



EAC

Standalone Addressable Device Programmer

S2000-APA

User's Manual

This User's Manual is intended to help for studying operability principles and maintenance of S2000-APA Standalone Addressable Device Programmer.

Please read the instructions completely before connecting, operating, adjusting, or maintaining this programmer.

CONTENTS

1	General.....	4
1.1	Specifications.....	4
1.2	Standard Delivery	4
1.3	Safety Precautions.....	4
2	Description.....	5
2.1	Main Menu.....	6
2.2	Adjusting the Programmer.....	7
2.2.1	Adjusting the Data Communication Protocol	7
2.2.2	Adjusting the Backlight Brightness	8
2.2.3	Adjusting LCD Contrast	9
2.2.4	Adjusting the Time Before the Backlight Turns Off.....	10
2.2.5	Adjusting Auto-shutdown Settings	11
2.2.6	Adjusting Sound Settings.....	12
2.2.7	Battery Voltage.....	13
2.3	Changing Address	14
2.3.1	Changing Address of an Addressable Device Using the DPLS Protocol	14
2.3.2	Changing Address of an Addressable Device Using the PA Protocol.....	17
2.4	Setting Addresses	20
2.5	Reading Data.....	22
2.5.1	Reading Parameters of an Addressable Device Using the DPLS Protocol.....	22
2.5.2	Reading the Status of an Addressable Device Using the PA Protocol.....	24
2.6	Information	26
2.6.1	Programmer Data	26
2.6.2	Manufacturer Data	26
2.6.3	Manufacturer Address	26
2.6.4	Company Phone/Fax	27
2.6.5	Manufacturer Site and E-Mail.....	27
3	Connecting to the Charger	28
4	Updating Programmer Firmware.....	29
5	Troubleshooting	31
6	Maintenance.....	32
7	Storage	32
8	Transporting.....	32
9	Manufacturer Data.....	32
10	Certificates.....	32
11	Product Acceptance Certificate	32

1 General

S2000-APA Standalone Addressable Device Programmer (hereinafter referred to as the APA) is designed to assign addresses to addressable devices connected into the polling loops of S2000-KDL controllers and addressable devices connected into the Fire Threshold Addressable alarm loops of Signal-10 control units with PA data communication protocol. Also APA provides reading parameters and states of the addressable devices.

1.1 Specifications

Parameter	Value
Power Voltage	3.6 V (from built-in batteries)
Battery Capacity	800 mAh × 2 pcs
Max Consumed Current	70 mA
Current Consumption in Quiescent Mode	10 mA
Current Consumption in Turned Off Mode	100 µA
Dimensions	105 mm × 279 mm × 58 mm
Weight	500 gram
Operating Temperatures	0 to +50°C
Ingress Protection Rating	IP30

1.2 Standard Delivery

Item	Q-ty
Standalone Addressable Device Programmer	1 pcs.
S2000-APA Datasheet	1 pcs.
Base Adapter (to accommodate various detector types)	1 pcs.
220V AC to 5V DC Power Adapter (1A)	1 pcs.
USB Type-A to USB Type-B Connection Cable	1 pcs.
Coffer with Belts	1 set
Packing	1 pcs.

1.3 Safety Precautions

WARNING: The programmer is intended to operate at ambient temperatures 0 to 50°C.

The programmer is powered by lithium-ion batteries, so do not expose the programmer to high and low ambient temperatures in order to avoid battery failures.

The programmer is designed for operation in premises with regulated and unregulated climatic conditions. The design of the programmer does not provide operating under the influence of aggressive environment.

2 Description

To program smoke, heat, and gas detectors with addresses, APA is equipped with a DIP-34A-03 base **1**. To program other addressable devices, install the base adapter provided **4** into the base. Figure 1 shows the view and the control buttons of the APA.



Figure 1. Appearance and Controls of the Programmer

- 1 – Base for inserting an analog addressable detector
- 2 – Display
- 3 – Keypad
- 4 – Base adapter (with red wire for “+PL” and blue wire for “-PL”)
- 5 – Base adapter cover
- 6 – USB port

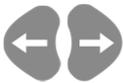
2.1 Main Menu



- 1 – Name of the selected menu option
- 2 – Icon of the current menu option
- 3 – Battery indicator
- 4 – Indicator of the selected data communication protocol (DPLS/PA)



Switch the programmer on/off (hold the button pushed for 3 seconds).



Move between menu options.



Enter the selected menu option.



Cancel/Quit to the main menu.

The options of the main menu are as follows.



Change Address



Set Addresses



Read Parameters



Settings



Info

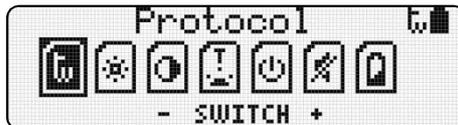
2.2 Adjusting the Programmer

2.2.1 Adjusting the Data Communication Protocol

Select *Settings* in the main menu by means of the  buttons:



Then press  :



The first menu option provides selecting the data communication protocol for the programmer to operate with an addressable device:



The DPLS protocol (S2000-KDL)



The PA protocol (Signal-10)

By means of the  buttons select the required protocol. The selected protocol will be indicated by the icon at the upper right corner of the display:



For the DPLS protocol, and



For the PA protocol

To save changes and to return to the main menu, press  .

To return to the main menu without saving changes, press  .

2.2.2 Adjusting the Backlight Brightness

Select *Settings* in the main menu with the help of the  buttons:



Then press  .

Use the buttons  in the Settings menu to select the option  *BL Brightness*:

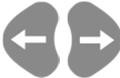


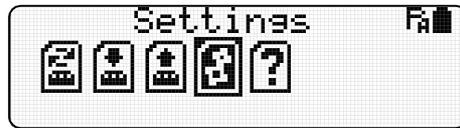
By the buttons  adjust brightness level of the backlight.

To save changes and to return to the main menu, press  .

To return to the main menu without saving changes, press  .

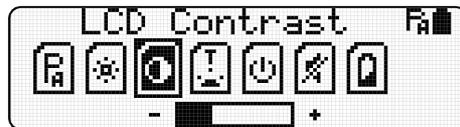
2.2.3 Adjusting LCD Contrast

Select *Settings* in the main menu by means of the  buttons:



Then press .

Select the *LCD Contrast* option () of the Settings menu by the  buttons.



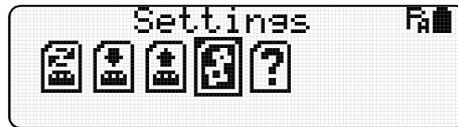
Adjust the contrast level of the display by means of the  buttons.

To save settings and return to the main menu, press .

To return to the main menu without saving changes, press .

2.2.4 Adjusting the Time Before the Backlight Turns Off

Select *Settings* in the main menu by means of the  buttons:



Then press .

Use the  buttons in the Settings menu to select the option  *Backlight Off*:



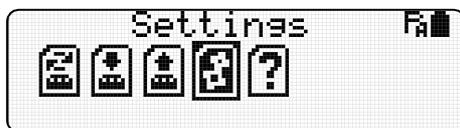
Select the timeout value using the buttons .

To save changes and to return to the main menu, press .

To return to the main menu without saving changes, press .

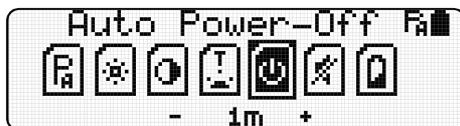
2.2.5 Adjusting Auto-shutdown Settings

Select *Settings* in the main menu by means of the   buttons:



Then press  .

In the Settings menu use the buttons   to select the option  *Auto Power-Off*:



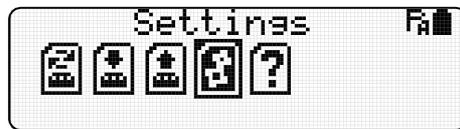
Using the buttons   select the time for the programmer to shutdown automatically.

To save changes and to return to the main menu, press  .

To return to the main menu without saving changes, press  .

2.2.6 Adjusting Sound Settings

Select *Settings* in the main menu by means of the  buttons:



Then press .

Select the *Sound* option in the Settings menu by means of the  buttons:



Then select the required setting by the buttons  :



Sound effects are available, or



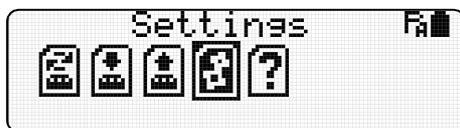
Sound effects are disabled.

To save changes and to return to the main menu, press .

To return to the main menu without saving changes, press .

2.2.7 Battery Voltage

Select *Settings* in the main menu by means of the  buttons:



Then press  .

In the Settings menu by means of the  buttons select the option  *Battery Voltage*:



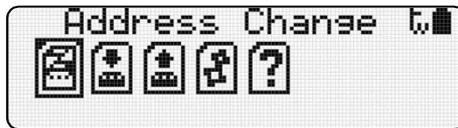
In the information area of the display the current battery percentage of capacity and battery voltage shall be indicated.

To quit to the main menu, press  or  .

2.3 Changing Address

2.3.1 Changing Address of an Addressable Device Using the DPLS Protocol

In the main menu use the buttons   to select the option  *Address Change*:



Select DPLS as the protocol type (see Section *Adjusting the Data Communication Protocol*).

Connect the addressable device to the programmer via the DIP-34A-03 base or via the base adapter

observing polarity and press . In case of incorrect polarity or a short circuit failure a warning shall be issued:



To quit to the main menu, press  or .

Repair the failure and press .



To stop searching and quit to the main menu, press .

To stop searching as soon as the required device has been found, press  or wait until the search is completed.

On completing the operation the result can be seen on the display:

- If no addressable device is found then the display will be as follows:



To quit to the main menu, press  or .

S2000-APA

– If the addressable device is found then its name, address and the firmware version will be shown on the display:

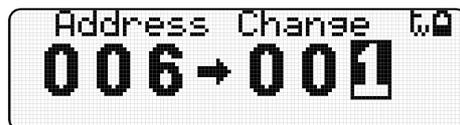


- 1: The name of the addressable device;
- 2: The device picture;
- 3: The device address;
- 4: The firmware version of the addressable device.

If several addresses are assigned to the addressable device then use the buttons  to select the address to be changed:



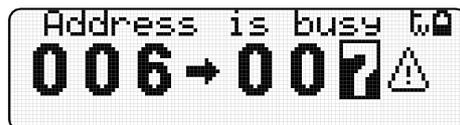
Then press .



By means of the  buttons select the position of the digit to be changed;

By means of the  buttons change the digit values of the address.

If the new address has been already occupied then the programmer displays a warning:



To cancel operation and return to the address selecting menu press .

To confirm changing the address, press .

If the address has already been in use then the programmer will request a confirmation:



To cancel, press .

To continue, press .



When the change address operation is completed the procedure of addressable device search will be started:



On completing the search the display will show the information about the addressable device:



To quit to the main menu, press



If the addressable device has not responded the display indicates an error:



To quit to the main menu, press



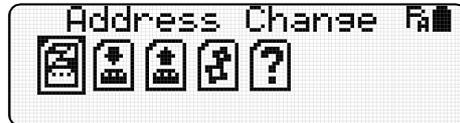
or



2.3.2 Changing Address of an Addressable Device Using the PA Protocol

The PA address can be changed only for addressable devices which have already been assigned with addresses.

In the main menu use the buttons   to select the option  *Address Change*:



Select PA as the protocol type (see Section *Adjusting the Data Communication Protocol*).

Connect the addressable device to the programmer via the DIP-34A-03 base or via the base adapter

observing polarity and press  . In case of incorrect polarity or a short circuit failure a warning shall be issued:



To quit to the main menu, press  or  .

Repair the failure and press  .



To stop searching and quit to the main menu, press  .

To stop searching as soon as the required device has been found, press  or wait until the search is completed.

On completing the operation the result can be seen on the display:

- If no addressable device is found then the display shows the message as follows:



To quit to the main menu, press  or  .

- If the addressable device is found then the display shows its address:



To quit to the main menu, press .

To change the address, press .



By means of the  buttons select the position of the digit to be changed;

By means of the  buttons change the digit values of the address.



To cancel, press .

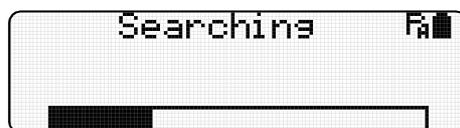
To change address for a *DIP-34PA* or *S2000-IP-PA*:

- Press and hold the LED button on the addressable device.
- Holding the button pressed, press .



- Wait until the LED of the addressable device starts illuminating.
- Release the button when the LED of the addressable device has turned off.

If the address change operation has succeeded then a search procedure shall be started:



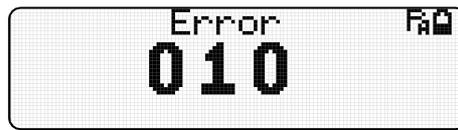
On completing the search the display will show the information about the addressable device with the new address:



To quit to the main menu, press .

S2000-APA

If the addressable device has not responded to the command to change address then the display indicates an error:



To quit to the main menu, press  or .

WARNING: Addressable detectors operating with a Signal-10 come with indefinite factory addresses. To assign addresses to them do the following:

For *DIP-34PA* and *S2000-IP-PA* detectors it is necessary to:

- Press the LED button on the addressable device and holding it pressed start the operation of changing address.
- Wait until the detector LED starts illuminating.
- Release the button when the LED has turned off. It means that the first address is assigned to the addressable device.
- Start the operation of changing address to assign a required address.

For an IPR 513-3PAM an address is assigned as discussed in its Instruction Manual. For *DIP-34PA* and *S2000-IP-PA* addresses also can be assigned as discussed in their Instruction Manuals.

2.4 Setting Addresses

The mode of setting addresses is available only for the DPLS protocol.

Select DPLS as the protocol type (see Section *Adjusting the Data Communication Protocol*).

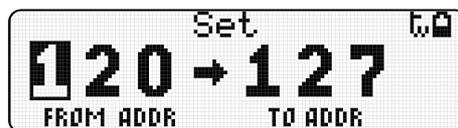
In the main menu use the buttons   to select the option  **Addr Settings**:



Then press  .



Use the buttons   and   to select an initial value of an address range:



To quit to the main menu, press  .

To proceed to setting of the last address of the range, press  .



Use the buttons   and   to define a last address value provided that this value should be more or equal to the first address value:



To return to the previous step, press  .

To start the procedure of setting addresses, press  .

Connect an addressable device to the programmer via the DIP-34A-03 base or via the base adapter observing polarity.

The programmer will automatically find the addressable device and change its address for a next address of the given range.

S2000-APA

When an addressable device is responding to programmer commands the display indicates the procedure of changing address:

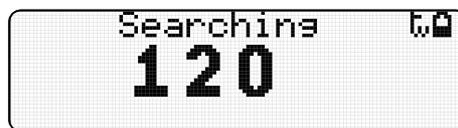


If the addressable device with the new address has not responded the display indicates an error:

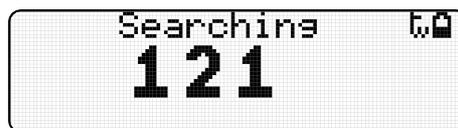


To cancel operation and quit to the main menu, press .

To continue programming address, press .



If the command of changing address has succeeded then the address indicated on the display will be a new one:



For an addressable device with several addresses the programmer checks whether the device responds from the new addresses, automatically takes into account the range of occupied addresses, and changes the number for a next one from a given sequence. To continue, remove the addressable device from the programmer and connect the next addressable device. The procedure of setting address shall start automatically for a new address.

The mode of setting addresses terminates when the last given address has been assigned:



To quit to the main menu, press .

To continue, press .



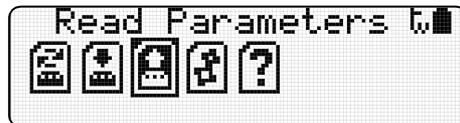
To continue, define a new range of addresses.

To quit to the main menu, press .

2.5 Reading Data

2.5.1 Reading Parameters of an Addressable Device Using the DPLS Protocol

Select *Read Parameters* (the icon ) in the main menu by the   buttons:



Select DPLS as the protocol type (see Section *Adjusting the Data Communication Protocol*). Connect the addressable device to the programmer via the DIP-34A-03 base or via the base adapter

observing polarity and press .



To stop searching and quit to the main menu, press .

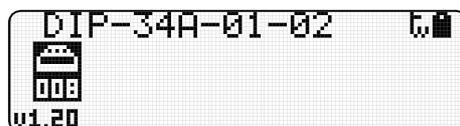
To stop searching as soon as the required device has been found, press  or wait until the search is completed.

On completing the operation the result can be seen on the display:

– If no addressable device is found then the display shows the message as follows:

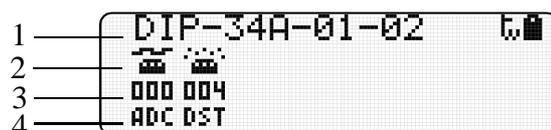


– If the addressable device is found then the display shows its name, address(es) and firmware version:



If the addressable device is assigned to several addresses then select the required address by the

  buttons and press .



- 1 – The name of the selected addressable device;
- 2 – The icon of the parameter;
- 3 – The value of the parameter;
- 4 – The description of the parameter or the units of measurement.

S2000-APA

The parameter icons can be:

-  - Request for analog-to-digital converter value
-  - Request for dustiness value
-  - Request for voltage value

Parameters and units of measurement:

-  - Analog-to-digital converter units
-  - Dustiness of the smoke chamber of the detector
-  - Parts-per-million (10^{-6})
-  - Degrees Centigrade
-  - Percentage
-  - Volts

2.5.2 Reading the Status of an Addressable Device Using the PA Protocol

In the main menu use the buttons   to select the option  **Read Parameters**:



Select PA as the protocol type (see Section *Adjusting the Data Communication Protocol*). Connect the addressable device to the programmer via the DIP-34A-03 base or via the base adapter

observing polarity and press  .



To stop searching and quit to the main menu, press  .

To stop searching as soon as the required device has been found, press  or wait until the search is completed.

On completing the operation the result can be seen on the display:

- If no addressable device is found then the display will be as follows:

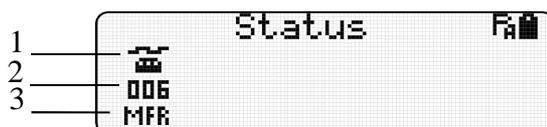


- If the addressable device is found then its address will be shown on the display:



To quit to the main menu, press  .

To read the status of the addressable device, press  .



- 1: Addressable device picture;
- 2: The code of the status of the addressable device;
- 3: The short description of the status type.

S2000-APA

The status can be one of the following:



- The smoke alarm is dusted and requires service



- Norm



- Fault



- Tested



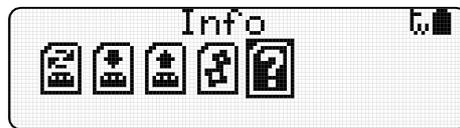
- Fire Alarm (for a smoke or heat detector)



- Manual Fire Alarm (for a manual call point)

2.6 Information

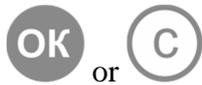
In the main menu use the buttons   to select the option  *Info*:



Then press  .



Move between menu options



Quit to the main menu

2.6.1 Programmer Data



Device Type: S2000-APA

Firmware version: V1.00

Model: 0

Revision: 5

Date: 05.2017

ID: 01234567

2.6.2 Manufacturer Data



Manufacturer: Bolid CJSC

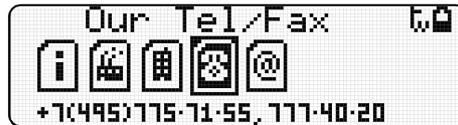
2.6.3 Manufacturer Address



Manufacturer address: 4 Pionerskaya Str., Korolev, Moscow Region, Russia.

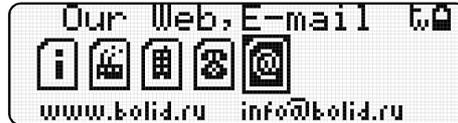
S2000-APA

2.6.4 Company Phone/Fax



Company phone/fax: **(495) 775-71-55** (multi-channel), **777-40-20**

2.6.5 Manufacturer Site and E-Mail



E-mail: info@bolid.ru

The last version of the firmware along with additional information about operating the programmer are available in Internet at the address of:

www.bolid.ru.

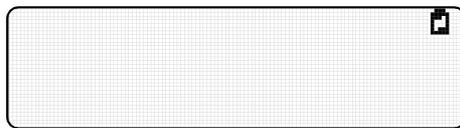
3 Connecting to the Charger

To recharge batteries, use the AC/DC power adapter supplied. Connect the programmer to the power adapter via the USB port.

If the programmer is turned off then the display shall indicate the charging mode:



This display indicates charging in progress



This display indicates that charging has been completed

If the programmer is turned on then charging mode is indicated by the blinking battery icon  in the top right corner of the display:



When charging is completed the programmer issues a sound and the battery icon stops blinking.

 – The icon shows the level of battery charge.

 – The icon shows that the programmer is connected to the charger.

WARNING: While the batteries are being charged the programmer doesn't turn off automatically. To switch the programmer off, press and hold the button  .

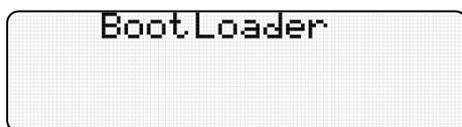
4 Updating Programmer Firmware

Prior to connecting the programmer to a personal computer for the first time it is necessary to install its driver. For doing so:

1. Go to <http://bolid.ru/production/orion/support-hardware/apa.html#download> (*PRODUCTS* → *Integrated security system “Orion”* → *AUXILIARY EQUIPMENT* → *S2000-APA* → *Download*). In the section *Distributives* select the driver zipfile.
2. Download the file *usb_rs_exar.zip* and unpack it.
3. Run the driver installation file *xrusbser_ver2200_installer.exe* from the EXE folder.
4. Follow the installation instructions.

To switch the programmer to the firmware update mode (**BootLoader**), connect the programmer to the PC by means of the USB cable. If the programmer is turned on, turn it off. Then press both the

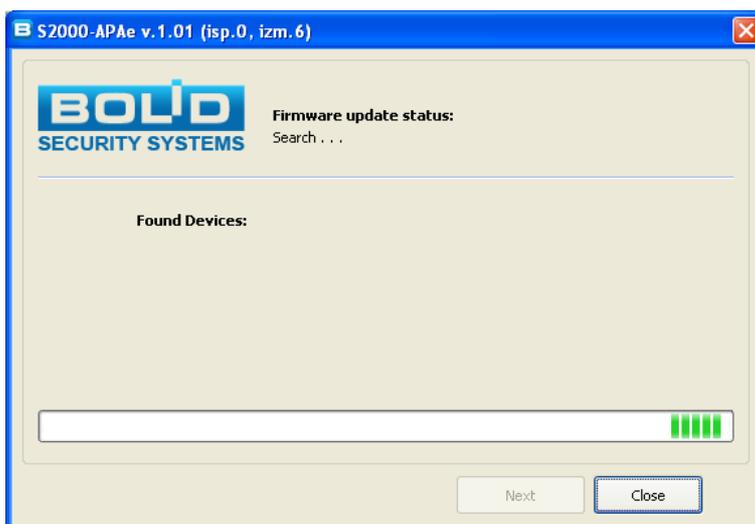
buttons  and  simultaneously and hold them pressed for at least 3 seconds.



If the programmer is connected for the first time then a new hardware installation wizard software will be run. Wait until installation has been completed.

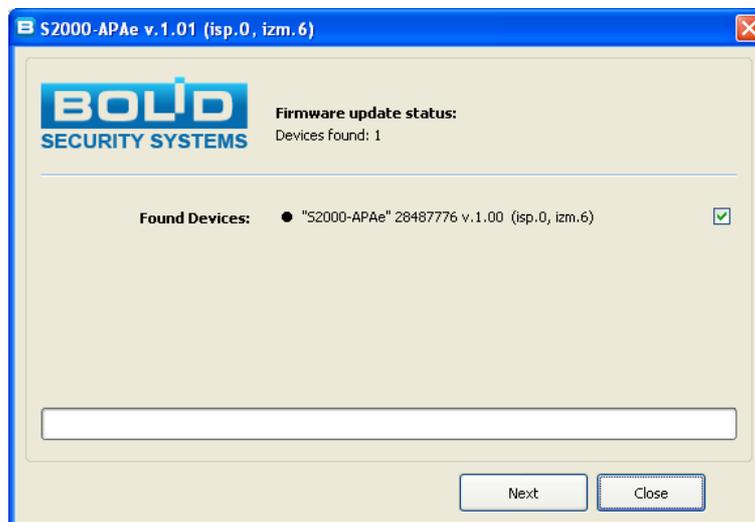
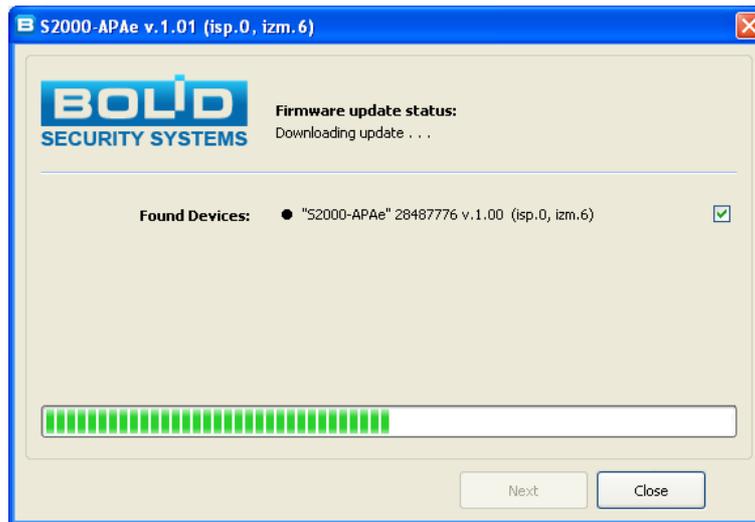
The file with update firmware can be found at the address of <http://bolid.ru/production/orion/support-hardware/apa.html#download> (*PRODUCTS* → *Integrated security system “Orion”* → *AUXILIARY EQUIPMENT* → *S2000-APA* → *Download*) in the section *Firmware*.

Run the update file *UpdateS2000_APA-En_Vx_xx.exe*.

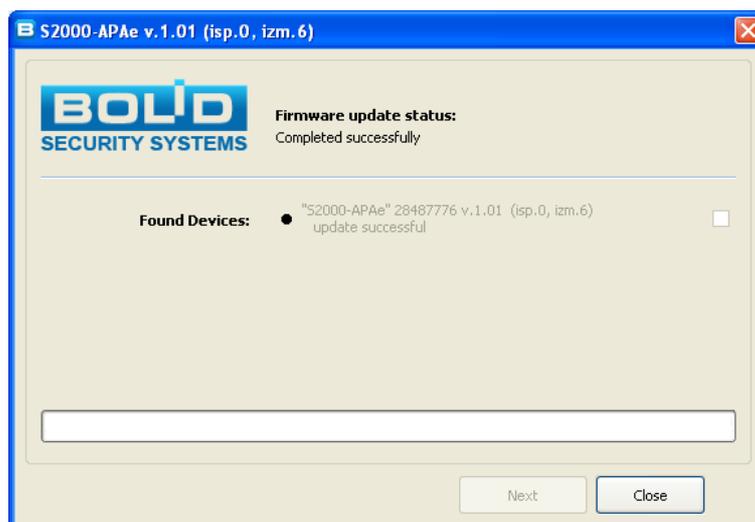


To cancel updating and quit the program, click *Close*.

To start updating, click *Next*.



Wait until updating is completed:



When updating is completed the programmer will proceed to the operating mode and turns on. To quit the program, click **Close**.

5 Troubleshooting

The table below shows common problems and ways for their repairing.

Problem	Possible Cause	Remedy
The programmer doesn't turn on	Low battery	Connect the programmer to the charger and recharge the batteries
An error while writing or reading the address of a device	Faulty programmed device or the device is not properly connected to the programmer (no contact)	Connect an operative addressable device (repair the contact)

6 Maintenance

When using the programmer it is necessary to monitor the level of battery charge and recharge the batteries in time.

Visit the Bolid site periodically to know whether a new version of programmer firmware has been published and update the firmware.

7 Storage

Programmers should be stored packed at an ambient temperature of 0 to 50°C.

Programmers should be stored on the shelves.

The distances between the walls or the floor of the storage room and packages with programmers should be at least 0.1 m.

The distances between the heating devices and packages with programmers should be at least 0.5 m.

There should be no vapors of aggressive substances and conductive dust in the room.

8 Transporting

Packed programmers can be transported by all kinds of transport in covered vehicles and in sealed aircraft compartments.

9 Manufacturer Data

The Bolid Company, Russia

Address: 4 Pionerskaya Str., Korolev 141070, Moscow Region, Russia

Tel./fax: +7 (495) 775-71-55 (multi-channel), +7 (495) 777-40-20, +7 (495) 516-93-72

E-mail: info@bolid.ru; Technical Support: support@bolid.ru; <http://bolid.ru>

10 Certificates

Production of Standalone Addressable Device Programmer is certified according to ГОСТ ISO 9001-2011 by a conformity certificate No.ПООС RU.ИК32.K00153.

Conformity Certificate EAЭС № RU Д-RU.ME61.B.00699 certifies that S2000-APA Standalone Addressable Device Programmer meets the requirements of Technical Reglament of Custom Union TR CU 020/2011.

11 Product Acceptance Certificate

Standalone Addressable Device Programmer with Serial No._____ is accepted in accordance with mandatory requirements of state standards and current technical documentation, qualified as proper for operation and packaged by CJSC NVP “Bolid”.