ИСО 9001

EAC

MANUAL CALL POINT
IPR 513-3M

User's Manual

BOLID®

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This user's manual explains the principles of operating IPR 513-3M Manual Call Point (hereinafter referred to as the MCP, equipment, or product).

Only the personnel who have studied this manual are allowed to operation activities. All activities on mounting, programming and commissioning shall be performed in compliance with the requirements of the regulatory documentation in force at the place of operation.

Abbreviations:
LED: Light Emitting Diode;
MCP: Manual Call Point.

1 Description and Operation

1.1 Purpose

IPR 513-3M Manual Call Point (hereinafter referred to as the MCP) is to be used in fire detection and fire alarm systems for manual initiation of fire alarm signals.

It operates within an alarm loop of control and indicating equipment S2000-4, Signal-20P, S2000-ASPT, Signal-10, Signal-20M or similar that provide loop voltage up to 30 V and limit the current in a loop at a level not exceeding 25 mA.

The functions of the MCP are as follows:

– Monitoring the operating element for its conditions;
– Sending messages to the control and indicating equipment;
– Indicating operation conditions (operating element's conditions) using its built-in LED.

The manual call point is intended for round-the-clock operation.

The manual call point is classified as a repairable and periodically maintained item.

1.2 Specifications

Table 1.2.1

Parameter	Value
1.2.1 Max power supply voltage, V	30
1.2.2 Rated power supply voltage, V	24
1.2.3 Max current consumption in the quiescent mode, uA	50
1.2.4 Max switching current, mA	25
1.2.5 Maximum active resistance of alarm loop wires, Ohm	100
1.2.6 Minimum insulation resistance between alarm loop wires, kOhm	50
1.2.7 Enclosure protection degree as per GOST 14254-2015	IP40
1.2.8 Resistance to mechanical exposure as per OST 25 1099-83	Arrangement Category III
1.2.9 Vibration exposure: - Frequency range, Hz - Max acceleration	 1-35 Hz; 0.5g;
1.2.10 Environment category as per OST 25 1099-83	O3
1.2.11 Operating temperature range, °C	Minus 30 to + 55
1.2.12 Relative air humidity	Up to 93 % at +40°C
1.2.13 Weight, kg, max	0.15
1.2.14 Housing dimensions, mm, max	95 × 91 × 34
1.2.15 Non-stop operation	24/7
1.2.16 MTBF in the quiescent mode, hours, at least	80,000
1.2.17 Survival probability after 1,000 hours	0.98758
1.2.18 Expected lifetime, years	10

1.2.19 As to immunity to electromagnetic interference, the IPR 513-3M meets the requirements of Test Severity Level III as per the relevant standards listed in Annex 'Б' to GOST R 53325-2012.

1.2.20 The IPR 513-3M passes the industrial interference standards prescribed for Class 'Б' equipment per GOST R 30805.22.

1.3 Scope of Delivery

Table 1.3.1 represents the content of MCP standard delivery

Table 1.3.1

Item	Quantity
IPR 513-3M Manual Call Point	10 pcs.
Accessory Kit:	
Special housing key Screw 1-4×30.20.019 GOST 1144-80 Wall plug 8×30	10 pcs. 20 pcs. 20 pcs.
Documentation:	
IPR 513-3M Operations Manual	1 pcs.

1.4 Design and Operation

1.4.1. The MCP is activated by pushing the operating element manually, which causes a fire alarm to be generated. Displacement of the operating element (pushed / raised) causes a change in the positions of the electric micro switch contacts. The activated MCP is restored to its original position by means of the special housing key provided. The typical wiring diagram for the MCP is shown in Figure 2.2.4.1.

1.4.2. The MCP is supplied with power via the alarm loop of a control and indicating equipment, which provides loop voltage up to 30 V and limits current in the loop at a level no higher than 25 mA.

1.4.3. The MCP can be in one of the two operation modes:

- The quiescent mode (normal conditions): The operating element is armed (cocked);
- The fire alarm mode: The operating element has been discovered to be pushed.

1.5 Measuring Instruments, Tools, and Accessories

While mounting, commissioning, and maintaining the product please use the instruments, tools, and accessories shown in Table 1.5.1.

Table 1.5.1

Instrument	Specifications
Digital multimeter	AC/DC voltage up to 500V, AC/DC current up to 5A, resistance up to 2M Ohm
Flat head screwdriver	3.0 × 50 mm
Cross slot screwdriver	2 × 100 mm
Side-cutting pliers	160 mm
Pliers	160 mm

1.6 Marking and Sealing

Every IPR 513-3M has a marking placed inside its housing on the rear panel shown in Figure 2.2.2.2.

The marking contains the name of the product, its decimal number, factory number, the year and quarter of production, and conformity marks.

The transparent protective flip cover can be sealed.

1.7 Packaging

The units along with accessory kits and operations documentation are packaged into a cardboard box.

2 Intended Use

2.1 Operating Restrictions

The design of the MCP doesn't provide its operation in aggressive and dusty environments or in ex-hazardous premises.

Correct performance of the MCP cannot be guaranteed if the electromagnetic environment does not meet the requirements defined in the Section 1.2 of this manual.

2.2 Preparing for Use

2.2.1 Safety Precautions

- The design of the MCP meets the requirements of electric and fire safety including emergency operation in accordance with Russian standards GOST 12.2.007.0-75 and GOST 12.1.004-91;
- There are no potential hazard circuits within the MCP;
- Do SHUT OFF power from the MCP before mounting, installing, and maintaining this one;
- Mounting and maintenance of the MCP should be carried out by persons with the second or higher electric safety qualification level.

2.2.2 Design

The IPR 513-3M appearance is shown in Figure 2.2.2.1.

The overall dimensions are 95 mm × 91 mm × 34 mm.

Figure 2.2.2.1. IPR 513-3M View

The rear panel of the MCP with the mounting dimensions is represented in Figure 2.2.2.2. The PCB is shown schematically.

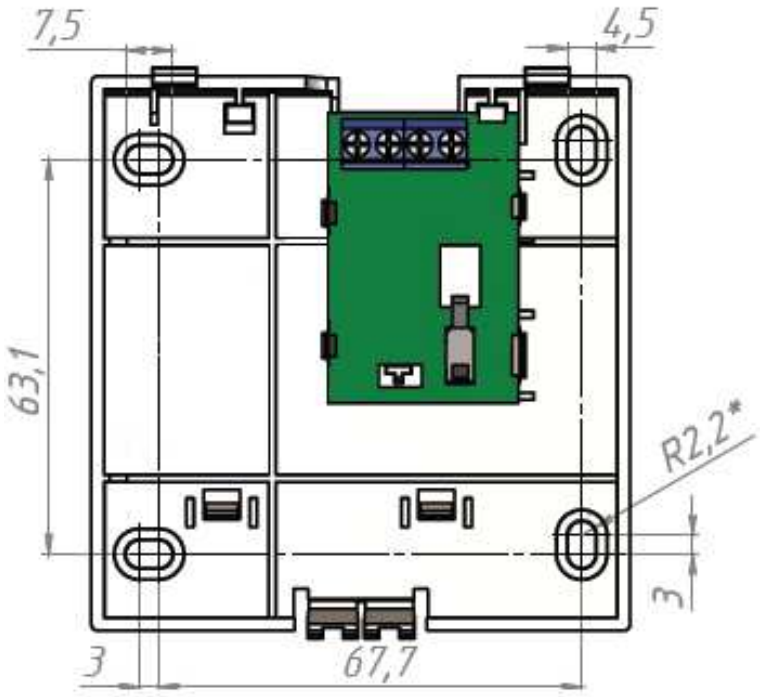


Figure 2.2.2.2 Mounting Dimensions for the MCP

2.2.3 Mounting

The MCP is to be mounted to a flat vertical surface in line with Buildings Codes and Regulations. The MCP rear panel (base) is attached to the wall with two screws. The front part of the housing is installed on the mounted base after connecting wires to the terminal block. The wires that pass under the rear panel should not be clamped by the MCP housing.

Figure 2.2.3.1 shows the view of the MCP (without the protective flip cover).

1: Hole to insert the key to reset the activated MCP;
2: Holes to insert the key to open the MCP housing;
3: Special key to reset the activated MCP / to open its housing;
4: Place for a seal.

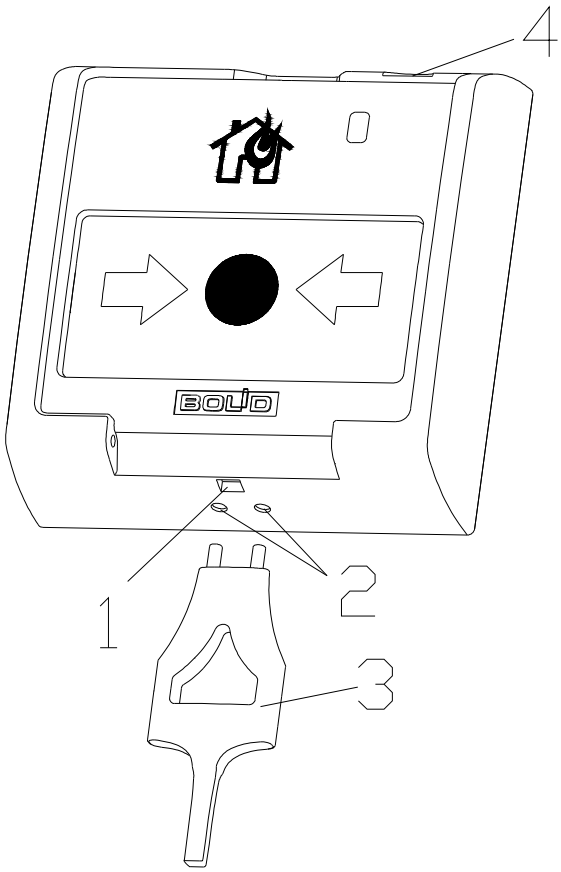
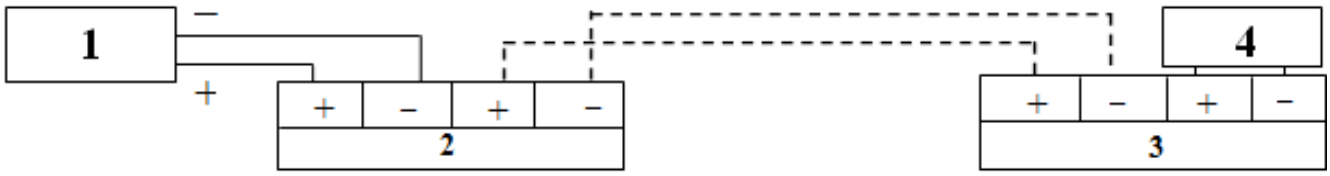


Figure 2.2.3.1. Parts of the MCP

The MCP can be used together with products that provide mechanical environmental protection. Such products shall obstruct neither activation of the MCP, nor flipping the protective cover, nor reset of the activated MCP, nor opening of the MCP housing.

2.2.4 Wiring

Figure 2.2.4.1 represents a typical schematic for wiring the MCP. Wire the MCP in line with the operation documentation for the control and indicating unit (device) in use and the connection diagrams shown in this documentation.



1: Control and Indicating Unit (Device),
2, **3:** MCP,
4: An end-of-line device (resistor, diode, etc.).

Figure 2.2.4.1. Wiring Diagram

2.2.5 Settings

2.2.5.1 Configuring

Configuring is described in operating documentation for the control and indicating equipment in use.

2.2.6 Usage

To be admitted to work with the MCP, the personnel are obliged to have studied this manual and to have a certificate of verification of knowledge of safety regulations.

The MCP is activated by pushing the operating element after flipping the clear protective cover. While being activated, the MCP reduces its internal resistance down to a value not above 500 Ohm.

Operation modes of the MCP and correspondent indications are shown in Table 2.2.6.1

Table 2.2.6.1

Operation Mode	Description	Indication
Quiescent Mode	Current consumed by the MCP doesn't exceed 50 uA	Blinking once per about four seconds
Fire Alarm	Internal resistance of the MCP does not exceed 500 Ohm	Solid light

2.2.7 Testing Operability

Perform functional testing as described in Section 3.4 of this manual.

2.2.8 Extreme Situation Actions

WARNING:
If sparks, fire, smoke, or smell of burning is found at the installation site of the MCP, the equipment must be de-energized and sent for repair

2.2.9 Troubleshooting

Table 2.2.9.1

Fault	Possible Cause	Solution
The indicator is off	No power applied	Check the voltage at the MCP contacts “+” and “–“; in case of zero voltage check the integrity of cables and contact joints
No fire alarm after pressing the operating element	No communications between the MCP and control and indicating equipment	Check the integrity of cable and contact joints
	Internal circuitry malfunction	Send the MCP for repair
	Structure defect of the MCP	

3 Maintenance

3.1 General

Maintenance works are to be carried out subject to the following schedule:

Table 3.1.1

Task Description	Frequency
Visual check	Six-monthly
Inspecting for proper operation	Annually

3.2 Safety Precautions

The MCP should be maintained by personnel qualified for the Electrical Safety of Level II or higher.

3.3 Maintenance Schedule

3.3.1 Visual check of the MCP includes inspecting it for mechanical damage, fastening security, conditions of connecting wires and contact joints.

3.3.2 Operability of the MCP is to be tested in line with Section 3.4 of this manual.

Warning!
Removing the device's PC board from its housing automatically voids the manufacturer's warranty

3.4 Performance Testing

3.4.1. For the time of testing the MCP, disable the outputs of the control and indicating equipment that control fixed fire suppression systems and notify the proper authorities.

3.4.2. Arm the input with the connected MCP being in the normal conditions and indicating properly.

3.4.3. Trigger the MCP by pushing the operating element. A fire alarm on the input with the connected MCP shall be generated, and the MCP shall indicate the fire alarm conditions.

3.4.4. Reset the MCP to the normal conditions by raising (arming, cocking) the operating element via the special key. Be sure the MCP has changed indication mode for indication of the normal conditions. With the help of the network controller issue a comand to reset the alarm sent by the MCP.

3.4.5. Perform steps 3.4.2 – 3.4.4 at least triply.

3.4.6. If the input with the connected MCP failed to be armed or normal and/or fire alarm conditions are not observed depending on the displacements of the operating element, then the MCP is defective and needs to be replaced.

3.4.7. When testing is completed, make sure that the manual call point is ready for normal operation. Reconnect control and indicating equipment and control appliances with fixed fire suppression equipment and notify the proper authorities that the system is back in normal operation.

Conduct all tests with equipment known to be in good conditions!

3.5 Technical Examination

Technical examination is not applicable for this equipment.

3.6 Preservation (Depreservation, Represervation)

Preservation is not applicable for this equipment.

4 Repair

Repair of defective equipment is to be performed by the manufacturer or in authorized repair centers. The MCP should be sent for repair in compliance with Company Standard QMS 8.5.3-2015, which can be found online at our website https://bolid.ru/support/remont/.

Attention!

The equipment shall be submitted for repair being assembled and clean and along with all the parts listed in the documentation.

Claims are accepted only if a reclamation report describing the failure is applied to the submitted equipment.

An equipment failure resulted from consumer's not observing rules of mounting and operation is not a reason for claims and warranty repair.

Claims shall be submitted to the following address:

NVP BOLID, #4 Pionerskaya Str., Korolyov, Moscow Region, 141070, Russia Tel.: +7 495 775-71-55. E-mail: info@bolid.ru.

In case of any issue related to use of the product, please contact the technical support: +7 495 775-71-55 or e-mail: support@bolid.ru.

5 Storage

In a transport container, storage is allowed at ambient temperatures minus 50°C through plus 50°C and relative humidity up to 95% at plus 35°C.

Storage in the consumer package is permitted only in heated premises at temperatures plus 5 through plus 40°C and relative humidity up to 80% at plus 20°C.

6 Transporting

The product can be transported in a transport container at ambient temperatures minus 50 through plus 50°C and relative humidity up to 95 % at plus 35°C.

7 Disposal

The equipment is to be disposed of considering that there are no toxic components in it.

The content of precious materials: doesn't require accountability for storage, retirement, and disposal (Clause 1.2 of GOST 2.608-78).

The content of non-ferrous metals: does not require accountability for retirement and further disposal.

8 Manufacturer Warranty

The manufacturer guaranties the product meets with technical requirements stated in the manuals if the user follows the instructions for transportation, storage, installation, and usage.

The warranty period is 18 months since putting the product into operation but no more than 24 months from the manufacturer's date of production.

9 Certification Information

IPR 513-3M Manual Call Point meets the requirements of the Technical Regulations of the Eurasian Economic Union 'On requirements for fire safety and firefighting means' (EAEU TR 043/2017) and is covered by Certificate No. ЕАЭС RU C-RU.ПБ68.В.01396/22.

IPR 513-3M Manual Call Point meets the requirements of the Technical Regulations CU TR 020/2011 'Electromagnetic compatibility of technical equipment' and is covered by Conformity Declaration ЕАЭС № № RU Д-RU.НР15.В.06593/20.

IPR 513-3M Manual Call Point meets the requirements of the Technical Regulations EAEU TR 037/2016 'On the restriction of the use of certain hazardous substances in electrical and electronic equipment' and is covered by Conformity Declaration ЕАЭС № RU Д-RU.РА01.В.82301/19.

IPR 513-3M Manual Call Point meets the requirements of GOST R 53325-2012 'Fire protection equipment. Facilities for automatic fire-fighting systems. General technical requirements and test methods' and is covered by Conformity Certificate ОГН9.RU.1106.В00102.

The production of IPR 513-3M Manual Call Point is awarded with Conformity Certificate GOST R ISO 9001. The Certificate is available on the website https://bolid.ru in the section ABOUT.