

ZAO PO SPETSAVTOMATIKA



ОП014



INDEPENDENT AUTOMATIC ALARM-RELEASE DEVICE FOR FIRE FIGHTING SYSTEMS

USPAA-1

TECHNICAL DATA SHEET
DAE 100.249.000 PS

Signatures and signing date are provided in DAEK 3095-10 UD

Biysk 2010

1 GENERAL INFORMATION ABOUT DEVICE

1.1 Independent automatic alarm-release device for fire fighting systems USPAA-1 (hereafter referred to as Device) is designed for protection of objects (offices, apartments, commercial structures, warehouses, garages and so on), where people may attend against fires by means of temperature control in protected area and for generating sound-and-light alarm and control signals for fire fighting systems control according to requirements of the Code of Regulations SP 5.13130.2009.

1.2 The device is designed for use in connection with fire fighting modules like Buran, Mangust, Tungus, Uragan and similar.

1.3 The Device is manufactured as Climatic Version U3.1 according to GOST 15150-69, but for use inside the premises at ambient temperature range of -40 - $+50^{\circ}\text{C}$. The device is resistant to ambient temperatures of -50 - $+75^{\circ}\text{C}$.

2 MAIN TECHNICAL DATA AND CHARACTERISTICS

2.1 Power supply: two built-in 3V CR 2032 batteries. Stand-by time after installation with one (Energizer) battery set: not less than 10 years.

2.2 In stand-by mode the Device provides temperature control in protected area without consumption of power supply current. Maximum consumed power in the Control and Fire modes (except for Start mode): 30 megawatt. Maximum consumed current: 0.005 A.

2.3 Frequency range of the signalling device is 0.8 - 5.0 KHz.

2.4 Noise pressure of the signalling device: not less than 60 dB within 1 meter.

2.5 The Device is designed for use with electrical ignitor with rated resistance of 1.5 - 16 Ohm.

2.6 When generating the Start command the Device with power supply of the rated characteristics provides the following characteristics:

- maximum current of the start circuit at load of 1.5-5.1 Ohm not less than 1 A;
- maximum current of the start circuit at load of 1.5-16 Ohm within 10 ms not less than 0.3 A;
- pulse energy at load not less than 8 mj within 10 ms.

2.7 Maximum current in electrical ignitor circuit in Control mode is not more than 60 uA.

2.8 Temperature level when "Fire1" alarm signal is generated: 60°C .

2.9 Temperature level when "Fire2" alarm signal is generated: 70°C .

2.10 The Detector is resistant to sinusoidal vibrations with frequency of 10-150 Hz and acceleration of 0.5 g.

2.11 The Device corresponds to Class III according to GOST 12.2.007.0-75.

2.12 Ingress protection rating according to GOST 14254-96: not lower than IP54.

2.13 The Device is intended for multiple use and suitable for recovery, repair and maintenance.

2.14 The Device is resistant to electromagnetic interference of not lower than 4th hardness degree according to GOST R P50009-2000.

2.15 Average service life of the Device: minimum 10 years.

2.16 Weight, kg, not more than 0.2.

3 DELIVERY SET

3.1 Delivery set consists of the following:

- USPAA-1 DAE 100.249.000 Device with wall plate 1 pc;
- DAE 100.249.000 PS Technical Data Sheet 1 pc;
- CR 2032 Batteries 2 pcs.

Note: MS-1 v4.1, MS-1 v4.2, MR-1 v2 modules, PDP-1 v2 control unit: upon customer's request.

4 DESCRIPTION OF THE DEVICE AND PRINCIPLE OF OPERATION

4.1 The Device consists of top grating cover, base and electronic module located inside the device under the protection cover. On the circuit board of the electronic module there are "Control" button, LED indicator, two temperature switches, battery compartment, XP1 bridge (for activating start delay) and XP2 bridge (for switching off power), contacts for connecting electrical ignitor and piezoceramic radiator (on plastic mount). For instant switching off power of the Device there is the thread provided connecting the top cover with XP2 bridge (through the hole in protection cover).

4.2 In stand-by mode the Device provides temperature control in power off state (because normally open contacts of the first temperature switch are open and "Control" button is released).

4.3 When the "Control" button is pushed in stand-by mode the control of start circuit continuity is provided:

- if the start circuit is in operational state the Device generates (single) sound-and-light Normal signal;
- if the start circuit is broken the Device generates (alternate intermittent frequency and telephone tone modulated) "Emergency 1" signal without control of battery power supply;
- if the device battery is discharged while the start circuit is in operable condition the Device generates (intermittent frequency modulated and intermittent light) "Emergency 2" signal;

4.4 If temperature within the protected area is above the normal level (50°C) and reaches 60°C the normally open contacts of the first temperature switch are closed and the batteries are connected to the electronic module circuit while the sound-and-light "Fire" warning signal is generated (intermittent sound and intermittent light signal). If temperature rises slowly within the protected area or there is no temperature rise up to 70°C (temperature rise interval exceeds 1 minute, and normally closed contacts of the temperature switch are still closed) for the purpose of energy saving the Device switches to the low energy consumption mode with switched off sound-and-light alarm system. The generation of "Fire 1" sound-and-light signal can be restored by pushing "Control" button. If temperature within the protected area is under the maximum level the Device automatically switches to stand-by mode.

4.5 If the temperature within the protected area rises and reaches 70°C, the contacts of the second temperature switch are opened. If the protected area is not attended by people (the XP1 bridge is absent (see Figure 2)) the Device generates instant “Start” command and the start current is transferred to output contacts to switch on electrical ignitors. If the XP1 bridge is present, the Device generates sound-and-light (continuous frequency modulated sound signal and intermittent light signal) “Fire 2” signal for 30 seconds, then it generates “Start” command and transfers start current to output contacts to switch on electrical ignitors. The start of electrical ignitors can be delayed as many times as required for 30 seconds by pushing the “Control” button. In this case the 30 seconds delay timer is resetted and the Device generates at first “Fire 1” sound-and-light signal, then “Fire 2” sound-and-light signal within the next 30 seconds and then executes the "Start" command. **Warning! The start of the fire fighting modules may be cancelled by complete switching off the power of the Device if necessary: Turn counterclockwise the top grating cover, remove it, then pull the safety bridge XP2 connected to the grating by means of a thread (see Figure 2).**

5 SAFETY MEASURES

5.1 The Detector shall be installed only by the qualified personnel of specialized companies after careful reading of the present Technical Data Sheet.

5.2 Remove XP 2 bridge before installation and maintenance works. We recommend to remove the batteries before carrying out this operation.

5.3 To prevent release of the fire fighting modules by contact electricity during installation and maintenance works take safety measures against contact electricity. Pay special attention to measures providing de-electrifying during connection of starting circuits of the modules.

6 MOUNTING AND INSTALLATION

6.1 The device shall be mounted on ceilings or other constructions of the protected areas according to the requirements of the Code of Regulations SP 5.13130.2009. The area protected by a single device shall correspond to section 13.6.1 of the Code of Regulations SP 5.13130.2009. Overall and installation dimensions are shown of Figure 1.

6.2 It is recommended to connect the Device to the starting circuits of the electrical ignitors with copper lead cable (the maximum size of the lead is up to 1.5 mm) according requirements of the operating manuals of the fire fighting modules, section 1.2 and safety requirements of the section 5 of the present Technical Data Sheet.

6.3 After completing the connection of the Device according to section 6.2 install the batteries, power switching off bridge (see Figure 2) and carry out the continuity check of the starting circuit of the electrical ignitors, check the batteries.

6.4 For securing the Device on the wall or on the ceiling use the wall plate DAE 100.205.005. Follow the installation procedure described below:

- secure the wall plate on the wall or on the ceiling by means of screws or anchors;
- remove the grating cover from the Device and install it into the wall plate;
- turn the arms of the wall plate at 90° angle using screw-driver;
- install the grating cover of the Device and provide it with seal.

6.5 Standard connection diagrams of the Device and additional modules, expanding the Device capabilities, can be found in Appendix B.

7 TRANSPORTATION AND STORAGE

7.1 Transportation and storage conditions of devices in transportation packing shall comply with storage conditions 5 according to GOST 15150-69

7.2 Detectors in original packing are suitable for transportation by all kinds of enclosed transport (railway cars, enclosed trucks, containers, sealed plane cargo compartments, cargo holds and so on). If the goods are transported by means of open transport means, transportation boxes shall be covered with waterproofing materials (such as tent-cloth).

8 MANUFACTURER WARRANTY

8.1 Guaranteed service life of the Device is 30 months since the date of its commissioning, if the customer observes specified storage, transportation, installation and operation conditions. Warranty time doesn't include storage time of the Device in the warehouse, if it doesn't exceed 6 months since the date of its dispatch.

8.2 The manufacturer warranty doesn't cover the batteries.

9 TYPICAL FAULTS AND RECTIFICATION METHODS

9.1 Typical faults and rectification methods are shown in Table 1. Table 1

Fault and Symptoms	Possible Cause	Rectification Method
No sound-and-light signal when - the "Control" button is pushed.	Batteries fault. The batteries are installed with wrong polarity.	Check the batteries. Change the polarity of the – batteries.
The "Emergency" signal is generated when the "Control" button is pushed.	The electrical ignitor circuit - is broken. Batteries' fault.	Restore the circuit of the - electrical ignitor. Replace the batteries/
The "Emergency 2" signal is generated when the "Control" button is pushed		

10 MAINTENANCE

10.1 It is not allowed to carry out any maintenance works on the Device without careful reading of the present Technical Data Sheet.

10.2 Replacement of the batteries:

- turn counterclockwise the grating cover, pull it and remove protecting cover of the Device and XP 2 bridge;
- turn up the battery clamp until the batteries fall down (see Figure 2);
- install new batteries and push them until the battery clamp locks, then install in reverse order the XP2 bridge, protecting cover and grating cover.

11 CERTIFICATE OF PACKING

The USPAA-1 device ID no. V2 _____
version ID no.

is packed according to requirements of technical specifications TU 4371-032-00226827-99.

Packed by _____
title Signature Name

Packing date _____
Day, Month, Year

12 ACCEPTANCE CERTIFICATE

The USPAA-1 device ID no. V2 _____
version ID no.

conforms to the requirements of technical specifications TU 4371-032-00226827-99 and is found out as suitable for use.

Quality Control Dept. _____ Seal
Signature Name

Acceptance date _____
Day, Month, Year

13 WARRANTY CLAIMS

13.1 In case of incorrect functioning or fault of the Detector during warranty period and need to return the product to the manufacturer, the customer shall issue the Reclamation Report.

13.2 All claims are registered and described in short in Table 2.

Table 2

Claim Date	Description	Measures

APPENDIX A

PRODUCT LAYOUT, OVERALL AND INSTALLATION DIMENSIONS

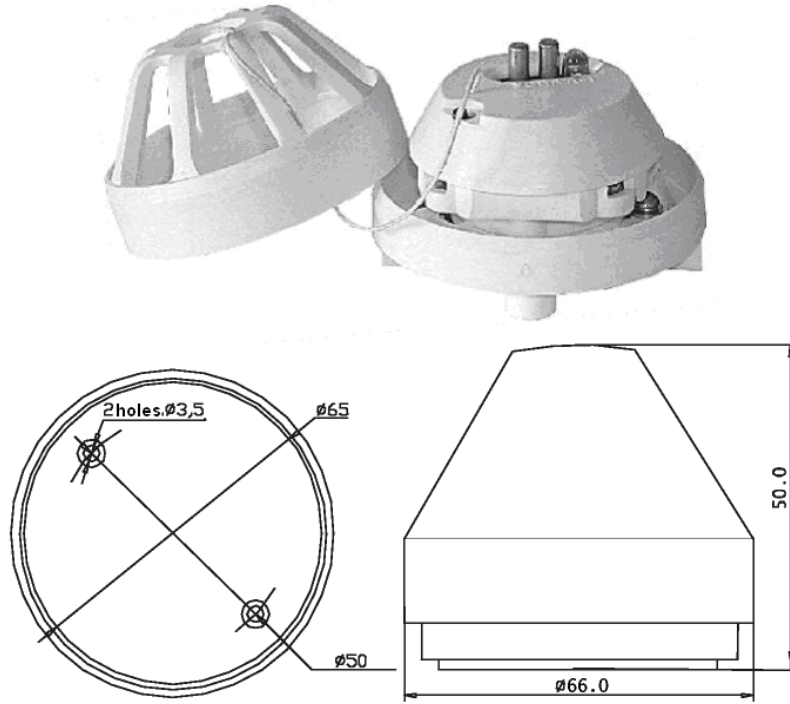


Figure 1

CONTROLS AND INDICATORS OF THE BATTERY COMPARTMENT

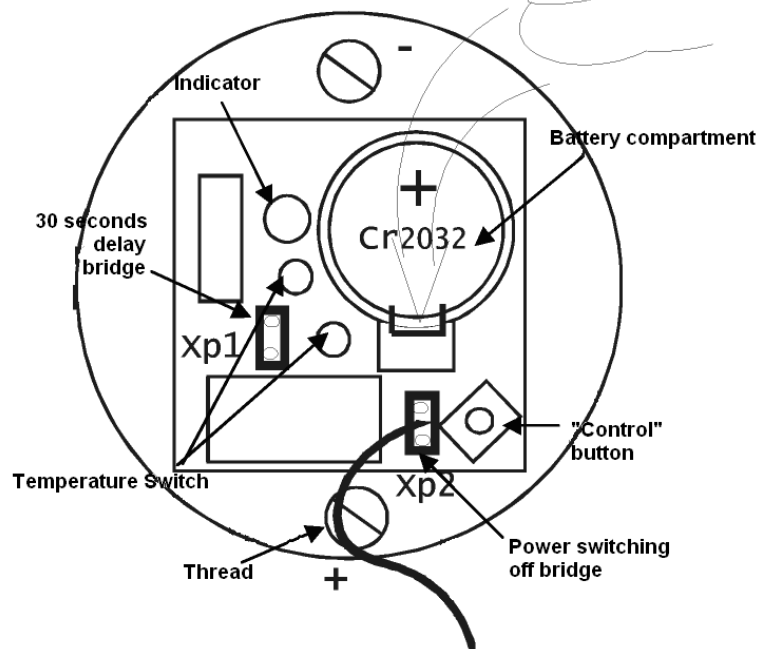


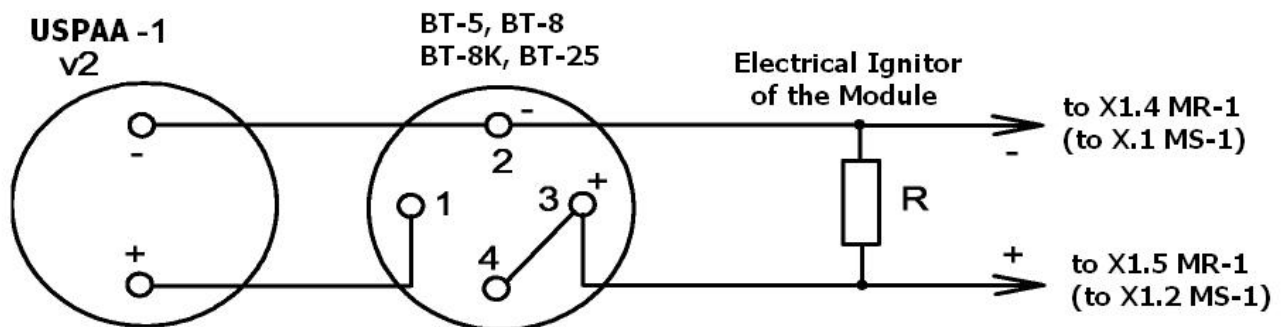
Figure 2

APPENDIX B

RELEASE CIRCUIT DIAGRAM OF FIRE FIGHTING MODULES WITH HIGH CAPACITY ELECTRICAL IGNITORS

The standard circuit described below provides reliable operating of the fire fighting modules in case of release of electrical ignitors requiring high amperage of up to 25 A at voltage of up to 24 V within up to 10 seconds, e.g. such modules as: GOA OSA M2 20/31 manufactured by NPF NORD, TOP-6 or Doping-2 manufactured by Etopos, ATS 11 and ATS 6 manufactured by Granit-Salamandra, Effect 5K, Impuls manufactured by Ognetek and similar. As intermediate power supply of the fire fighting modules thermal batteries of the type BT-5, BT-8, BT-25 manufactured by Energia Co. may be used.

Signal transfer and control of high galvanically isolated loads (such as circuits of ventilation system starters) may be provided by means of MS-1 v4.2 or MR-1 v2 modules.



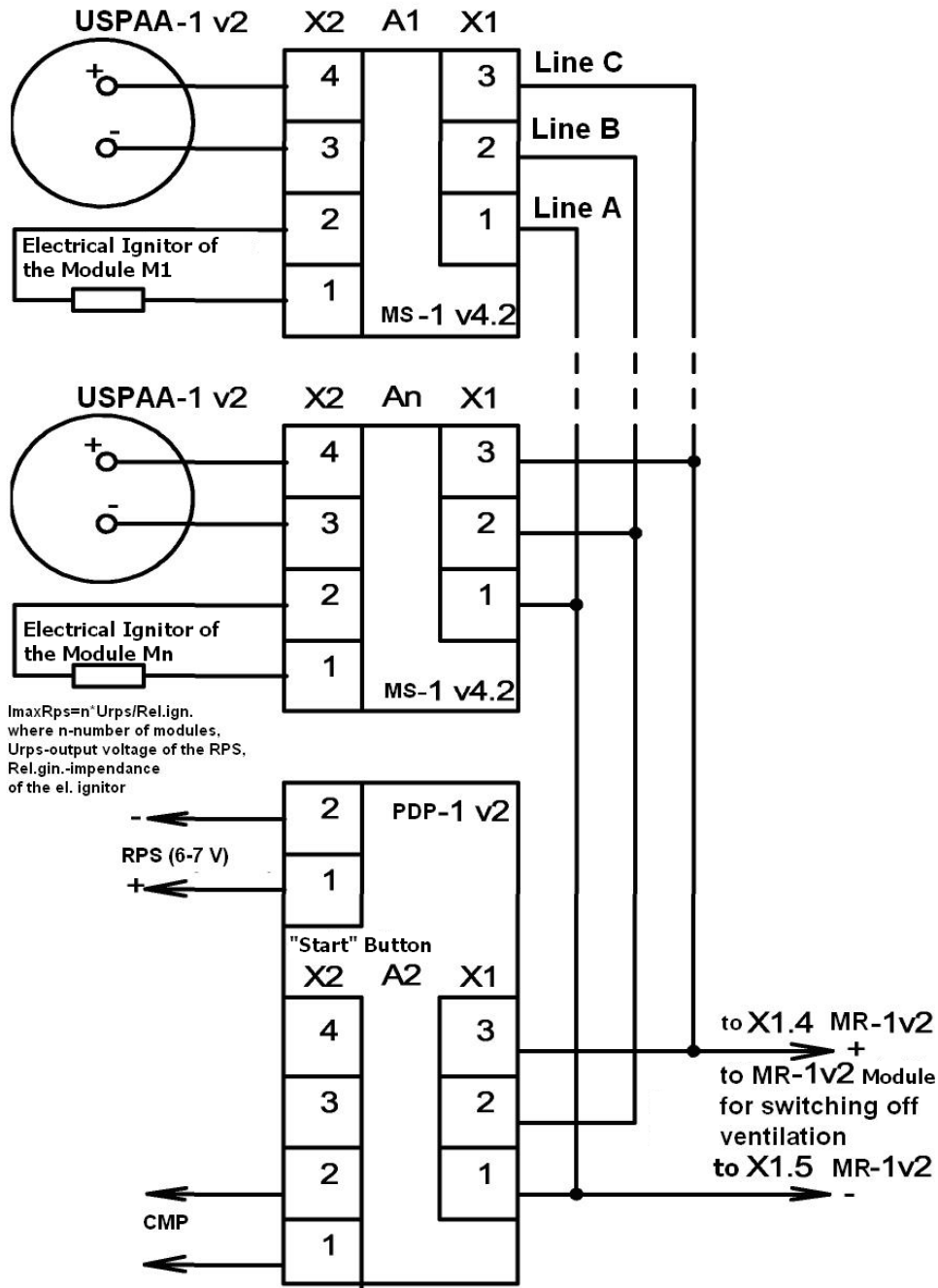
MULTIPLE RELEASE CIRCUIT DIAGRAMS OF FIRE FIGHTING SYSTEM MODULES

The standard circuit diagrams may be used to provide automatic remote release of all fire fighting modules installed in protected area (multiple release mode) by one released device with simultaneous transfer of the signal about fire system release to central monitoring panel (CMP) and the process equipment control signal. In stand-by mode all circuits connecting equipment are in de-energized state. If just one USPAA-1 device is released, the start current from its contacts is applied to optical coupler of the PDP-1 v2 control panel through isolation diode of MS-1 v4.2 modules and provides release of the high energy switch. The current of the high power supply is transferred through open circuit of transfer contacts and starting diodes of circuit isolation to all fire fighting modules and initiates their release, the release signal appears on central dispatching panel. In addition to automatic start, all modules can be started remotely by means of Start button of PDP-1 v2 control panel or manual fire detector.

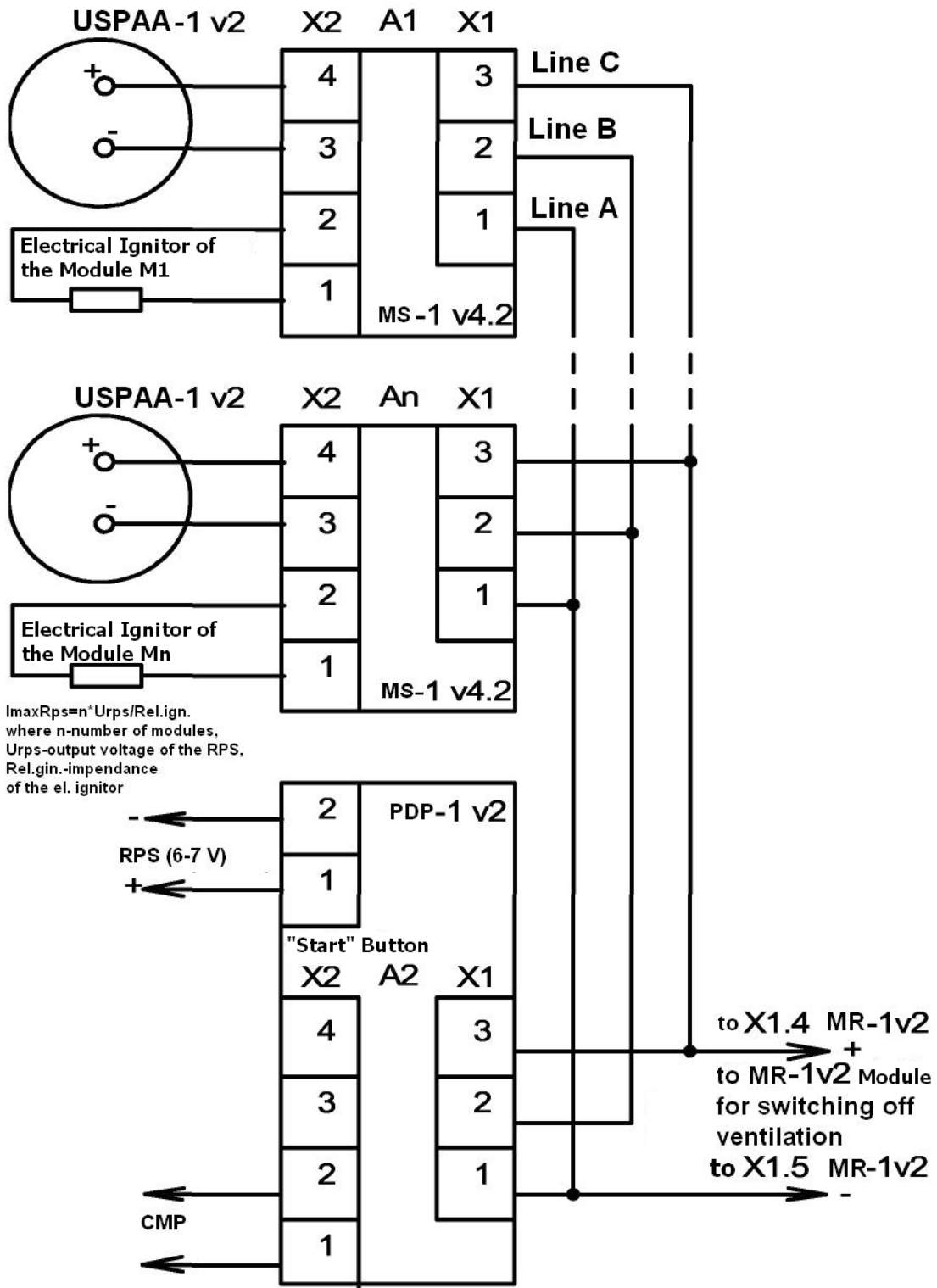
Note: For limiting and equalization of maximum starting current through ignition cartridge of fire fighting modules it is possible to install additional current-limiting resistors along with each module in sequence. Before testing of the whole system the connection of outer circuits shall be checked. To exclude false release of automatic fire fighting systems during commissioning because of incorrect installation, the ignition cartridges emulators shall be installed instead of ignition cartridges. Miget lamps (6-12 V, 23-60 mA) can be used for this purpose. The functional test of the system in automatic release mode shall be performed by means of initiating of each USPAA-1 device. In remote release mode perform the test by means of pushing Start button of the PDP-1 v2 control panel. To initiate release of temperature switches of the USPAA-1 device it is recommended to use the heat gun providing hot air flow with temperature of 70-80°C.

Standard connection diagram of the USPAA-1 in case of central release by means of additional independent power supply

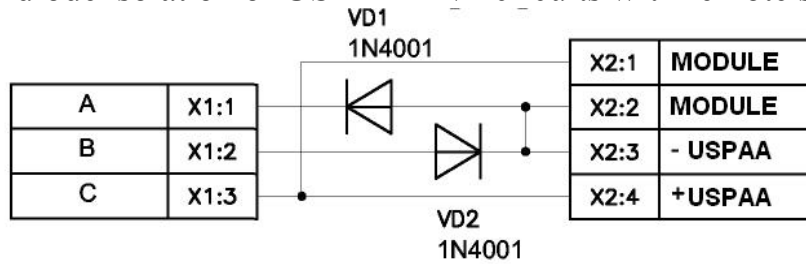
The batteries with low bleeder current and output current of not lower than the sum of all starting currents of electrical ignitor shall be used as an independent power supply . In particular, for release of 10-15 electrical ignitors with starting current of 0.1 A the independent power supply consisting of two EEMB Co.Ltd lithium batteries of the type ER26500M-FT (product ID 16-18-97). Characteristics: maximum current: up to 2 A, storage life: 10 years, temperature range: -45.. +85 °C.



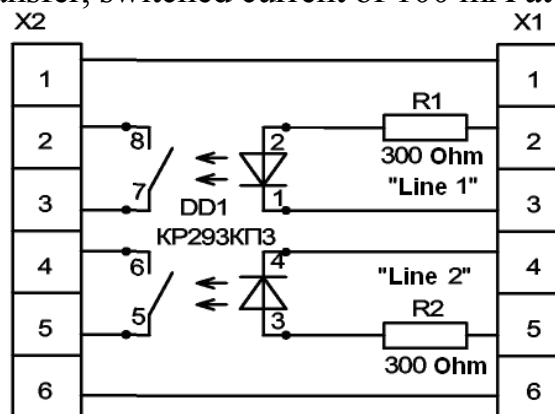
Standard Connection Diagram of the USPAA-1 Device in Case of Central Release Configuration by means of Redundant Power Supply (RPS).



Adapter Module MS-1 v4.2 USPAA-1 v2
 (for diode isolation of USPAA-1 v2 circuits with remote start)

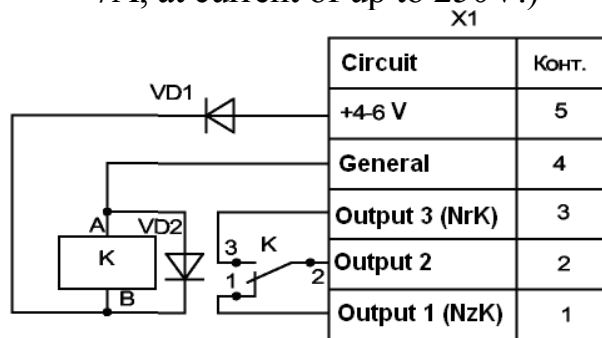


Adapter Module MS-1 v4.1 USPAA-1 v2
 (for release signal transfer, switched current of 100 mA at current of up to 220V)

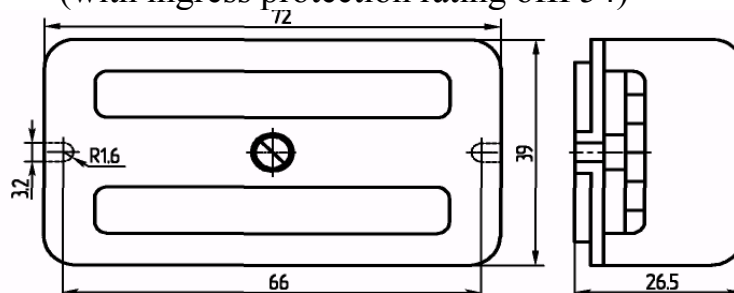


Switch Module MR-1 v2 USPAA-1 v2

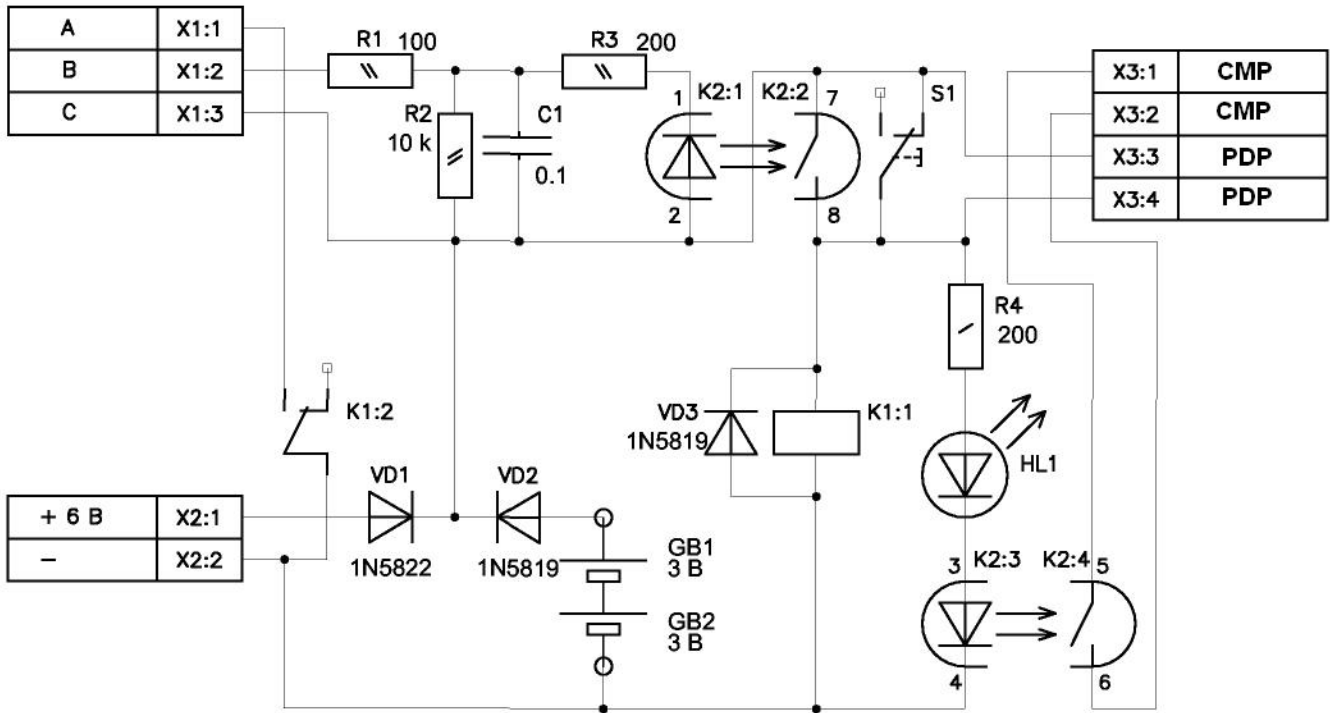
(for control of process equipment, ventilation and other systems, switched current of up to 7A, at current of up to 250V.)



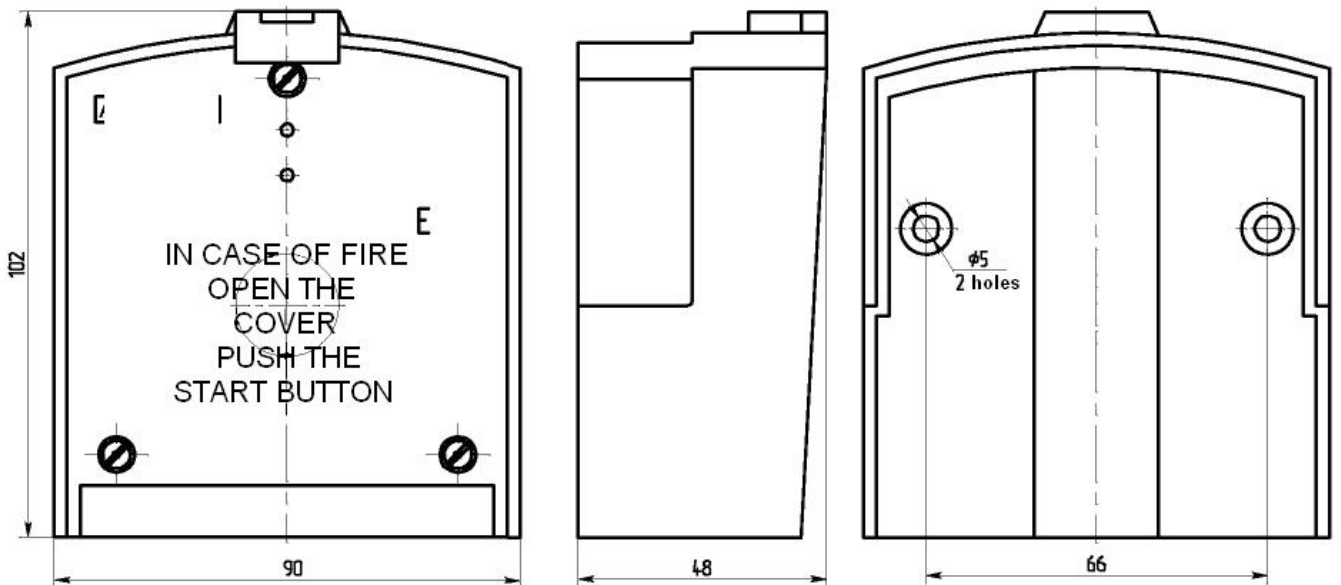
Overall and Installation Dimensions of the MS-1 and MR-1 Modules
 (with ingress protection rating of IP54)



Remote Release Unit PDP-1 v2 (for USPAA-1 v2)



Overall and Installation Dimensions of PDP-1 v2 Unit
(with ingress protection rating of IP54)



Independent automatic alarm-release device USPAA-1 for fire fighting systems conforms to the requirement of Technical Specifications TU 4371-032-00226827-99.

The product quality is certified by the following certificates:

Fire Safety Certificate No. SSPB.RU.OP 014.B.01471, valid until April 21, 2012.

Certificate of Compliance No. ROSS RU.AYa04.N01396, valid until April 21, 2012.

Quality Management System Certificate for compliance with requirements of GOST R ISO 9001-2008 (ISO 9001-2008).

MANUFACTURER'S ADDRESS

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