



Gate controller GC1

User manual

Gate controller GC1

Gate controller GC1 is designed for remote control of automatics of gate or automatics of other electrical engineering devices. Gate controller GC1 is being controlled by the mobile phone via GSM network. Control commands are being formed by the short call out of the mobile phone of user. Type of OUT contact is dry relay contact.

Application

Gate controller GC1 is applied for:

- remote control of electrical engineering devices via GSM;
- remote control of security system via GSM;

Package of gate controller GC1

- Gate controller GC1 1 piece;
- Connector male 7 poles 1 piece;
- GSM antenna 1 piece;
- Velcro tape 10 cm;
- Short user manual 1 piece;
- CD with software and manual 1 piece.

Attention:

Gate controller GC1 is operated well when is installed SIM card of chosen GSM provider and it is connected GSM antenna!

Main features and description of operation

Numbers of mobile phones of the users are stored in internal memory of the controller. List of numbers of mobile phones can be created, added, changed using firmware of setting exploitation parameters or sending established form of SMS out of mobile phone of master user.

Control command is being formed by short call of user's mobile phone using phone number of SMS card installed in to gate controller GC1. Gate controller receives call via GSM voice channel. Performing the call from the user's phone, its number is defined and compared with another one stored at the memory; if such number is indicated in the list, state of input changes for a fixed period of time. Electrical engineering device is connected to GC1 performs established functions: it opens/closes the gates, switches on/off boiler, pump, illumination, arms/disarms security system, etc. Controller transfers control command only.

At the moment of dialing, gate controller GC1 rejects call automatically. Subscriber's number is being recognized and if find in a list, control is enabled.

Controller GC1 has one input witch is designed for transferring messages in the form of SMS to mobile phone of master user

Operation of controller is being indicated by the 4 LED indicators.

Specifications

1. GSM modem SIMCOM300DZ (operating frequencies are 900 MHz and 1800 MHz) is mounted on printed circuit board of gate controller GC1.

2. Up to 200 users' phone numbers may be stored at the gate controller's memory.

3. Controller GC1 has USB port witch is necessary for setting of exploitation parameters.

4. Output of gate controller is dry relay contact (commutating up to 30V and current up to 1A);

5. Controller GC1 has one input (Zone) witch is necessary for transferring messages in the form of SMS. Input (Zone) type NC, NO or EOL=2,2 kΩ is being selected by the setting of exploitation parameters.

6. Controller GC1 is supplied with 12 ÷ 24 V direct or alternating voltage. Permissible range of power supply voltage is from 10 to 30 V. The current in transmission mode reaches 0,4 A, in reception mode up to 0,12 A.

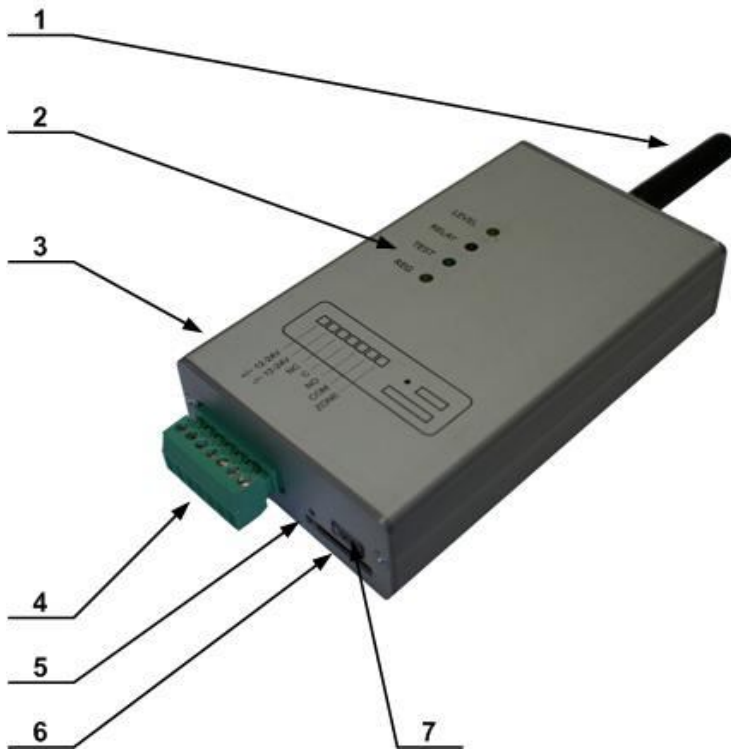
7. Overall dimensions: 121 x 65 x 25 mm.

8. Operating temperature range of the modem is from -20°C to +55°C.

Structure

Gate controller GC1 is comprised of printed circuit board which is placed into metal housing. GSM modem, microprocessor with software, USB port, holder of SMS card, connectors, LED are being soldered to printed circuit board.

GSM antenna is being connected to antenna connector. SIM card of chosen GSM provider is being set in to SIM card holder.

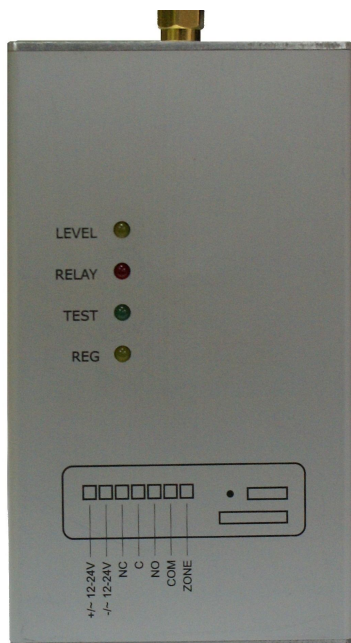


Main components of the gate controller GC1:

- 1 GSM antenna;
- 2 LED;
- 3 Body;
- 4 External connector;
- 5 RESET button;
- 6 SIM card holder;
- 7 USB port;

LEDs and external connectors

Positions of LEDs are shown below. Meaning of LEDs are written in 1 table. Description of external connectors is shown in 2 table.



LEDs:

LEVEL – shows level of GSM network;

RELAY – shows operation of relay;

TEST – shows power supply and operating of device;

REG – shows registration of device to GSM network;

LEDs operation

1 table

LED	State	Meaning
LEVEL	On	GSM communication is failed (hardware)
	Off	Power supply failure or disconnection of modem
	Is flashing	Controller is registered to GSM network (hardware)
RELAY	On	Relay operated
TEST	Off	Power supply is disconnected
	Is flashing	Power supply is connected, the processor performs its functions
REG	On	Modem is registered to GSM network (software)
	Off	Modem failed to register to GSM network (software)
	Is flashing	Modem is registering to GSM network (software)

External connector contacts

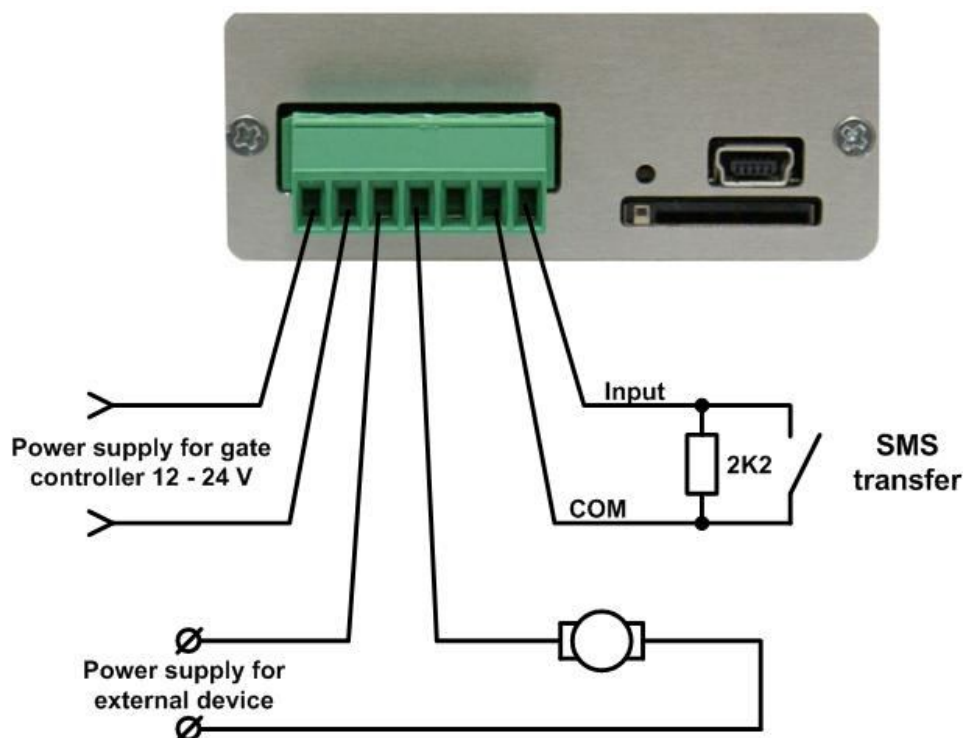
2 table

External connector	Description
+/~12-24V	Power supply of gate controller GC1
-/~12-24V	Power supply of gate controller GC1
NC	Output NC contact of dry relay
C	Output C contact of dry relay
NO	Output NO contact of dry relay
COM	General wire (input)
ZONE	Input contact for transferring messages in the form of SMS

Preparation to operate

Schedule:

1. Project of preparation of operation system is designed where are solved problems of both control and power supply. List of phone numbers of subscribers is prepared;
2. Module is being programmed by using functions which are mentioned in a project. Programming of controller may be done by using mobile phone of master user (sending appropriate form of SMS) or by using PC via USB port (programming of controller is shown below);
3. SIM card of chosen GSM provider must be PIN code request switched off.
4. Put SIM card in to the SIM card holder of controller and fixate it.
5. Mount operation equipment and controller. Connect controller with other devices



6. Connect GSM antenna;
7. Connect power supply. Test operation of equipment. Test remote control of mounted equipment.

Attention: When controller is installed, check level of GSM network. Level is being shown by the LED "LEVEL". If level is low, connect outdoor GSM antenna.

Programming of the controller via USB port

Exploitation parameters are being set using software Configurator via USB port.

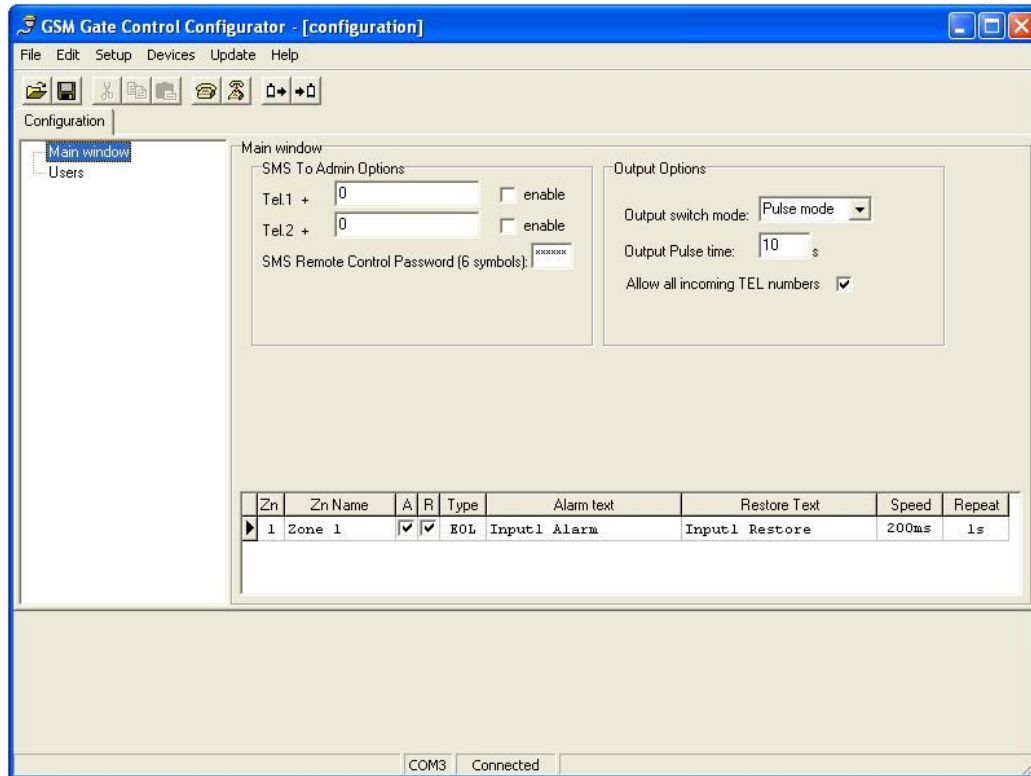
Phone numbers of users are stored in internal memory of controller at programming. In mobile phones of users must be switched-on number identification function.

Connect USB port of PC and USB port of controller by using USB programming cable. LED indicator "TEST" must be flashted. If LED indicator "TEST" is not flashing, connect external power supply (it is necessary when is not sufficient power supply from USB port). Run software Configurator.

Choose column *Setup/Serial Port*. Specify number of COM port.



Choose programmable device *Devices/GSM Gate Control*.

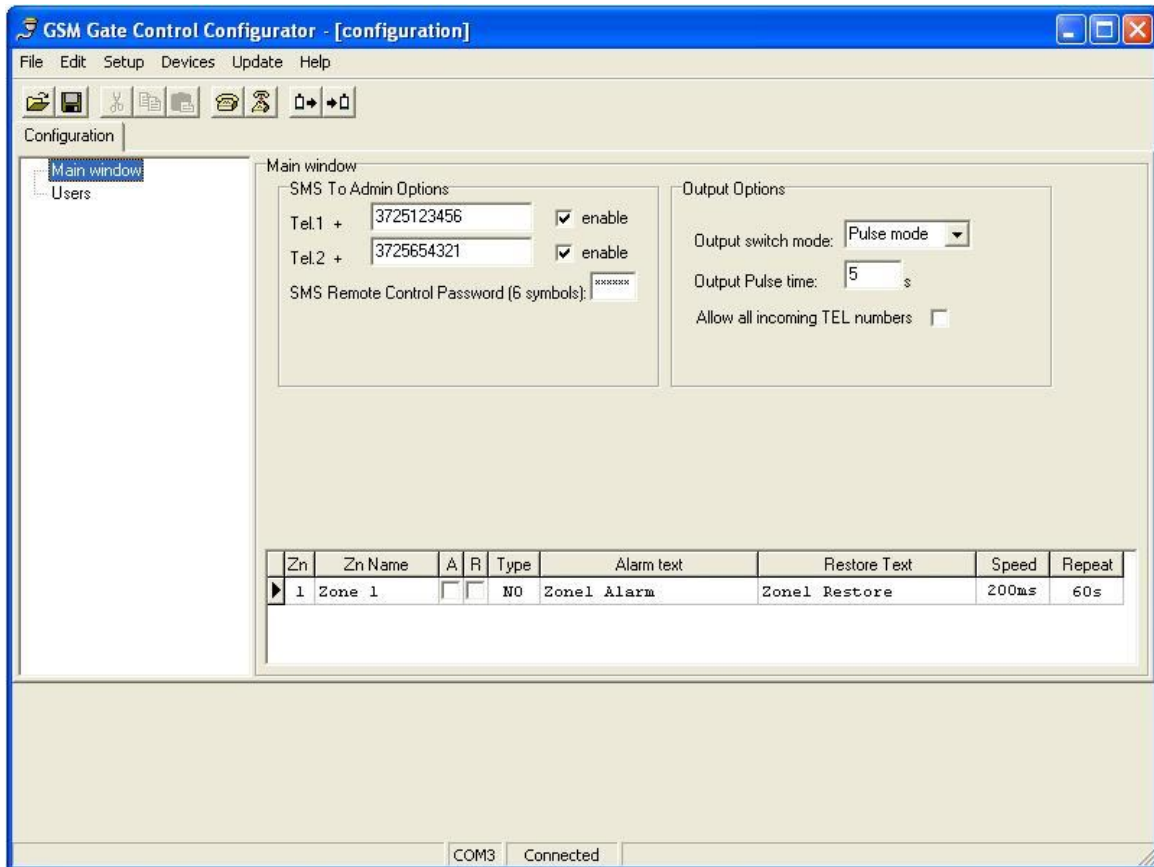


It is recommended read exploitation parameters out of memory of device. For this case click *File/Read device* or push additional button. If reading was successfully, request window is shown as below:

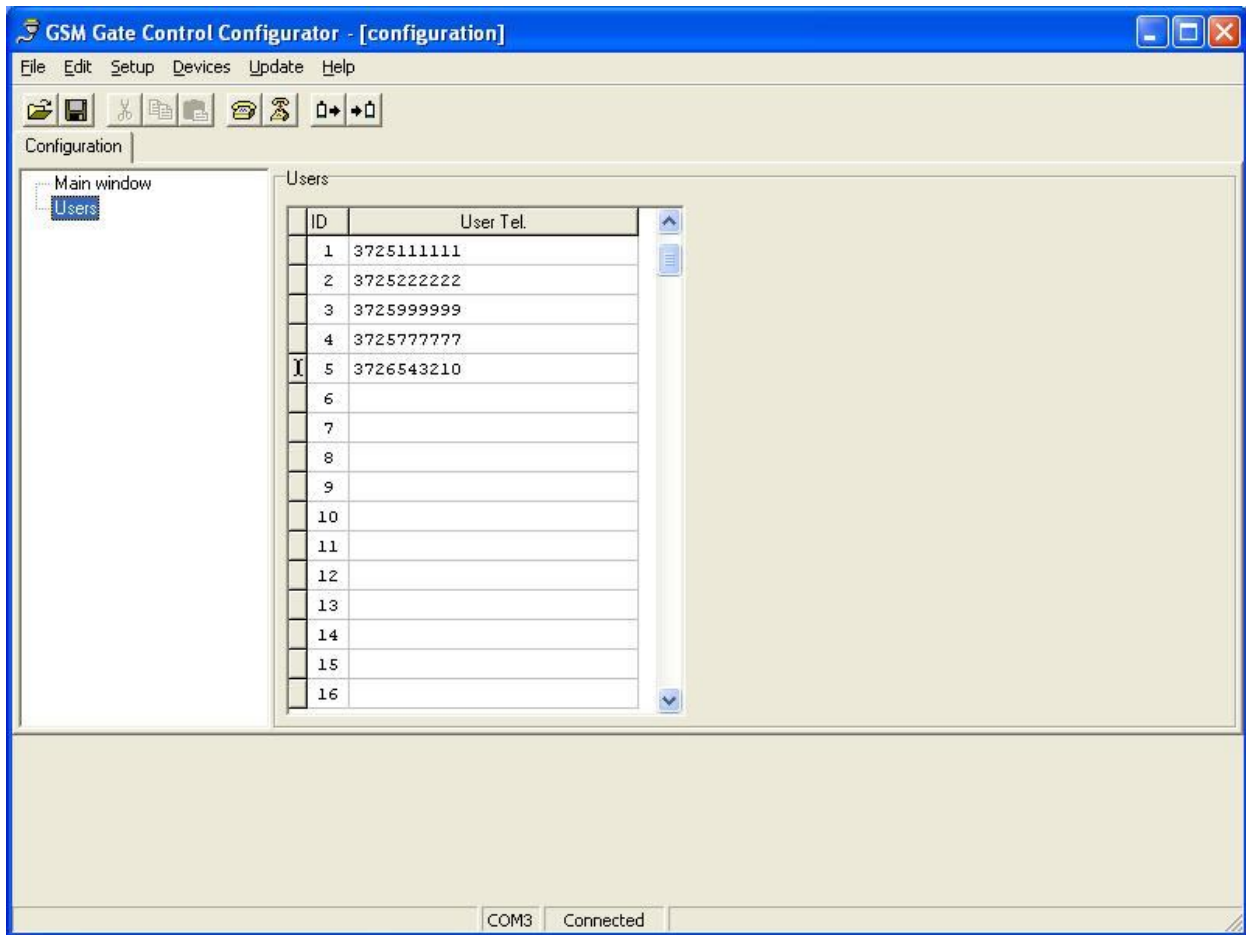


In *Main window*:

- Specify phone numbers of master user;
- Activate phone numbers of master user (check “enable”);
- Specify password (default is 123456);
- Specify operation mode of relay (pulse or level);
- Specify duration of pulse mode of relay;
- Specify possibility to control controller all incoming phone numbers;
- Activate input (Zone) and specify parameters;



In request window *Users* specify phone numbers of users.



Writing of parameters is doable by using *File/Write device* or by clicking additional button in main window. If programming was successfully is shown window as below:



You can save established parameters by using *File/ Save as*. It is possible to use at programming other modules.

Programming of controller by using SMS

The controller may be programmed in remote mode by using appropriate form of SMS out of mobile phone of master user. Structure of SMS must be:

PSW123456↔03↔3725654321#

where: PSW
123456
↔
03
3725654321
#

start command;
password of 6 numbers (default is 123456);
Space (it means space in the text of SMS);
command code according to the 3 table;
international code (without "+" sign, up to 16 numbers);
end symbol (it is necessary to specify this sign in the text of SMS);

Commands are specified in 3 table may be used at programming of controller in the form of SMS

3 table

Start command	Master code	Command code	Default settings	Samples	Descriptions
PSW	123456	01	-		Erease all phone numbers
		02	-	111111#	Erease selected phone number out of memory
		03	-	222222#	Write new phone number
		97	-	5	Request for necessary information: 5 – transmit information about state of GSM modem
		98	123456	654321	Modify old master code to new (entered password of 6 numbers)