

Programming Procedure of Integrated Software of Control Station IRZ-500 with CSC controller IRZ500



1. Features

The control station controller CSC IRZ500 (hereinafter referred to as the controller) is a single block. The controller software is supplied as one firmware file. The firmware of the controller includes the special software unit - loader enabling to reprogram the controller under normal condition not opening the casing and not using the special programmer.

The control station (hereinafter referred to as the CS) may be programmed in two ways:

- *normal conditions - using USB-flash media (hereinafter referred to as the memory stick);*
- *using USB-flash media and Backdoor unit. This way is used when it is impossible to reprogram using the memory stick, for example, in case of power failure during the controller reprogramming.*

2. Required Equipment

2.1 To perform the programming under normal conditions availability of the memory stick and specially prepared firmware file in the directory IRZ_WARE located in the root directory of the memory stick is required.

2.2 To program under abnormal conditions the following equipment is required:

- Backdoor unit (the electrical circuit is given in the Appendix 1);
- the memory stick with the firmware file firmware.ubt which must be located in the memory stick root directory.

3. Preparation to Programming.

To program under normal conditions it is necessary to copy the directory IRZ_WARE with the firmware file to the root directory of the memory stick (if in the initial condition the firmware files were archived, then it is to unpack it preliminary).

4. Programming Procedure

ATTENTION!!!

Before updating the software of the control station it is recommended to read the event archive of the control station and to save the actual preset parameters to the file on the memory stick.

After updating the software of the control station it is necessary:

to check the preset parameters and if necessary to restore them out of the saved file.

4.1 Programming under normal conditions

4.1.1 To perform the preparation to the programming according to the clause 3 of this guideline.

4.1.2 Switch the CS on.

4.1.3 To input the memory stick with the firmware file to the USB receptacle on the front panel of the controller.

And the controller display will show the USB memory stick operation menu (see Figure 1).

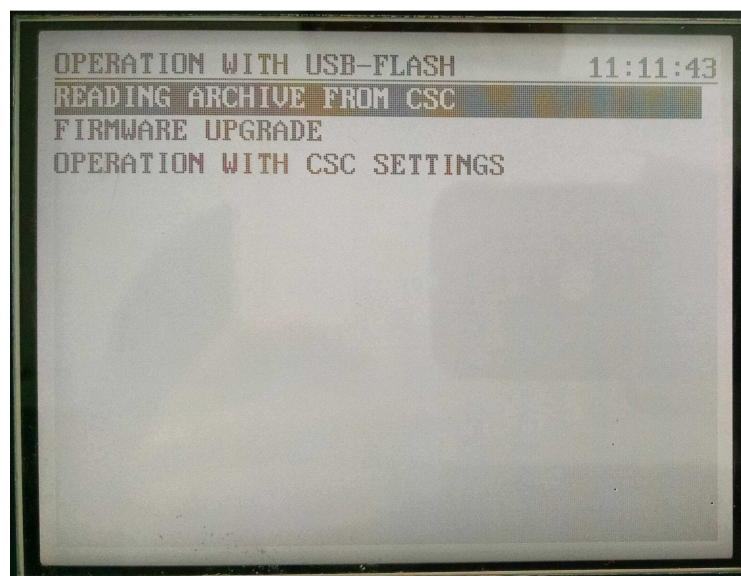


Figure 1.

If while inserting the memory stick the USB memory stick operation menu is not displayed, then the access may be obtained manually by selecting the «SERVICE MENU» option (see Figure 2).

To access the «SERVICE MENU» one must have the ADMINISTRATOR access level. To change the access level it is necessary to press the button F3 on the keyboard, then to select the option «PASSWORD SETTING» and in the edit window enter the administrator's password (by default the administrator's password is 514) and after that the ADMINISTRATOR access level will be set (see Figure 3).

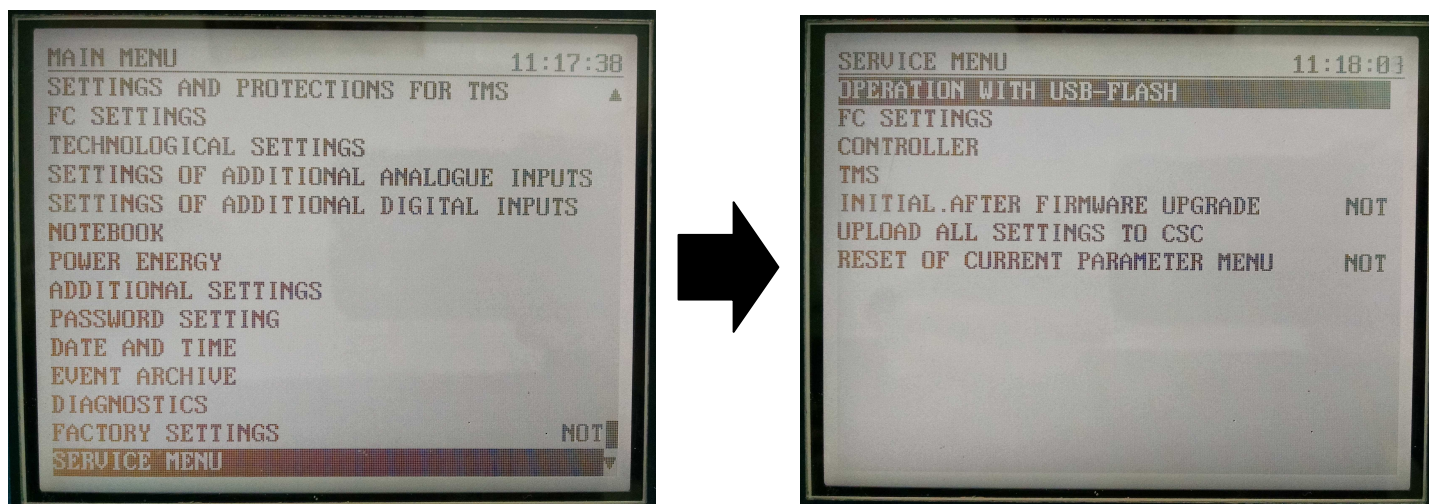


Figure 2.

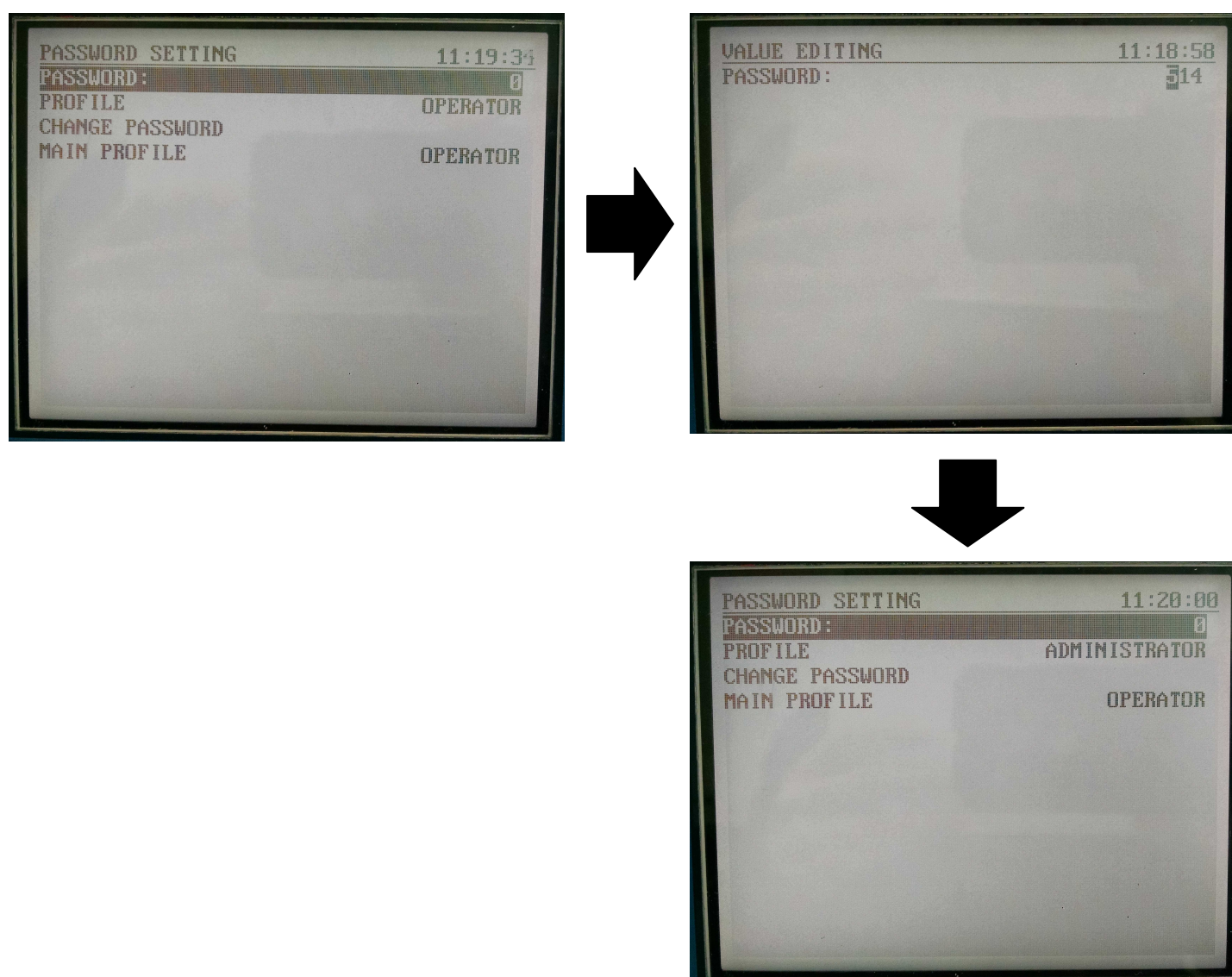


Figure 3.

4.1.4 To read the CS event archive select the option «READING ARCHIVE FROM CSC» (see Figure 1). And the process of copying the event archive file to the connected memory stick is started. All the archives from the CS are stored in the directory IRZ of the

memory stick. While reading the controller display shows the information on the process with date and time of the actual copied archive record. Upon completing the reading the message on process completion is displayed (see Figure 4).



Figure 4.

4.1.5 To save the actual preset parameters of the controller to the memory stick it is necessary to select the option «OPERATION WITH CSC SETTINGS» in the menu «»OPERATION WITH USB-FLASH» and then «READ SETTINGS FROM CSC» (see Figure 5). And for a short period of time (due to small volume of the preset parameter file) there will be displayed the message on copying the preset parameter file and then on completion of copying (see Figure 6).



Figure 5.

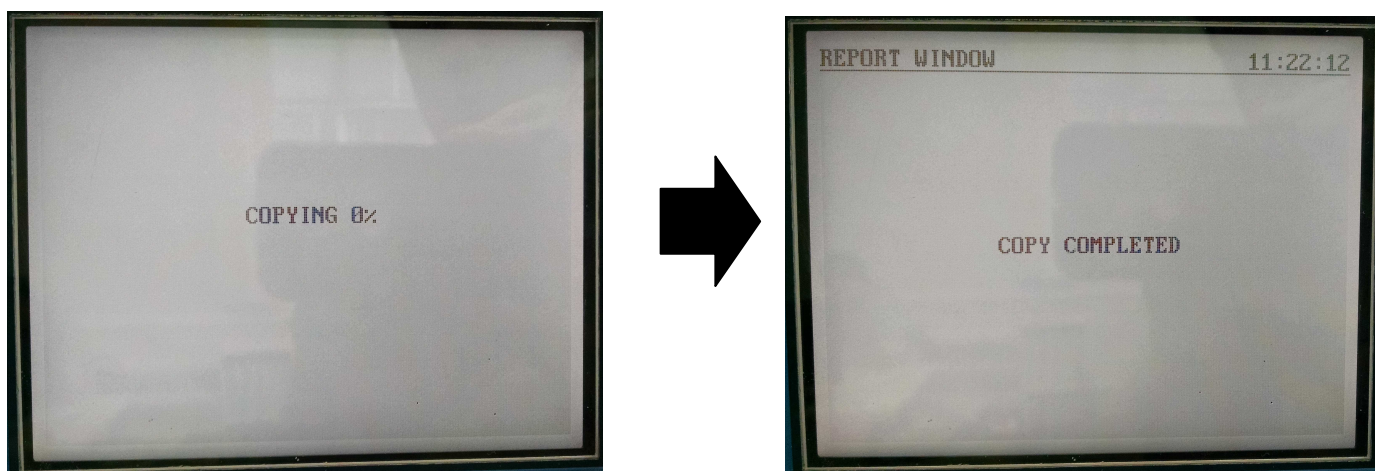


Figure 6.

The preset parameters of the memory stick are saved to the folder IRZ_SET. The name of the preset parameters includes the information on the CS installation site (number of field, pad and well) and the CS serial number.

4.1.6 To reprogram the controller select the option «FIRMWARE UPGRADE» in the menu «OPERATION WITH USB-FLASH» and in the appeared menu the option «FIRMWARE UPGRADE» again.

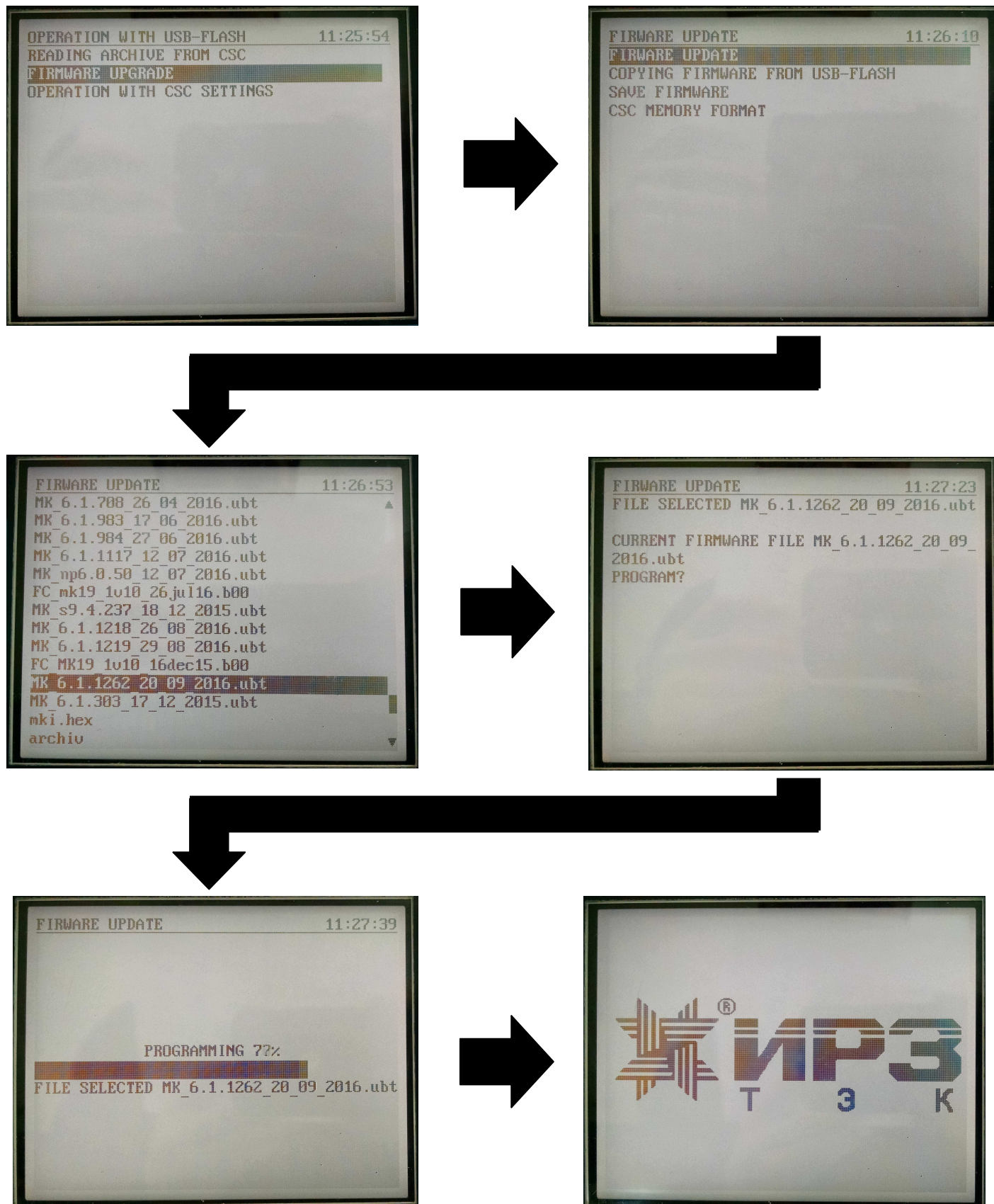


Figure 7.

The controller display will show the list of the files in the directory IRZ_WARE on the memory stick. It is necessary to select the required firmware file *.ubt and then the number of the actual firmware version of the controller, the number of the firmware new version and the prompt to confirm the programming start will be displayed. After confirming (press the button «ENTER» the reprogramming will start. If the button «ESC» is press, then you will be back to the menu «FIRMWARE UPGRADE». The programming process is shown on the controller display in the form of the progress line indicating the process percentage completion. Upon completing the programming the controller will be rebooted and will resume the operation (see Figure 7).

4.1.7 Upon completing the programming and rebooting the controller it is necessary to perform one of the following:

- if there were no additional instruction on programming, then it is necessary to check the actual preset parameters and if necessary restore them out of the file saved earlier on the memory stick;
- if there were additional instructions on initialization after firmware upgrading, then it is necessary to perform the initialization.

4.1.8 To record the preset parameters saved earlier on the memory stick to the controller it is necessary to go to the menu «OPERATION WITH USB-FLASH» and to select «OPERATION WITH CSC SETTINGS», then in the appeared menu to select the option «SAVE THE SETTINGS TO CSC». After that the display will show the list of the files contained in the directory IRZ_SET on the memory stick (see Figure 8).

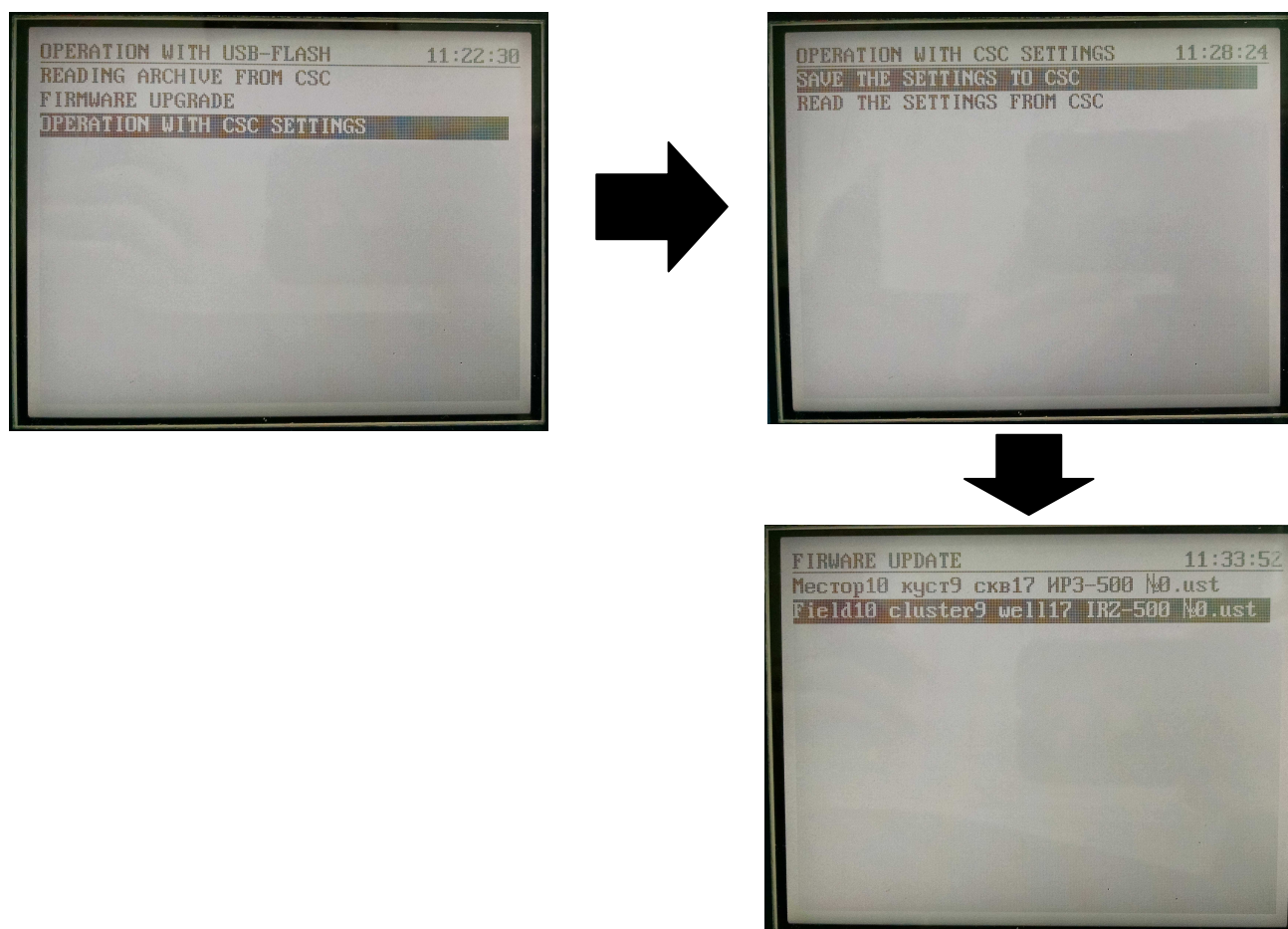


Figure 8.

It is necessary to select the required file of the preset parameters and then the process of copying the preset parameters from the memory stick to the controller. The copying is very fast so the information on the process status is not displayed. Upon completing the copying you will be returned to the menu «OPERATION WITH CSC SETTINGS».

4.1.9 To perform the initialization after programming of the controller it is necessary to go to the menu «SERVICE MENU», to select the option «INITIAL. AFTER FIRMWARE UPGRADE» and to confirm the start of the initialization process (see Figure 9).

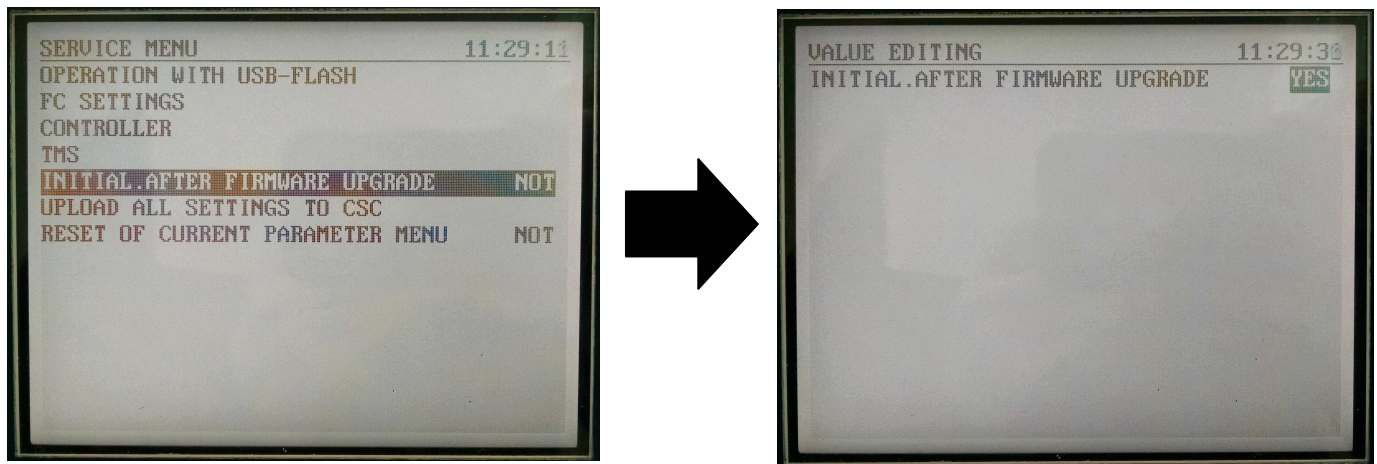


Figure 9

ATTENTION!!! While initializing all the internal meters of the controller are zeroed and the non-volatile memory is cleared. The event archive is removed and all the preset parameters are reset to the default ones.

To avoid losing of the archive data and to accelerate the procedure of restoring the preset parameters, while preparing to the programming it is necessary to read the event archive of the controller and to save the actual preset parameters to the file on the memory stick

4.1.10 After executing the initialization command it is necessary to go to the menu «SERVICE MENU» and to select the option «ULOAD ALL SETTINGS TO CSC» (the memory stick with the preset parameter file saved earlier must be connected to the USB controller receptacle). Then the list of the files of the directory

IRZ_SET on the memory stick will be shown on the controller display (see Figure 10). It is necessary to select the required file and to load the preset parameters to CSC.



Figure 10.

4.2 Programming in “after failure” mode

4.2.1 It is necessary to apply the programming in this mode if impossible to program according to the procedure set in the cl. 4.1 of this guideline. This necessity may be caused by any failure (for example, power failure) during the normal programming. And after eliminating the failure

the program of the controller is not started (exteriorly it is an empty controller display) and the controller menu is unavailable, and it is impossible to program under normal conditions, but the special program loader of the controller keeps on operating and the programming may be performed using it.

4.2.2 For programming in the “after failure” mode it is necessary to copy the special firmware file firmware.ubt» to the root directory of the memory stick (exactly to the root directory not to the directory).

4.2.3 Connect the Backdoor unit (see Appendix 1) to the Modem connector of the controller (see Figure 11).

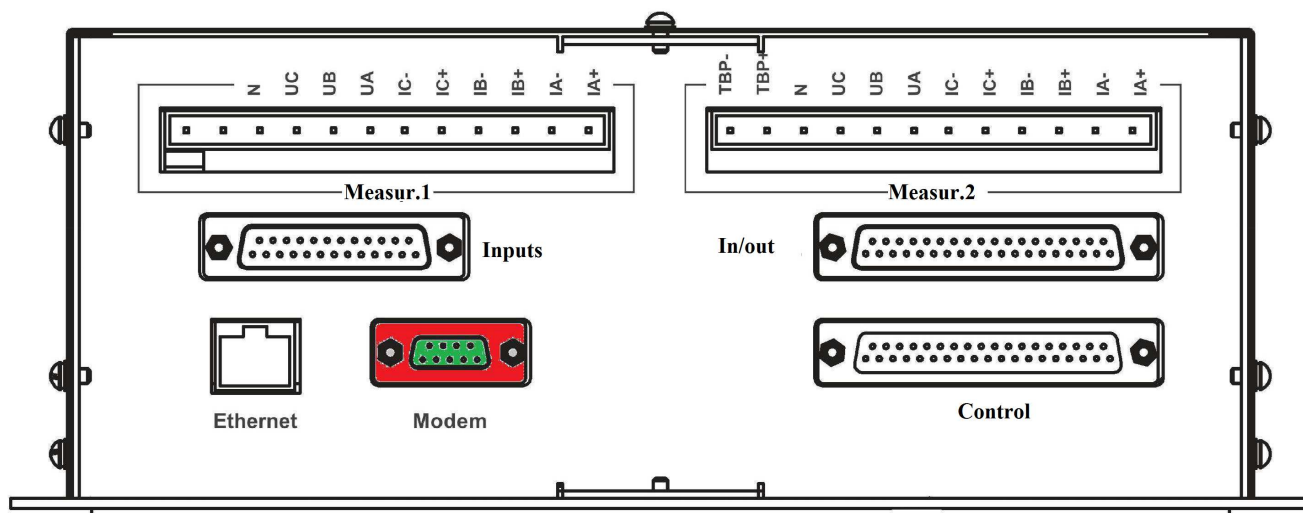


Figure 11.

4.2.4 Input the memory stick with the firmware file to the USB receptacle on the front panel of the controller.

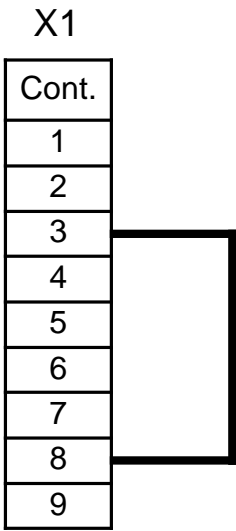
4.2.5 Switch the CS on.

4.2.6 Remove the Backdoor unit from the Modem connector of the controller.

4.2.7 When powering on with the connected Backdoor unit, the controller shifts to the loader mode, search the file firmware.ubt on the memory stick and launches the programming automatically.

4.2.8 Upon completion of programming after starting the program of the controller it is necessary to restore the earlier saved preset parameters (see cl.4.1.8).

Electrical Circuit of the Backdoor Unit



X1– Receptacle DB9 with cover