ИСО 9001

EAC

CONTROL BUTTON AND INDICATOR MODULE

S2000-BKI

User's Manual

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This User's Manual explains the principles of operating S2000-BKI Control Button and Indicator Module of version **2.45**.

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.

1   Description and Operation

1.1 Purpose

1.1.1   S2000-BKI Control Button and Indicator Module (hereinafter referred to as the module) is designed to operate under a network controller (S2000M Monitoring and Control Panel for Fire and Intrusion Alarm Systems, Sirius Fire Alarm Control Panel, or their modifications) as a modular component of a:

− Control and indicating equipment for fire / intruder alarm systems;

− Fire protection equipment controls.

The network controller is allowed to be a personal computer with installed Orion Pro Software Suite. In this case the module is intended to be used as a component of control and indicating intrusion alarm equipment.

1.1.2   The module is designed to provide:

− Light and sound indication of conditions of fire and intrusion alarm and auxiliary partitions as well as conditions of actuators and control appliances of fire protection equipment;

− Operating (arming / disarming) fire and intrusion alarm partitions remotely;

− Operating actuators and control appliances of fire protection equipment remotely.

1.1.3   Access to system controls is performed using the built-in iButton reader. When the module operates as a component of the control and indicating intrusion alarm equipment, it is allowed to be connected to an external reader module.

1.1.4   By the capability of expanding functionality or quantitative aspects, the module is classed as a non-expandable product.

1.1.5   The module provides a capability of using means of computer facilities for monitoring and programming.

1.1.6   The module is classed as a reparable, recoverable, monitorable, regularly maintainable, and multifunctional product.

1.1.7   The module is intended for round-the-clock operation.

1.1.8   The module's design doesn't imply operating it in aggressive and dusty environments or in ex-hazardous premises.

1.2 Specifications

Specifications are given in Table 1.2.1.

Table 1.2.1

No.	Parameter	Value
1.2.1	DC power voltage, V	10.2 … 28.4
1.2.2	Max current consumption, mA: - in the quiescent mode (all the LEDs are off at 12V/24V input power) - in the alarm mode (12V input power) - in the alarm mode (24V input power)	50 200 100
1.2.3	Power inputs	2
1.2.4	Max Start-up Time, s	5
1.2.5	Number of Partitions (Discharge Zones)	60
1.2.6	Enclosure protection degree as per GOST 14254-2015	IP20
1.2.7	Environmental category as per OST 25 1099-83	O3
1.2.8	Operating temperature, °C	-30 … +50
1.2.9	Max relative humidity, % (at +40 °C)	93
1.2.10	Resistance to mechanical exposure as per OST 25 1099-83	Arrangement Category III

No.	Parameter	Value
1.2.11	Vibration exposure: - Frequency range, Hz - Max acceleration, g	1 … 35 0.5
1.2.12	Overall dimensions, mm	$340 \times 170 \times 27$
1.2.13	Weight, kg	0.6
1.2.14	Min electrical insulation resistance of the circuits (at normal conditions as defined in GOST 52931 2008), mega ohms	20
1.2.15	MTBF, hours	40,000
1.2.16	Survival probability	0.98758
1.2.17	Expected service life, years	10
1.2.18	Mean recovery time (without regard to delivering spare parts) doesn't exceed, min	30

1.2.19   In terms of immunity to electromagnetic interference, the module meets the requirements of Test Severity Level III as per the relevant standards listed in Appendix 'Б' to GOST R 53325-2012.

1.2.20   The module passes the industrial interference standards prescribed for Class 'Б' equipment as per GOST R 30805.22.

1.3 Scope of Delivery

Table 1.3.1 presents the module's delivery scope.

Table 1.3.1

Item		Q-ty, pcs.
S2000-BKI Control Button and Indicator Module		1
Accessory Kit:		
	Woodscrew 1-3x25.016 GOST 1144-80	3
	Wall plug 6x30	3
-	Packaging	1
Documentation:		
S2000-BKI Operations Manual		1

1.4 Arrangement and Operation

1.4.1   The module appears as shown in Figure 1 (see 2.2.2).

1.4.2   Light indication is provided by means of:

– 60 bicolor LEDs to display states of up to 60 fire alarm, intrusion alarm, and auxiliary partitions or fire protection system actuators / controls;

– 8 single color LEDs to display alarms and troubles in all the assigned partitions;

– One LED to display conditions of the module itself;

– One LED to indicate that a sound has been silenced;

– One LED to indicate whether operating of partitions is accessible (Access).

1.4.3   Table 1.4.1 describes performance of the POWER LED depending on the module conditions.

Table 1.4.1. POWER LED

Module Condition	POWER LED Performance
1. Norm	On
2. Power Failed	Blinks with green once per second
3. Programming mode (updating firmware)	Blinks with green four times per second

1.4.4 Table 1.4.2 – Table 1.4.14 represent performance of LEDs "1" – "60" depending on partition conditions and the assigned Indicator Type, which is a configuration parameter that can be defined by user (see Programming the Module).

If for a partition several states are detected at once then the state of most priority is displayed.

Tables 1.4.2 – 1.4.14 shows partition conditions ordered with top-down prioritization. If no from partition conditions meet all states shown in a table then the relevant indicator is off.

Intrusion Indicator Type is designed to display conditions of intrusion partitions.

Table 1.4.2. Performance of the **"1" – "60"** LEDs for Indicators of **Intrusion** Type

Partition Condition	"1" – "60" LEDs Performance
Panic Alarm, Duress Alarm, Flooding Detected, Intrusion Alarm	Blinks in red with 0.5 s on and 0.5 s off
Fault (all kinds of troubles including troubles of alarm loops, outputs, power troubles, communication troubles etc.: Fault, Input Open Failure, Input Short Failure, Configuration Error, Tamper Alarm, Output Open Failure, Output Short Failure, Mains Failed, Overload, Battery Test Error, Power Failed, Charger Failed, Battery Failed, Battery Low, Backup Battery Low, Level Above Limit, Level Below Limit, Noise, Actuator Failed, Actuator Error, Service Required, Temperature Sensor Fault, Input Communication Fault, Output Communication Fault, Unit Communication Fault, Device Authentication Error, PL Short Circuit, PL Overvoltage, PL Communication Error, PL Unstable Error, PL1 Communication Lost, PL2 Communication Lost, Communication Link Failure, Activation Failed)	Blinks in amber with 0.25 s on and 1.75 s off
Arming Failed	Blinks in amber with 0.5 s on and 0.5 s off
Lobby Alarm	Blinks in red with 0.25 s on and 0.75 s off
Disarmed	Lit with green
Arming	Blinks in green four times per second
Armed	Lit with red
Disabled	Lit with amber (under S2000M ver.3.00+)

Intrusion-2 Indicator Type differs from **Intrusion** Indicator Type just by indicator's being off in Disarmed condition.

Table 1.4.3. Performance of the **"1" – "60"** LEDs for Indicators of **Intrusion-2** Type

Partition Condition	"1" – "60" LEDs Performance
Panic Alarm, Flooding Detected, Intrusion Alarm	Blinks in red with 0.5 s on and 0.5 s off
Fault	Blinks in amber with 0.25 s on and 1.75 s off
Arming Failed	Blinks in amber with 0.5 s on and 0.5 s off
Lobby Alarm	Blinks in red with 0.25 s on and 0.75 s off
Disarmed	Off
Arming	Blinks in green four times per second
Armed	Lit steady with red
Disabled	Lit steady with amber (with S2000M ver.3.00+)

Intrusion-3 Indicator Type is also intended to indicate conditions of intrusion alarm partitions. As opposite to **Intrusion** Indicator Type, troubles are indicated when there are no other conditions.

Table 1.4.4. Performance of the **"1" – "60"** LEDs for Indicators of **Intrusion-3** Type

Partition Condition	Performance of the "1" – "60" Indicators
Panic Alarm, Flooding Detected, Intrusion Alarm	Blinks in red with 0.5 s on and 0.5 s off
Arming Failed	Blinks in amber with 0.5 s on and 0.5 s off
Lobby Alarm	Blinks in red with 0.25 s on and 0.75 s off
Disarmed	Lit steady in green
Arming	Blinks in green four times per second
Armed	Lit steady in red
Fault	Blinks in amber with 0.25 s on and 1.75 s off
Disabled	Lit steady in amber (under S2000M ver.3.00+)

Note: **Intrusion-3** Indicator Type operates correctly only with S2000M Fire and Alarm Control Panel of ver.2.03 or higher.

Fire Indicator Type is also intended to indicate conditions of individual fire partitions (zones). General indicators Fire, Fault, and Disabled of modular fire protection equipment are on the S2000M panel.

Table 1.4.5. Performance of the **"1" – "60"** LEDs for Indicators of **Fire** Type

Partition Condition	Performance of the "1" – "60" Indicators
Fire2 Alarm	Lit steady with red
Fire Alarm	Blinks in red with 0.25 s on and 0.25 s off
Fire Prealarm	Blinks in red with 0.25 s on and 1.75 s off
Fault	Blinks in amber with 0.25 s on and 1.75 s off
Arming Failed	Blinks in amber with 0.5 s on and 0.5 s off
Arming	Blinks in green four times per second
Armed, Restored, Noise Removed, Mains Restored, Battery Restored, Output Normal, Tamper Restored, PL Normal, Charger Normal, Link Restored, Output Communication Normal, Input Communication Normal, PL1 Com Restored, PL2 Com Restored, DC ON, Load Normal, Power Restored, Battery 2 Normal, Unit Communication Normal	Lit steady with green
Disabled	Lit steady with amber

Note: S2000M Fire and Alarm Control Panel of ver.3.00 or higher shall be in use.

Fault Indicator Type is intended for indicating faults only and is applicable as to intrusion and fire detection partitions (zones).

Table 1.4.6. Performance of the **"1" – "60"** LEDs for Indicators of **Fault** Type

Partition Condition	«1" – "60" LEDs Performance
Fault	Blinks in amber with 0.25 s on and 1.75 s off
Disarmed	Lit steady with amber
Disabled	Lit steady with amber

Actuator Indicator Type is intended for indicating conditions of dampers, pumps, and other control appliances. General indicators Start, Stop, Fault, and Disabled of modular fire protection equipment are on the S2000M panel.

Table 1.4.7. Performance of the **"1" – "60"** LEDs for Indicators of **Actuator** Type

Partition Condition	"1" – "60" LEDs Performance
Output Activated	Lit steady with red
Start Delay when there are less than 5 s left	Blinks in red four times per second
Start Delay when there are less than 15 s left	Blinks in red twice per second
Start Delay when there are more than 15 s left	Blinks in red once per second
Start Delay Hold	Blinks in amber with a frequency that is the same as for Start Delay
Output Activation Failed, Fault	Blinks in amber with 0.25 s on and 1.75 s off
Disarmed	Lit steady with amber
Operating Position, Pump On	Lit steady with red
Output Abort/Stop	Lit steady with amber
Initial Position, Pump Off	Lit steady with green
Disabled	Lit steady with amber

Note: **Actuator** Indicator Type is available only under an S2000M of ver.2.07 or higher.

Indicator types **Auxiliary**, **Auxiliary 2**, and **Auxiliary 3** are designed for signaling about conditions of various engineering equipment, doors, etc. which are monitored by means of auxiliary alarm loops. The types Auxiliary and Auxiliary 2 imply that the relevant partition contains only auxiliary alarm loop, and potential troubles of this loop are indicated with the highest priority. These two tactics differ from each other by the way of indicating activation of the auxiliary alarm loop (for Auxiliary type the LED illuminates steady with red while for Auxiliary 2 type the LED pulses with amber). For the type Auxiliary 3 indication of troubles in a partition is of less priority relative to auxiliary alarm loop activation and restoring. This provides indicating only conditions of the auxiliary alarm loop even if the partition integrates also alarm loops of other types. If only an auxiliary alarm loop is included into a partition then indicator types Auxiliary and Auxiliary 3 operate near to identically.

Table 1.4.8. Performance of the **"1" – "60"** LEDs for Indicators of **Auxiliary** Type

Partition Condition	"1" – "60" LEDs Performance
Fault	Blinks in amber with 0.25 s on and 1.75 s off
Disarmed	Lit steady with amber
Auxiliary Input Activated	Lit steady with red
Auxiliary Input Restored	Lit steady with green
Disabled	Lit steady with amber

Table 1.4.9. Performance of the **"1" – "60"** LEDs for Indicators of **Auxiliary 2** Type

Partition Condition	«1" – "60" LEDs Performance
Fault	Blinks in amber with 0.25 s on and 1.75 s off
Disarmed	Lit steady with amber
Auxiliary Input Activated	Blinks in amber with 0.5 s on and 0.5 s off
Auxiliary Input Restored	Lit steady with green
Disabled	Lit steady with amber

Table 1.4.10. Performance of the **"1" – "60"** LEDs for Indicators of **Auxiliary 3** Type

Partition Condition	"1" – "60" LEDs Performance
Auxiliary Input Activated	Lit steady with red
Auxiliary Input Restored	Lit steady with green
Fault	Blinks in amber with 0.25 s on and 1.75 s off
Disarmed	Lit steady with amber
Disabled	Lit steady with amber (under S2000M ver.3.00+)

Engineering Indicator Type is intended for indicating temperature and humidity levels.

Table 1.4.11. Performance of the **"1" – "60"** LEDs for Indicators of **Engineering** Type

Partition Condition	"1" – "60" LEDs Performance
Fault	Blinks in amber with 0.25 s on and 1.75 s off
Temperature High, Level Increased	Blinks in red with 0.25 s on and 0.25 s off
Temperature Low, Level Decreased	Blinks in red with 0.5 s on and 0.5 s off
Temperature Normal Level Normal	Lit steady with green
Disabled	Lit steady with amber

Leakage Monitoring Indicator Type is intended to indicate when flooding is detected.

Table 1.4.12. Performance of the **"1" – "60"** LEDs for Indicators of **Leakage Monitoring** Type

Partition Condition	"1" – "60" LEDs Performance
Flooding Alarm	Blinks in red with 0.5 s on and 0.5 s off
Fault	Blinks in amber with 0.25 s on and 1.75 s off
Flood Detector Restored	Lit steady with green
Disarmed	Off
Disabled	Lit steady with amber

Note: S2000M Fire and Alarm Control Panel of ver.3.00 or higher shall be in use.

Table 1.4.13. Performance of the **"1" – "60"** LEDs for Indicators of **Door Monitoring** Type

Partition Condition	"1" – "60" LEDs Performance
Duress	Blinks in red with 0.5 s on and 0.5 s off
Communication Loss	Blinks in amber with 0.25 s on and 1.75 s off
Door Forced Open	Blinks in red with 0.5 s on and 0.5 s off
Door Held Open	Blinks in red with 0.25 s on and 1.75 s off
Door Open	Blinks in green with 0.5 s on and 0.5 s off
Door Closed	Lit steady with green
Disabled	Lit steady with amber

Note: S2000M Fire and Alarm Control Panel of ver.3.00 or higher shall be in use.

Table 1.4.14. Performance of the **"1" – "60"** LEDs for Indicators of **Access Control** Type

Partition Condition	"1" – "60" LEDs Performance
Communication Loss	Blinks in amber with 0.25 s on and 1.75 s off
Access Locked	Lit steady with red

Partition Condition	"1" – "60" LEDs Performance
Free Access	Blinks in green with 0.5 s on and 0.5 s off
Controlled Access	Lit steady with green
Disabled	Lit steady with amber

Note: S2000M Fire and Alarm Control Panel of ver.3.00 or higher shall be in use.

1.4.5 General indicators Fire 2, Fire, Prealarm, Intrusion, Panic Alarm, Arming Failed, Disabled, Fault indicate alarms and troubles from the partitions "1" – "60" occurred currently. These LEDs pulse synchronously with indicators of partitions which are in the relevant states. Thus, if several partitions are in various conditions then these indicators provide fast estimation of current situation and defining action priority. Table 16 describes performance of the indicators after alarms have been received.

Table 1.4.15. Performance of Single-Color LEDs

Partition Condition	LED	Performance
Fire 2	FIRE 2	Lit steady with red
Fire	FIRE	Red: 0.25 s on / 0.25 s off
Fire Prealarm	PREALARM	Red: 0.25 s on / 1.75 s off
Intrusion Alarm, Flooding Detected	INTRUSION	Red: 0.5 s on / 0.5 s off
Panic Alarm, Duress	PANIC ALARM	Red: 0.5 s on / 0.5 s off
Arming Failed	ARMING FAILED	Amber 0.5 s on and 0.5 s off
Disabled	DISABLED	Amber
Fault	FAULT *	Amber: 0.25 s on / 1.75 s off
Silenced	⌧	Amber

Note: * The FAULT LED indicates also loss of communication with the network controller.

The single-color LEDs are meant to indicate integrated conditions of partitions in scope of the module. Summarized conditions with respect to the whole system are to be indicated by the related S2000M.

Table 1.4.16. Reader LED Performance

Operation Condition	LED Performance
Waiting for Response…	Flashes with red and green alternately
Operation Permitted	Lit steady with green
Access Denied	Pulses with red within a second: 0.125 s on / 0.125 s off

Table 1.4.17. Availability of Indicator Types

Indicator Type	Available Under
Intrusion Intrusion 2 Fire Fault	S2000M of ver.1.20 and higher S2000M of ver.2.03 and higher Orion KD Suite of ver.7.4 and higher Orion Pro Suite of ver.1.10 SP1 and higher
Engineering Auxiliary Auxiliary 2 Auxiliary 3 Intrusion 3	S2000M of ver.2.03 and higher Orion Pro Suite of ver.1.11 and higher
Actuator	S2000M of ver.2.07 and higher Orion Pro Suite of ver.1.12 SP2 and higher
Leakage Monitoring Door Monitoring Access Control	S2000M of ver.3.00 and higher

Table 1.4.18. Availability of Operations

Operation	Effective Under
Arm / Disarm	S2000M of ver.1.20 and higher S2000M of ver.2.03 and higher Orion KD Suite of ver.7.4 and higher Orion Pro Suite of ver.1.10 and higher
Turn Actuator On / Off Reset Alarms	S2000M of ver.2.07 and higher Orion Pro Suite of ver.1.12 SP2 and higher

1.4.6   Pressing on one of "1" to "60" buttons sends the network controller a request to execute one of the commands Arm, Disarm, Turn Actuator On / Off, Reset Alarms. The network controller considers the received request and makes a decision about access to the requested action, the relevant indicator blinking until the command is either executed or rejected:

Request to arm, Request to disarm, Request to switch the actuator on / off, Request to reset alarms	Blinks with green and amber alternately four times per second

1.4.7   **Table 1.4.19** displays operation patterns of the buzzer depending on the conditions of related partitions.

Table 1.4.19. Buzzer Performance

Conditions	Sounding Pattern
Activated	Changes tone once per two seconds
Start Delay, Start Delay Hold more than 15 seconds left	Changes tone once per second
Start Delay, Start Delay Hold less than 15 seconds left	Changes tone twice per second
Start Delay, Start Delay Hold less than 5 seconds left	Changes tone four times per second
Fire 2 Alarm	0.8 s On / 0.2 s Off
Fire Alarm	0.6 s On / 0.4 s Off
Fire Prealarm	0.25 s twice / 1.25 s Off

Conditions	Sounding Pattern
Intrusion Alarm	0.25 s On / 0.25 s Off
Panic Alarm	0.25 s On / 0.25 s Off
Fault	0.25 s On / 1.75 s Off
Access Request (touching with an iButton)	Turns on for 0.25 s
Access Denied (for the iButton)	Turns on for 1 s
Access Granted	Turns on for 0.25 s
Offline	0.25 s On / 1.75 s Off
Others	Off

1.4.8   The buzzer can be silenced by pressing ⊠.

The UProg utility provides restricting access to silencing sound signals. In such case the button ⊠ is disabled, and the activated buzzer is turned off after touching the iButton reader with one of iButtons which codes are enrolled in the module's memory. Sounds can be silenced automatically except for Fire Prealarm, Fire Alarm, Fire 2 Alarm if the relevant options are defined in the module's configuration. Duration of sounds is selected while configuring the module. In this case no message about silencing is sent to the network controller.

1.4.9   Partitions can be operated (armed / disarmed) using control buttons in two ways: with restricting access to operations (via an iButton) or with free access to operations.

1.4.10 In case of **restricted access**, the module's buttons are effective only after authorization performed by user's presenting the relevant credential to the in-built iButton reader or to a reader connected to the module. The credential shall be previously programmed to operate partitions: a list of partitions permitted for operation and permitted actions shall be defined. The partitions in question shall also be related to the relevant module indicators.

The buttons are operable within 20 s since the credential is presented (the reader LED illuminates). After pressing a permitted button it is kept to be operable again for 10 s. To cancel permission for operation, please push the Reset button ⊠.

The buttons "1" to "60" provide executing the following operations:

Table 1.4.20. How to Operate Partitions Using Control Buttons

To disarm	Press quickly on the button when the partition has one of the states Armed, Arming Failed, Intrusion, Fire Prealarm, Fire Alarm
To arm	Press quickly on the button when the partition is in the Disarmed state
To turn the actuator on	Press quickly on the button when the partition is in the Actuator in Initial Position state
To turn the actuator off	Press quickly on the button when the partition is in the Actuator in Operating Position state or Actuator Failed state
To reset alarms	Press quickly on the button

1.4.11 In case of **free access** to operating partitions, an access code shall be assigned to the module and written into its configuration by means of the UProg utility. The module sends the network controller this code upon pushing any of the buttons "1" to "60". The same code along with the relevant authorities to operate partitions shall be enrolled into the network controller database.

1.4.12 The module sends the network controller the following messages over the RS-485 interface:

Tamper Alarm	The module's enclosure has been open (the cover panel has been removed)
Tamper Restored	The module's enclosure has been closed (the cover panel has been put into place)
Power Failed	The power voltage has dropped below a permissible threshold
Power Restored	The power voltage has been in the normal range
Test	Indication test has been run

Silencing	The button ⊠ has been pressed or the sound alarm has been silenced by touching the module reader with iButton in case of alarms
Device Reboot	The module is reenergized

1.4.13 In case of loss of communications over RS-485 for more than 60 s, all events are sent with time stamps determined by internal clock of the module. All LEDs except for the power indicator turn off while the FAULT LED turns on. Once per hour the module automatically synchronizes with the S2000M control panel. The module provides buffering event transmitted over RS-485.

1.4.14 The *Network Address* module's parameter is meant to identify the module uniquely within an Orion integrated security system. The module sends messages to and receives commands from the network controller only with the address defined by this parameter. Network address shall be unique for every module.

The *Customizing Response Pause* module's parameter provides operating the module within a system with a sophisticated network topology where long layover can exist, for example, while converting RS-485 data into other interfaces intended for transmission over local area networks, fiber optic channels, or radio channels.

Current values of Network Address and Response Pause can be unset to factory (default) values by successive pressing on the tamper switch three times for a long time and one time quickly (dush-dush-dush-dot).

A long press here means holding the tamper switch pressed for at least 1.5 s. A quick press here is implied as holding the tamper switch pressed for 0.1…0.5 s. Pauses between presses should be at least 0.1 s and no more than 0.5 s every.

1.5 Measuring Instruments, Tools, and Accessories

While mounting, commissioning, and maintaining the module 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 500 V, AC/DC current up to 5 A, resistance up to 20M Ohm
Flat head insulated screwdriver	3.0x50 mm
Cross slot insulated screwdriver	2x100 mm
Side-cutting pliers	160 mm
Pliers	160 mm

1.6 Marking

Every module has a marking applied to the rear side of its enclosure.

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

1.7 Packing

The module along with accessory kit and operation documentation is packaged in a separate cardboard box.

2   Intended Use

2.1 Operating Restrictions

The module's design doesn't imply operating it in aggressive and dusty environments and in explosion and fire hazardous premises.

Correct performance of the module cannot be guaranteed if its electromagnetic environment does not meet the operation conditions defined in Section 1.2 of this manual.

2.2 Preparing for Use

2.2.1 Safety Measures During Preparation

The design of the module meets the requirements of electrical and fire safety in accordance with Russian Standards GOST 12.2.007.0-75 and GOST 12.1.004-91.

The module has no circuits under a hazardous voltage.

Mounting and maintenance of the module should be carried out by persons with the second or higher electric safety qualification level.

2.2.2 Module Design
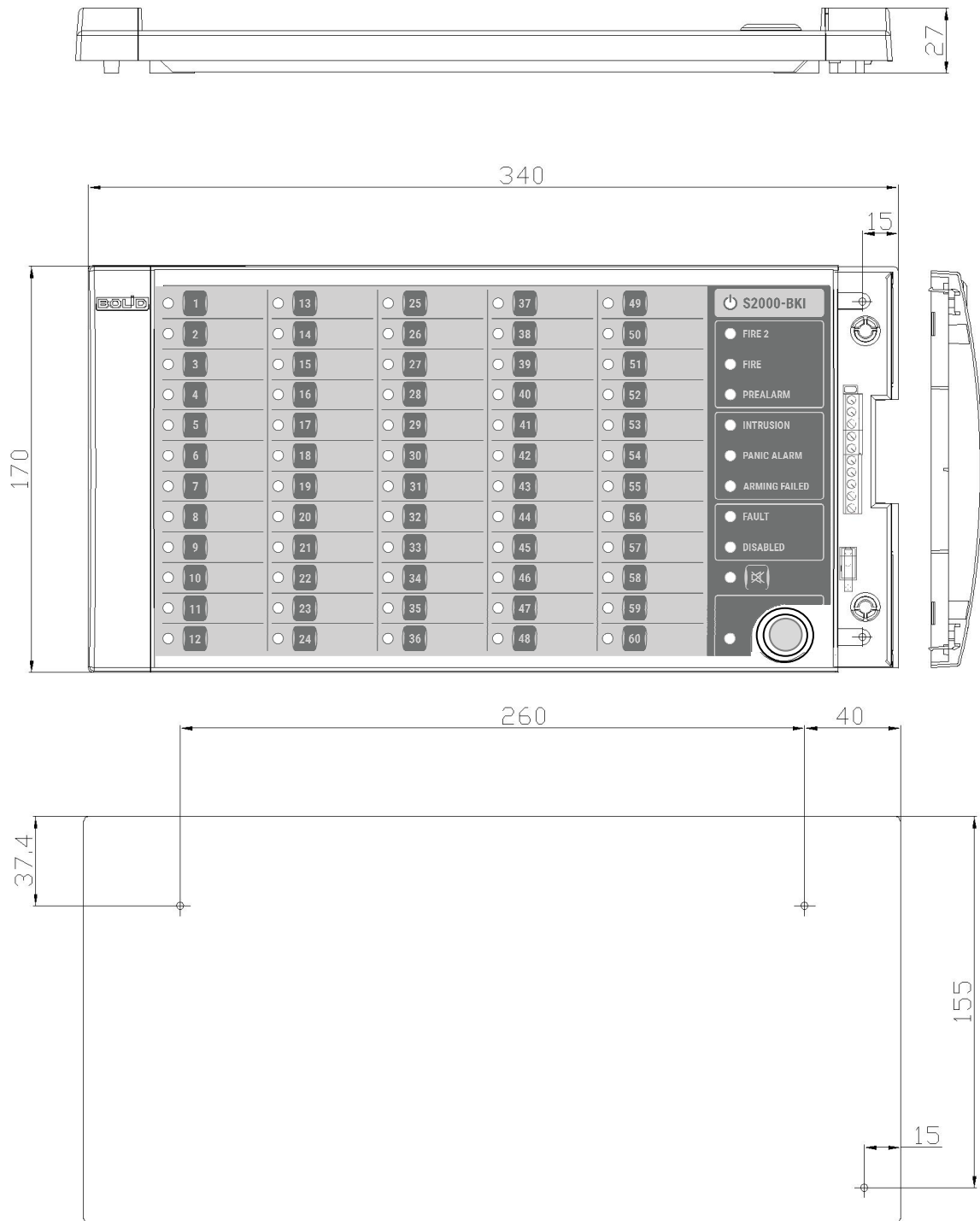
Figure 1. View, Overall and Mounting Dimensions

2.2.3 Mounting

Mount the module in line with the Russian regulatory document РД.78.145-92 "Rules for Manufacturing and Commissioning. Fire and Intrusion Alarm Installations". The module shall be installed at a height that is suitable for operating and maintaining the equipment.

The module is to be installed on a wall or another structure at places protected against exposure to atmospheric precipitation and mechanical damage.

Prior to mounting please ensure that the wall the module is to be mounted to is solid, flat, and dry.

Mark three mounting places on the wall as per Figure 1.

Drill the mounting holes. Then insert wall plugs to the holes and screw two woodscrews provided to the two upper holes so that the distance between a woodscrew head and the wall is about 7 mm.

Remove the right-side panel that covers mounting area of the module by pulling the cover panel forward.

Suspend the module onto the two woodscrews. Screw the woodscrew into the mounting hole (see Figure 1) and fix the module on the wall.

It is acceptable to install the module within mounting enclosures (cabinets, boxes, etc.). If the module and any other unit are arranged adjacently then vertical and horizontal distances between them shall be at least 10 mm each.

2.2.4 Connecting the Module

Connect wires to the terminals as shown in Figure 2.
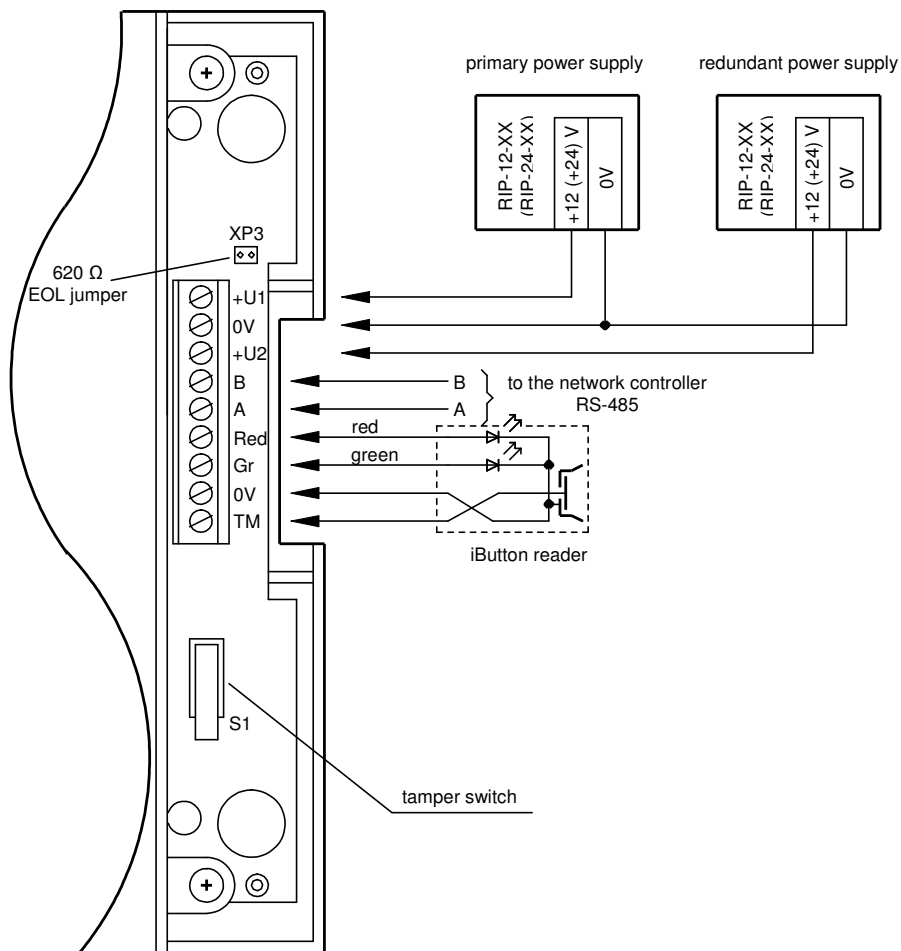
Figure 2. External Connection Diagram

Please observe polarity while connecting the module to power supplies.

The cross section of wires should not exceed 1.5 sq. mm.

If the module, the control panel, or other equipment connected to the RS-485 interface bus are supplied by different power supplies then couple their relevant "0V" circuits.

Unless the module is the last or the first device in the RS-485 interface bus, remove the EOL jumper from the module's PCB (see Figure 2).

Put the right-side cover panel back onto place.

2.2.5 Programming the Module

To be adjusted to a specific use case, the module supports changing configuration parameters stored in its non-volatile memory by means of the UProg software utility (version 4.1.0.48 or higher). A personal computer and one of the interface converters PI-GR, S2000-PI, S2000-USB, USB-RS485, or S2000M (version 2.03 or higher) are to be in use. The last version of UProg Configuration Tool along with additional information relating to operating the module can be found online at http://bolid.ru. Table 2.2.5.1 describes configuration parameters of the module.

Table 2.2.5.1. Module's Configuration Parameters

Parameter	Description	Range	Default Value
1. Network Address	The address of the module in the line of the RS-485 interface bus	1 – 127	127
2. Response Pause	The admissible delay for the module to answer requests of the network controller	(1.5 – 500) ms	1.5 ms
3. Partition Number	The number of the Orion system partition associated with the LED	0 – 9999	1-60
4. Indicator Type	Defines performance of the indicator depending on the type of alarm loops combined to the partition	Intrusion Fire Auxiliary Intrusion 2 Auxiliary 2 Engineering Auxiliary 3 Actuator Intrusion 3 Fault Leakage Monitoring Door Monitoring Access Control	Intrusion
5. Button Action	Defines the effect of pressing on the button	Unused Arm Disarm Arm / Disarm Turn the actuator off Turn the actuator on Turn the actuator on/off Reset	Arm / Disarm
6. Audio Alarm Duration for Fire2, Fire, Fire Prealarm Conditions	Sound alarms can be disabled provided that the S2000M panel is located closely to the module	Off: Disabled, otherwise the buzzer sounds infinitely	Infinitely
7. Audio Alarm Duration for Fault	The time on elapsing which a sound alarm is silenced automatically.	(0 – 255) s 255 means unlimited time	255
8. Audio Alarm Duration for Discharge /Activation	Sound alarms can be disabled provided that the S2000M panel is located closely to the module		255
9. Audio Alarm Duration for Attack (Panic Alarm, Duress)	The time on elapsing which a sound alarm is silenced automatically.		255
10. Audio Alarm Duration for Intrusion			255

Parameter	Description	Range	Default Value
11. Show "Duress"		On / Off	Off
12. Silence with iButton	Silencing the module by means of touching with iButton	On / Off	Off
13. Two Power Inputs Monitoring		On / Off	Off

2.2.6 Updating Firmware

The module provides updating its firmware. A new firmware version can expand functions of the module or fix errors of the current version. The list of available firmware versions, their key aspects, and recommended updates can be found online at http://bolid.ru on the page of S2000-BKI, on the Download tab.

Firmware is to be updated by means of UProg.exe, link to the actual version of which being available at the same page. The procedure of updating firmware is described in the user's manual; it can be found in the program help.

Updating firmware can result to changes in the module's configuration, so prior to updating please save the module's configuration file using UProg.exe. After updating is completed the configuration from the file should be written to the module.

The procedure of updating takes several minutes.

The module can enter the updating mode as a result of an unexpected failure. In this case updating (restoring) firmware under UProg.exe helps return the module to normal operation without contacting a service center.

2.2.7 Testing Operability

Testing operability is conducted as described in Clause 3.4 of this manual.

2.2.8 Extreme Situation Actions

Warning!
If sparks, fire, smoke, and / or smell of burning are found at the installation site of the device, the device must be de-energized and sent for repair

3 Maintenance

3.1 General

The device is to be maintained under the following schedule:

Table 3.1.1

Task Description	Frequency
Visual checking	Monthly
Check for operability	At least six-monthly

3.2 Safety Precautions

The module shall be maintained by persons certified with the second or higher electrical safety qualification level.

3.3 Maintenance Procedures

3.3.1 Inspecting the module includes checks for no mechanical damages, fastening reliability, and proper condition of connecting wires and contact joints.

3.3.2 The module should be tested by operating engineering personnel with second or higher electric safety qualification level.

3.3.3 Inspect the module at normal climatic conditions:

− Relative humidity 45% through 80%;

− Ambient temperature 15°C through 35°C;

− Atmospheric pressure 630 mm Hg through 800 mm Hg (84 through 106.7 kPa).

3.3.4 While inspecting the module, always shut off the module's power before connecting and disconnecting its external circuits.

3.3.5 Testing procedures include inspecting operability and testing indication in the Indication Test mode.

3.3.6 Preparations for testing the module includes:

a) Check the package conditions and unpack the module;

b) Check the delivery to comply with Section 1.3 of this manual, presence and content of the accessory kit, serial number of the module and its production date to comply with those ones specified in the operation manual;

c) Ensure the module enclosure is not damaged;

d) Shake the module and ensure there are no foreign bodies within it;

e) Ensure that the terminal blocks are fastened properly.

3.3.7 To test operability of the module, please follow the instructions of Section 3.4 of this manual.

3.4 Performance Testing

3.4.1 Inspecting Operability

To inspect the module, use an S2000M panel. Connect the module's RS-485 circuits and power circuits to the relevant terminals of the panel.

Connect a milliammeter in series with the power circuit of the module.

Apply power to the module and the panel.

The power LED of the module ☉ (the upper LED near the device name) shall show green solid light within 2 s.

Measure the current consumed by the module. Its value shall not exceed 200 mA.

Figure 3

Within a minute since powering on, the panel shall display a message about detecting a device with the network address currently assigned to the S2000-BKI (factory value of the module address is 127). Figure 3 shows the display of the S2000M panel with the relevant message.

If several messages accumulated by the module have been received by the panel, you can browse them by the arrow buttons «◄» and «►» on the S2000M.

3.4.2 Checking in the Indication Test mode

Initiate the self-diagnostic mode for the module by selecting the Indication Test command in the S2000M menu followed by selecting the module address (the factory address of the module is 127); see the S2000M user's manual for details.

If the module is operable, its indicators turn on in the following order:

a) The columns of LEDs "1" – "60" turn on with amber one-by-one; the indicator FIRE 2 turns on with amber; the reader LED turns on with amber; the indicators ARMING FAILED, DISABLED, FAULT turn on with amber;

b) The rows of LEDs "1" – "60" turn on with amber one-by-one, FIRE 2, FIRE, INTRUSION, PANIC ALARM, the reader LEDs turn on with red, then ☉, FIRE 2 (with changing color), FIRE, PREALARM, INTRUSION, PANIC ALARM, ARMING FAILED, FAULT, DISABLED, and the reader LED (with changing color) turn on one-by-one;

c) The LEDs "1" – "60" turn on with amber and at the same time the indicators ⏻, FIRE 2, FIRE, PREALARM, INTRUSION, PANIC ALARM, ARMING FAILED, FAULT, DISABLED, and the reader LED turn on;

d) The LEDs "1" – "60" turn on with red and at the same time the indicators ⏻, FIRE, PREALARM, INTRUSION, PANIC ALARM, and the reader LED turn on with red;

e) The LEDs "1" – "60", ⏻, FIRE 2, and the reader LED turn on in green;

f) The test completes.

The self-diagnostic mode switches off after a press on ⊠ or automatically when the test has completed.

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 faulty equipment is to be performed by the manufacturer or in authorized repair centers. The equipment shall 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 problem is applied to the submitted equipment.

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

Claims should be submitted to the following address:

NVP BOLID, #4 Pionerskaya Str., Korolyov, Moscow Region, 141070, Russia

Phone/fax: +7 (495) 775-71-55 (PBX). 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

The module in the consumer package shall be stored as per Storage Conditions 1 in line with GOST 15150-69.

In the premises where the module is stored, there shall be no vapors of acids, alkalis, aggressive gases, and other harmful substances which result in corrosion.

6 Transporting

Transporting the module is admitted in a transport package at ambient temperatures -50 through +50°C and relative humidity up to 95 % at +35°C.

If transported under negative ambient temperatures or high air humidity, then before installing the modules shall be kept unpacked for at least 24 hours in a room with normal climatic conditions.

7 Disposal

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

The content of precious materials: does not 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 module 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.

While sending the product for repair, please be sure to include a report describing the potential failure.

9   Certificates Information

S2000-BKI Control Button and Indicator Module meets the requirements of Technical Regulations of Eurasian Economic Union 'On Requirements for Fire Safety and Fire Extinguishing Equipment' (TR EAEU 043/2017) and is covered by the conformity certificate No. ЕАЭС RU C-RU.ПБ68.В.00382/21.

S2000-BKI Control Button and Indicator Module meets the requirements of Technical Regulations of Custom Union 'Electromagnetic Compatibility of Technical Equipment' (TR CU 020/2011) and is covered by ЕАЭС № RU Д-RU.НР15.В.06633/20 Conformity Declaration.

S2000-BKI Control Button and Indicator Module is covered by the certificates of conformity of transport safety technical arrangements with their functional properties No. МВД РФ.03.000971.

Production of S2000-BKI Control Button and Indicator Module is awarded with the conformity certificate GOST R ISO 9001. The certificate can be found at the website http://bolid.ru in the section ABOUT COMPANY.