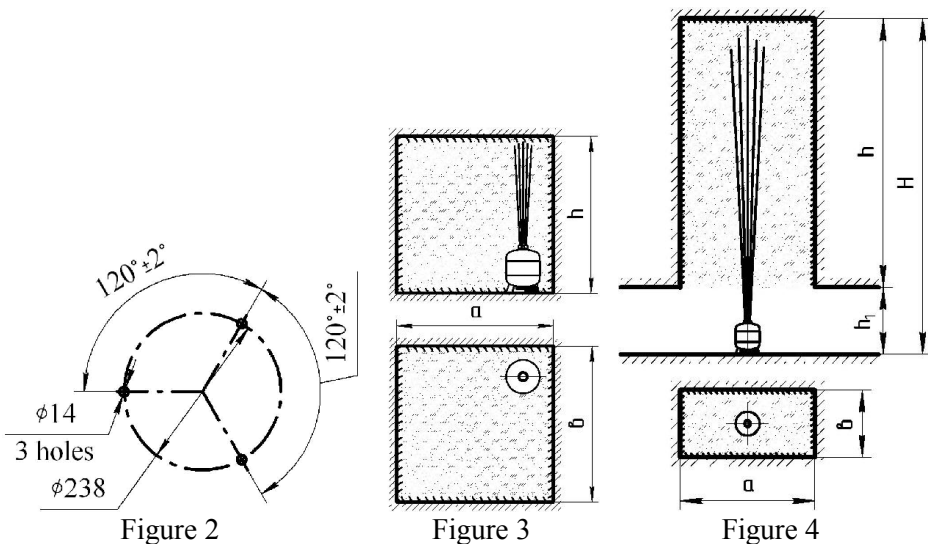
vacuum cleaner, dry rag followed by wet cleaning. Extinguishing powder waste utilization should be made according to the instruction: "Utilization and Regeneration of Fire Extinguishing Powders", Moscow: VNIPO, 1988.

5.8 CGS utilization after actuation should be made by means of device taking to scrap metal.

## 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 Install the MPP on the floor in any place of the area protected, if necessary, fasten it to the floor. Coordinates of holes to fasten the MPP on the floor are shown in Figure 2. If there is a cathead on the ceiling, the MPP should be placed under the cathead for gas/powder jet to hit it.



6.3 The calculation of the necessary number of modules in the rooms protected should be made in accordance with Section 9 SP 5.13130.2009.

6.4 The configuration of powder spraying and the area image, where smothering is achieved, are given in Figures 3, 4 and in Table 2

Table 2

Parameters	Class A (see Figure 3)	Class A (see Figure 4)	Class B
<b>S, m<sup>2</sup></b>	36	-	18.3
<b>V, m<sup>3</sup></b>	216	216	75
<b>a, m</b>	6.0	6.0	2.9
<b>b, m</b>	6.0	3.0	6.3
<b>h, m</b>	6.0	12	4.1
<b>h<sub>1</sub>, m</b>	-	3.0	-
<b>H, m</b>	-	15	-

### NOTES:

a) While calculating the surface and the volume to be protected, it is allowed to assume, that  $a = b = 4.27$  m for fires Class B;

b) While calculating the volume to be protected (Figure 4), it is allowed to assume, that  $a = b = 4.2$  m;

c) it is allowed to perform extinguishing of the volume protected 216 m<sup>3</sup> for fires Class A at the ceiling height up to 15m (for example,  $a = b = 3.8$  m at the ceiling height  $h=15$ m), and extinguishing of the volume protected 75 m<sup>3</sup> for fires Class B at the ceiling height up 4.1m<sup>3</sup>.