

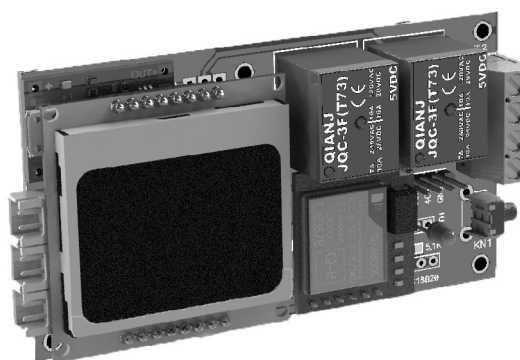
*GSM REMOTE CONTROLLER
WITH OBJECT SECURITY FUNCTION
AND CONTROL OF LEAKAGE OF LIQUID.*

MS800-T2

IS A REFINED VERSION OF MS800-T

MANUAL

This guide has been translated using Google's online translator, please ignore grammatical errors.



2020

Т.контр				Ver. 2.1	MS800-T2	A4
				МАСКА:	МАСШТАБ:1:5	ЛИСТ 1 ИЗ 13

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MS800-T2

GSM REMOTE CONTROLLER WITH FUNCTION OF
PROTECTION OF THE OBJECT AND CONTROL OF LIQUID LEAKS.

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4. PREPARATION FOR WORK

1. The phone number to which the call will be made is stored in advance in the memory of the SIM card under the first number, the first in the list in the phone book.
2. Insert the SIM card of Micro-SIM format into the tray of the GSM module until it clicks; the reverse removal of the SIM card is carried out by pressing it again.
3. Connect power to the controller: USB cable to the controller (without a connected battery, the controller may freeze at boot and not boot, in which case it is necessary to connect the battery to the appropriate contact pads).
4. To view the system information, hold down the KN1 button and then apply power by connecting the USB cable. In this mode, you can see, for example, the ADC value on the water sensor connector. If the sensor is not connected to the connector and does not come into contact with water, then the value will be about 20 units, if the sensor was connected and lowered into water, then the value will be much lower. The ADC value depends on the degree of water pollution, type of liquid, etc. This mode is useful for checking the sensor's performance, see Figure 9.
5. After turning on the power, wait for the device to boot, the entire initialization and boot process will be reflected on the LCD indicator.
6. The boot process until the device is ready takes about 25-30 seconds, after which the indicator will display the current device parameters.
7. In some cases, after replacing a SIM card with another, after switching on the controller can process previously received SMS messages for some time. At the same time, asterisks will "run" in the lower right part of the screen - meaning the processing of SMS commands and initialization.
8. After the device is loaded and the operator's name appears on the screen, for further work with the module, it is necessary to send an SMS message from another phone containing the text "save number" to the phone number of the SIM card installed in the controller, upon receiving this message the controller will save the phone number from which the SMS was received.
9. When a message is received, the controller will briefly display the phone number and a message stating that the number is stored in the memory. Only one number can be stored in the device's memory - all notifications will be sent to this number, however, control can be performed from any number.
10. The controller has protection against freezing during operation, i.e. Watchdog function. In case of power failure or controller reboot, the device will automatically enter the security mode, if it was enabled earlier.
11. It is not recommended to install the controller near sources of strong electromagnetic interference, in which case freezes or frequent reboots may occur.
12. The memory for the relay outputs in the event of a controller reboot is not embedded, i.e. if some channels were turned on but the controller rebooted (due to interference or power failures), then the outputs must be turned on again.

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5. CONTROL COMMAND LIST

The controller is controlled by SMS messages, the list of available commands is shown in the table.

Table 1.

SMS TEXT	EXECUTED TEAM	NOTE
1vkl	Enable OUTPUT1	Relay
1vkl1	Turn on OUTPUT1 for 1 sec. and off	Relay
1vkl60	Switch on OUTPUT1 for 60 sec. and off	Relay
1otkl	Disable OUTPUT1	Relay
2vkl	Enable OUTPUT2	Relay
2vkl1	Turn on OUTPUT2 for 1 sec. and off	Relay
2otkl	Disable OUTPUT2	Relay
12vkl	Simultaneously activates OUT 1 and OUT 2	Relay
3vkl	Switch on 3 channel	Expansion connector
3vkl1	Turn on channel 3 for 1 sec and off.	Expansion connector
3otkl	Turn off channel 3	Expansion connector
4vkl	Switch on 4 channel	Expansion connector
4vkl1	Turn on channel 4 for 1 sec and off.	Expansion connector
4otkl	Turn off channel 4	Expansion connector
otkl	Turn off all channels	Disables all 4 channels
secon	Allow notifications when sensor triggering	The "!" Icon will disappear.
secoff	Disable alerts when triggered sensors	The "!" Icon will appear.
call	The controller will call the number the phone previously saved in the memory devices	
savnumber	The controller stores the number in memory phone from which this SMS was received	Stored in memory only 1 number
info	The controller will send an SMS message about device status	Checked with Beeline, MTC, Megafon
batt	Sends the state of the battery to SMS	
reset	Rebooting the controller with disconnecting loads	Depends on firmware

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Signal: 7;; t.+28C
RL1: OFF; RL2: OFF
PIR: 0-; KN: 0+
Send SMS: NO
Time: 01:33

Information about the state of the controller can be obtained by sending SMS the “info” message, the content of the response messages may differ in different versions and firmware. With a positive balance on the account the controller will send a response SMS with the following approximate content (see Fig. 6).

"MegaFon" T
+28°C 5.000
PIR=0!
KN2=0!
RL ON
OUT OFF

Return information messages and calls are sent only to the phone number saved by the user.

PIR: 0+
KN2: 0+

If the prohibition of sending SMS messages is set when an alarm is triggered, but at the same time it was triggered any of the sensors, then on the screen, opposite the channel where the sensor was triggered, the symbol “*” will appear - an asterisk, meaning the triggered sensor. If after sensor triggering request the state of the device with the "info" message, then an SMS will be sent at the end of the line with the name of the sensors “+” sign will be displayed, see fig. 8. If there was no actuation, “-” icon will be displayed.

It is not advisable to connect both sensors (PIR and mechanical), for example, to one door, it is recommended. It is possible to connect a mechanical sensor to the door, and turn the PIR sensor from the door so that it looks back or even, install in another room, behind a screen. Otherwise, the controller may not be able to process both commands at the same time and there is a possibility of missing the event.



System INFO
CPU: ATmega32
GSM: SIM800L
PWR: 5.00V
Site: at13.ru

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10. PROGRAMMING THE CONTROLLER

The software, in other words, the firmware of the module, if desired, can be changed, for the firmware of the module you need a USBASP programmer or similar for AVR ATMEL. A photo of the assembled programmer is shown in Fig. 12. The cost of such a programmer is about \$ 2 on Aliexpress.com. To work with the programmer, you need to download the drivers as well as the program for programming itself, all drivers and programs are on our website, in the technical section. The programmer is connected to the 6-pin connector on the controller board. On the connector of the adapter included in the box with the programmer, the contacts are signed.

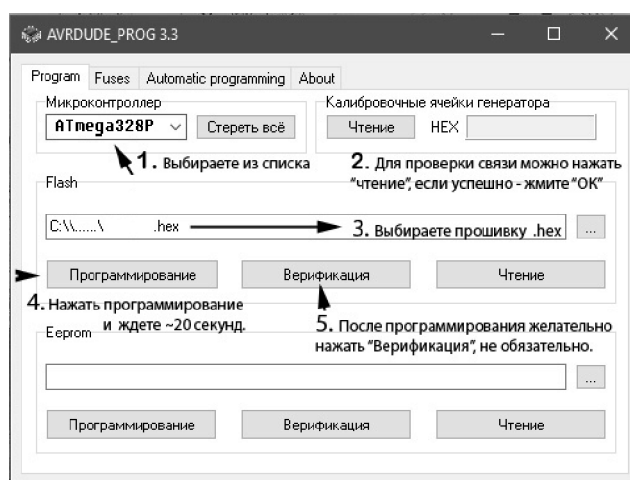


Pic. 12

The external view of the programmer is shown in Pic. 12.

Working with the USBASP_AVRDUDE program - a program for software is shown in Fig. 13. Connect the programmer to the controller rum is possible both before opening the software and after.

1. First you need to install the drivers for the programmer, the program and the sewing. Check that the programmer defined in device manager on a PC (a device like libusb).
2. Connect the programmer (6 pins) to the controller, the connector on the board is signed as ISP.
3. Select the model of the installed microprocessor (under the LCD screen).
4. Check communication with the controller, press read, item 3 in Pic. 13



Picture. 13 Programming window

5. Specify the path to the firmware that you downloaded earlier, the file extension must be .HEX.
6. Press program, programming takes place within ~ 20 sec. In case of successful programming, a message will appear, you can disconnect the programmer and check controller operation.
7. All programming operations are carried out only in the Programming tab, fuses are programmed only if a prescription for the downloaded firmware is indicated. Fuses only adjust the operating mode of the microcontroller: from an external or internal generator, incorrect installation of fuses can block the controller.
8. If the programmer does not see the module and displays a "controller not found" error, check the connection pinout. If the programming is in progress, but at the end it displays a message with a "verification" error - connect an external 12 volt power supply to the module, if the power was connected, then the reason is a poor connection between the adapter and the connector.
9. If you have any additional questions, please visit the technical forum of the manufacturer's website.

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