

MobilGate - 32c

Gate and barrier control GSM module with
2 inputs and 2 outputs for 32 phone numbers

MobilGate-32c is an industrial GSM module developed for remotely controlling doors, garage doors and barriers with 2 opto-isolated inputs and 4 high current relay outputs. The 2 relay outputs allow the configuration of 32 phone numbers to control the gates remotely with a free call based on caller ID recognition. The 2 relay outputs can be triggered by SMS orders received from previously configured phone numbers. Relays operated with a free call can be triggered for pre-determined duration, and the relays operated with SMSs can be turned on and off permanently. The recognition of maximum 32 phone numbers allows to set up entitlements for 32 users. The general inputs can be used arbitrarily for transmitting gate error signals, burglary alarm center's signals or panic signals.

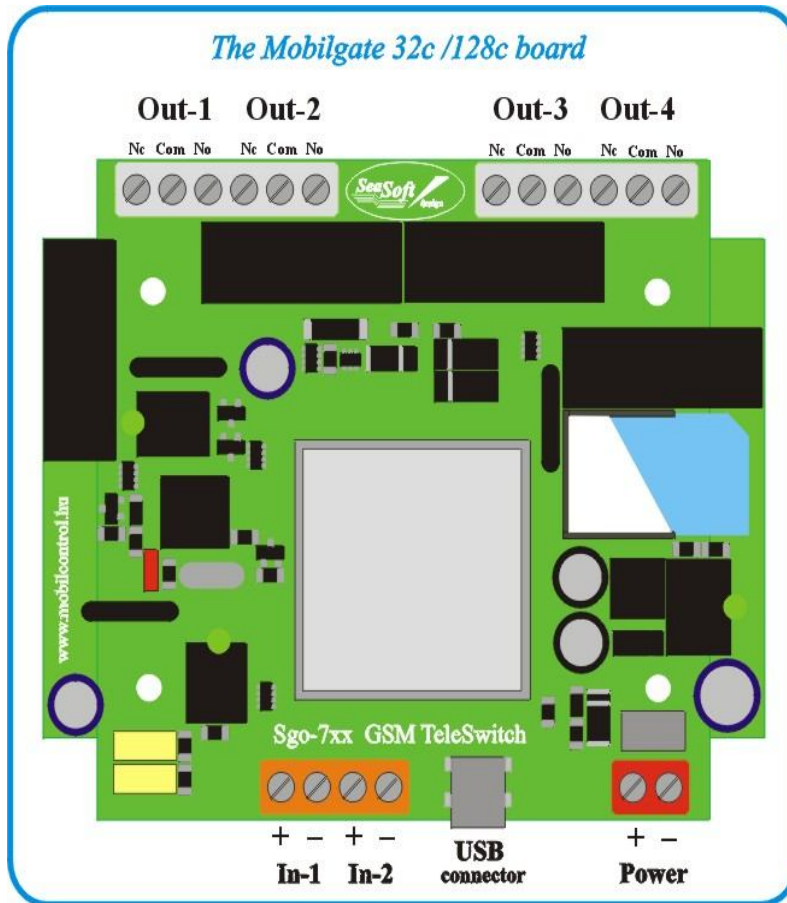
Users are informed about input changes via SMS with pre-configured content. Certain electronic devices, such as heaters, air conditioners, light devices etc. can be turned on and off with relay outputs operated via SMSs, thus the function of gate opener can be broadened with many supplements. Its power voltage is 10-30V, which can be supplied by a power adapter. Its setup can be configured with our free downloader software via USB port, or by sending several different configuration SMS remotely. Each input and output can be labeled with a max. 16-character long name.



The configuration of the SMS relay output commands which trigger the relays to be on or off also can be set. The module also has a 4-character passcode in order to prevent any unauthorized personnel to disable or reconfigure the module. The GSM gate opener has internal timers, thus the output relays are triggered for a configured time when calls occur, which can be maximum of 9999 seconds (about 3 hours). After the given time expires, the relays turn off automatically and return to their original state.

1. Operation of MobilGate-32c

The GSM gate opener is equipped with a carrier-independent industrial GSM module; thus it is ready for SMS-based communication with a prepaid or subscription SIM card without PIN code. The data which is necessary for operation, for instance SMS number of the service provider, users' numbers, output and input names etc. can be configured by downloading them into the device or sending an SMS with a certain content. In the case there is any change of the inputs, the module name, module number, the appropriate input name and status are also sent via SMS. The detailed messages provide possibility to be able to easily identify the appropriate device in case of having more than one. Input and output status with every parameter can be queried by sending a corresponding SMS. Configuration SMSs are confirmed after reception, and an incorrect configuration SMS will result in an error message. The module does not discard the previously set configuration, including input names, output status, phone numbers, etc. after turning the device off. After power-up, although timer parameters are deleted, but the module continues its operation where



it stopped. The module checks the GSM modem regularly and turns it off in case of network or signal problems, then turns it back, connects to the network again, restoring itself into operating state.

The *Mobilgate-32c* GSM gate control module can be purchased in a package with downloader software and aerial. The panel version is called *MobilGate-32*, its enclosure version is called *MobilGate-32d* and the version that can be installed to a C-rail (DIN-rail) with opto-isolated inputs and with 4 pcs of high current relays is called *MobilGate-32c*.

It can be equipped either with smaller, rectangular dual-band stick antenna or with magnetic, screwable external antenna equipped with RG174 SMA-connector.

2. LED diode signals

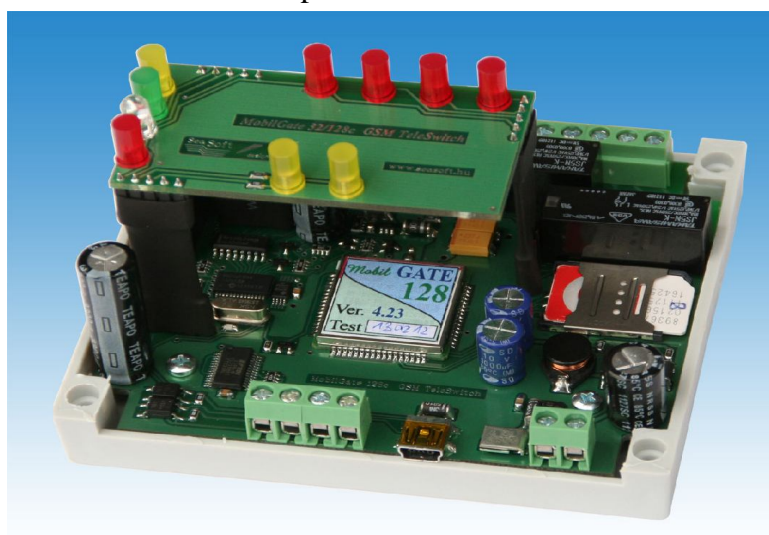
LED diodes can be found on the side of the panel in order to indicate possible error messages in the following order:

| | |
|-----------------------------|--|
| Red "On" LED | |
| Continuously: | The interface is operational. It has to remain lit after turning it on. |
| White "GSM" LED | |
| Blinking | GSM module operational status. It has to light up after around 25 seconds then flash according to its functioning. Its flashing indicated that the device is connected to the network. |
| Green "Heartbit" LED | |
| Blinking | It is the life signal of the device. When the device is turned on, it does not blink until the device is connected to the network. It starts blinking after the device is connected to network. The number of flashes (0 to 10) indicates the signal strength. 0 flash means the device is not connected to network, 2 or 3 flashes mean low-signal and it occurs when GSM connection is not secure. 4 or more flashes mean sufficient signal strength for operation. In the case the green LED doesn't light up after 1 minute, the modem could not connect to the network at all. The aerial and the SIM card have to be checked, e.g. the SIM card is protected with SIM PIN. |

| | |
|----------------------------|--|
| Yellow "Busy" LED | |
| Continuously | It is on during device communication. |
| Blue "Inputs" LED | |
| Inputs | Status of inputs, indicates whether the the inputs are active. |
| White "Outputs" LED | |
| White | Status of outputs, indicates whether the relays are triggered. |

3. Connection and installation of the MobilGate-32c

The connection points of the interface can be found in the figure below:



Up: High current relay outputs
 Down: USB connectors
 Input connectors
 Power supply connector

The power connection needs 10-30V DC supply voltage. The inputs of the *MobilGate-32* gate controller can be triggered by connecting it a 5-30Vdc voltage on the opto isolated inputs. The numbering of the module inputs is marked on top of enclosure. It has high current No-Com-Nc type relay outputs and their maximalum load is 230V and 8A. The No, Com

and Nc points of the relays are wired out. The GSM modem has a screwed SMA aerial connector and a small-sized pole aerial or an aerial with a coax cable or similar plug can also be installed to it.

The power input of the GSM gate opener module is protected against reverse polarity and it is equipped with 500mA multifuse. The input voltage on the general purpose inputs ranges is from 5V ... 30Vdc.

4. Configuring MobilGate-32c using a computer:

MobilGate-32c can be configured with computer or notebook via USB-port by using our free software. A SIM card that is able to send SMS and it is not protected with PIN code has to be isrequired for Windows XP or any newer operation system. After driver installation, the next step is inserted into the module. When the device is connected to the USB-port, the module driver has to be



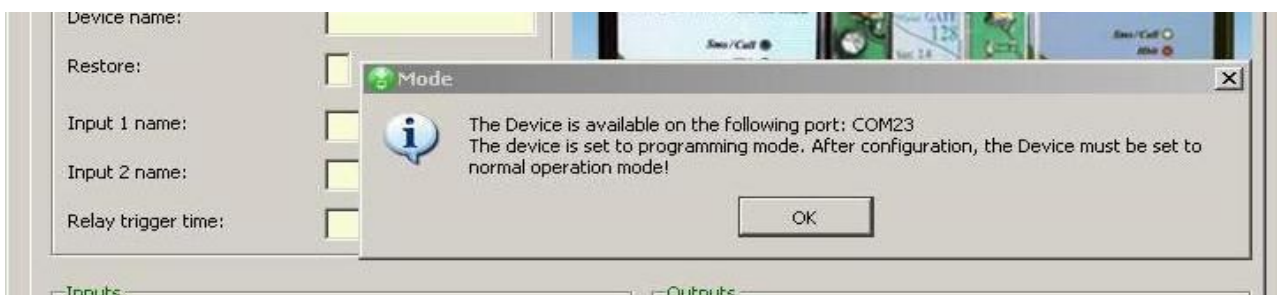
installed from the CD or it can be downloaded from www.seasoft.hu. Installing the gate controller



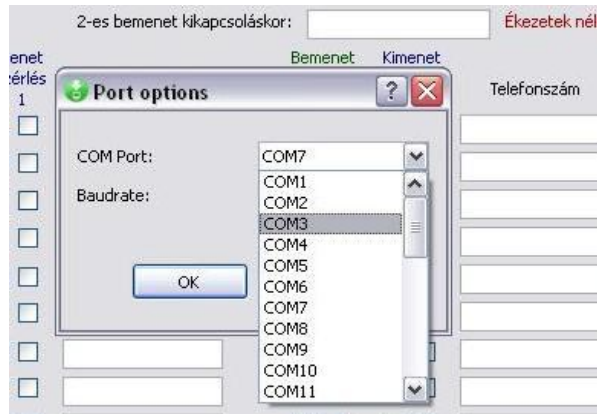
module driver the serial port configuration. It starts by clicking the **Set Port** button. Windows registers the device and assigns it to a COM-xx port. The software indicates module version and enters configuration mode. The user can configure *MobilGate-32* controller freely in configuration mode.

If the software cannot find the port of the device indicated on the picture, it has to be identified manually in Windows by the followings:

-> Control Panel -> System -> Hardware -> Devices -> Ports



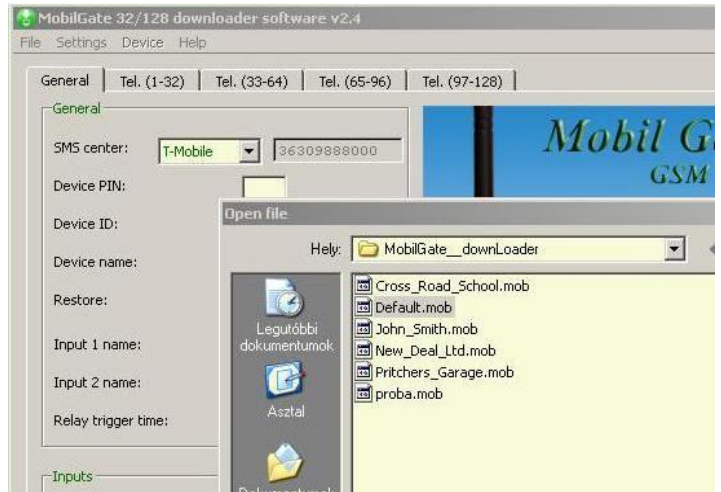
The GSM device has to be identified by which serial port from **Com1...Com99** it is connected to. Manual configuration is necessary when previously a lot of USB devices had been connected or virtual serial ports were



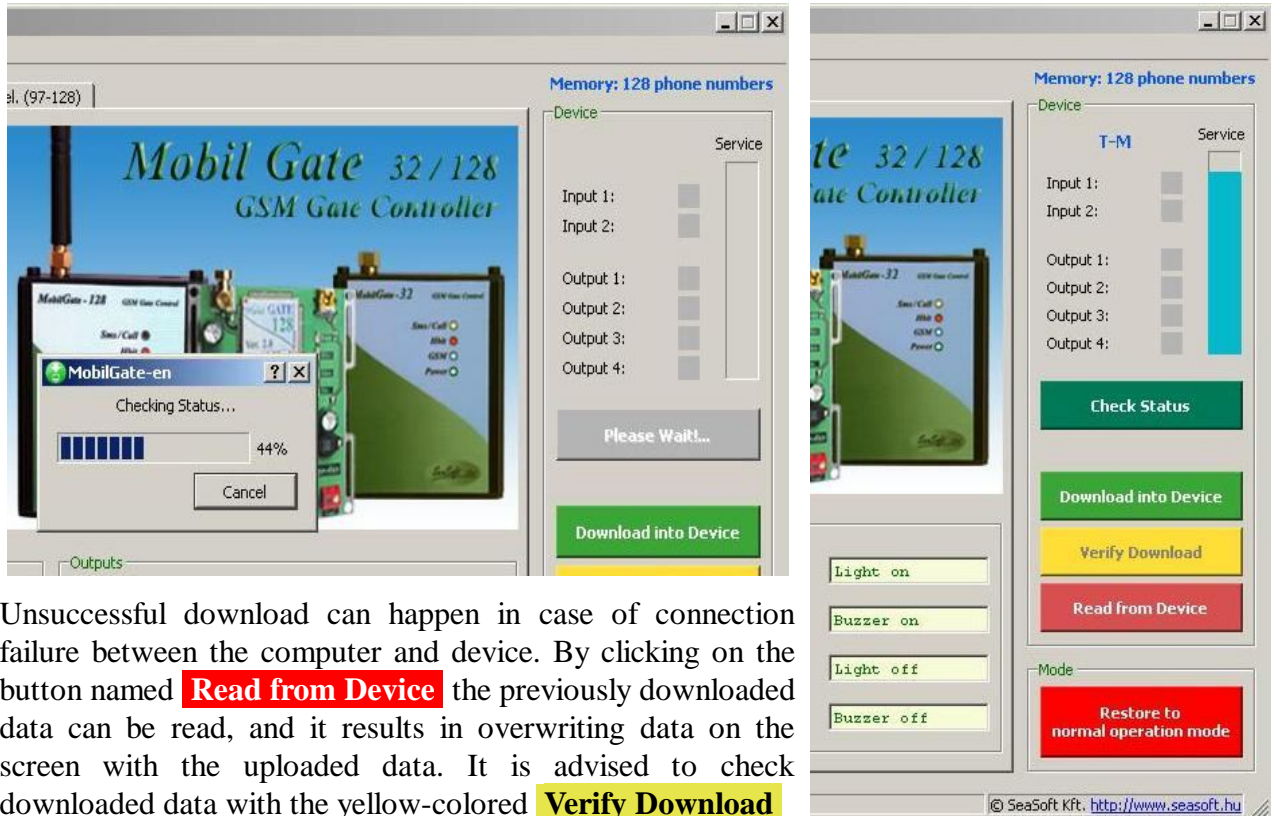
configured to the computer. In this case the device might not be in the range of **Com1...Com99**. Start the downloader software then set the Com value in **Settings** -> **Port configuration** menu.

The download software of **MobilGate-32c** offers a fast and simple way to configure the device. Menus appearing on the screen allows the access to the most important functions. Not only downloading the configuration into the device is possible, but also the previously set configuration can be read

from gate controller. If the data has been modified since the last download i.e. by SMSs, it can be read and checked. It is advised to always start configuration with a file named **Default.mob**. It is easier to edit uploaded data without making any mistake than creating new values. It is important to fill out the required fields and avoid the use of accented characters for names and commands because the module does not recognize accented characters. Fill the phone numbers in international format without the '+' sign! Loading data into the device can be started by clicking the green **Download into Device** button.



The successful download will be indicated in a pop-up window. The pop-up window contains a corresponding error message if the download was unsuccessful.



Unsuccessful download can happen in case of connection failure between the computer and device. By clicking on the button named **Read from Device** the previously downloaded data can be read, and it results in overwriting data on the screen with the uploaded data. It is advised to check downloaded data with the yellow-colored **Verify Download**

button. The **Check Status** function queries the device for network connection status, input and output status and possibly the name of the service provider. Relay functions can also be checked manually. Click on

Menu -> **Device** -> **Relay test**, where relays can be triggered manually



which is shown by the output status on screen located below the inputs' statuses.

The software can handle every version of the *MobilGate* family. It automatically recognizes the 32 and 128 version of the device family and it allows to open the group of mobile numbers beyond 32 in case of the 128 version.

After finishing the configuration, please reset the module to verify the changes. It can be done by clicking on the red-colored **Restore to normal operation mode** button. The GSM module quits configuration mode and resets to normal mode.

After restore, it restarts automatically, switches back to normal operational mode, connects to the network and (after less than a minute) when the green LED starts to blinking, it becomes fully operational again.

5. Configuring MobilGate-32c by SMSs

Considering that *MobilGate-32c* is a complicated device, it is advised to configure it with the download software. Simple changes (e.g. adding or removing a phone number) can be done remotely via SMS. The module confirms every SMS command with a response SMS. Do not send any further SMS commands until the confirmation SMS is received, because it might be lost and will not be executed! The confirmation SMS shows the changed parameter and the actual status of inputs and outputs. If the given command is wrong, the module cannot recognize it, thus an SMS with the content of Error! will be sent back. Please configure the SMS center number first during configuration otherwise the device will not respond for certain configuration commands and will not operate correctly. It is necessary to know the memory map of the device for configuration:

| <i>MobilGate-32c - functional memory map</i> | | | | |
|--|--|----------------------|--------------------|------------------------|
| Memory | Function / contents | Remarks | Default | Progr. samples |
| 00 | Provider's SMS center number | International format | - - - | 36309888000 |
| 01 | Device PIN code | 4 characters | 1234 | 9876 |
| 02 | Device identifier | 4 scharacters | 0001 | 0007 |
| 03 | Name of device | Max. 16 characters | My house | My castle |
| 04 | Restore report of inputs | 0 = no, 1 = yes | 1 | 1 |
| 05 | Name of input 1 | Max. 16 characters | Gate | Barrier |
| 06 | Name of input 2 | Max. 16 characters | Pushbutton | Alarm system |
| 07 | Relay's switch-on time | Between 0...9999 sec | 0005 | 0012 |
| 08 | Switch-on SMS command of relay 3 | Max. 16 characters | Light on | alarm on |
| 09 | Switch-on SMS command of relay 4 | Max. 16 characters | Buzzer on | syren on |
| 10 | Switch-off SMS command of relay 3 | Max. 16 characters | Light off | alarm off |
| 11 | Switch-off SMS command of relay 4 | Max. 16 characters | Buzzer off | syren off |
| 12 | Switch-on SMS from Input 1 | Max. 16 characters | motor error | barrier trouble |
| 13 | Switch-on SMS from Input 2 | Max. 16 characters | pressed | in alarm status |
| 14 | Switch-off SMS from Input 1 | Max. 16 characters | motor ok | barrier ok |
| 15 | Switch-off SMS from Input 2 | Max. 16 characters | released | end of alarm |
| 16 | Reserved memory area | No function | - - - | - - - |
| 17 | Reserved memory area | No function | - - - | - - - |
| 18 | Reserved memory area | No function | - - - | - - - |
| 19 | Reserved memory area | No function | - - - | - - - |
| 20...25 | Reserved memory area | No function | - - - | - - - |
| 26 | Reserved memory area | No function | - - - | - - - |
| 27 | Reserved memory area | No function | - - - | - - - |

Add the SMS center number first, because confirmation SMS will get back about its sending as well:

i.e. **!1234,W00,36309888000** where **1234** device PIN
W00 memory place means SMS center number
36309888000 SMS center number in international format (here hungarian T-Mobile)

i.e. **!1234,W01,5678** where **5678** device PIN
W01 memory place is PIN code giving command
5678 new PIN code

i.e. **!1234,W02,5566** where **5566** new device ID
W02 device ID memory place

i.e. **!1234,W11,syren** where **syren off** message to be sent by the device in case of output 4 switch-off
W11 memory place is content of the SMS in case of output 4 switch-off

| <i>MobilGate-32c - functional memory map (continued)</i> | | | | | | |
|--|--|---|---|---|---------|------------------------|
| Memory | Function / contents | | | Remarks | Default | Progr. samples |
| | Inputs 1 st character (starts SMS) | Outputs 2 nd character (switched by call) | Telefon number 3 rd - 13 th character | 0 = none 1 = only 1st 2 = only 2nd 3 = both (1 st and 2 nd) | | |
| 28 | 2 | 1 | 1st telefon number | | --- | 2,1,36209876543 |
| 29 | 3 | 2 | 2nd telefon number | | --- | 3,2,36301234567 |
| 30 | | | 3rd telefon number | | --- | |
| 31 | | | 4th telefon number | | --- | |
| 32 | | | 5th telefon number | | --- | |
| ... | | | ... | | --- | |
| ... | | | ... | | --- | |
| 58 | | | 27th telefon number | | --- | |
| 59 | | | 32th telefon number | | --- | |

i.e. **!1234,W29,3,2,36301234567** where **3 (the first 3 characters)**.means that this phone number will be informed about both input changes
2 (second character) means that only relay 2 will switch on for the given time when called.
36 30 1234 567 (last 11 characters) means the phone number on memory place 29.

Using the two tables above with the same logic with using the correct syntax for the given memory space, every memory space can be loaded via an SMS. Default settings remain in the unchanged memory spaces. Loading memory spaces by SMSs can take some time, therefore it is advised to use only for remote configuration.

6. Query SMS commands:

i.e. **!1234,R00** where **R00 the 00th memory place** of the device (see table) carrier SMS number can be queried.

i.e. **!1234,R28** where **R28 the 28th memory place** of the device (see table) first user phone number can be queried.

i.e. **!1234,R** where **R** if there is no number after it, it shows device status.

Response SMS in case of Default settings:

1234 My house Gate: motor ok Pushbutton: released Light off Buzzer off

This SMS informs about:

- the valid device PIN code - **1234**
- the actual nema of device - **My house**
- the name of 1st input - **Gate**
- the status of 1st input - **motor ok**
- the name of 2nd input - **Pushbutton**
- the status of 2nd input - **released**
- the status of sms switchable relay no.3 - **Light off**
- the status of sms switchable relay no.4 - **Buzzer off**

7. Output configuration commands

i.e. **Light on** where **Light on** command is on **M09** memory place command which (see table) is the retraction command of relay 3. Relay 3 will turn on.

Attention ! The device will execute the given command if it is identical to the command given in the memory. If the sent SMS does not match with any SMS command, the module will send back an **Error!** message.

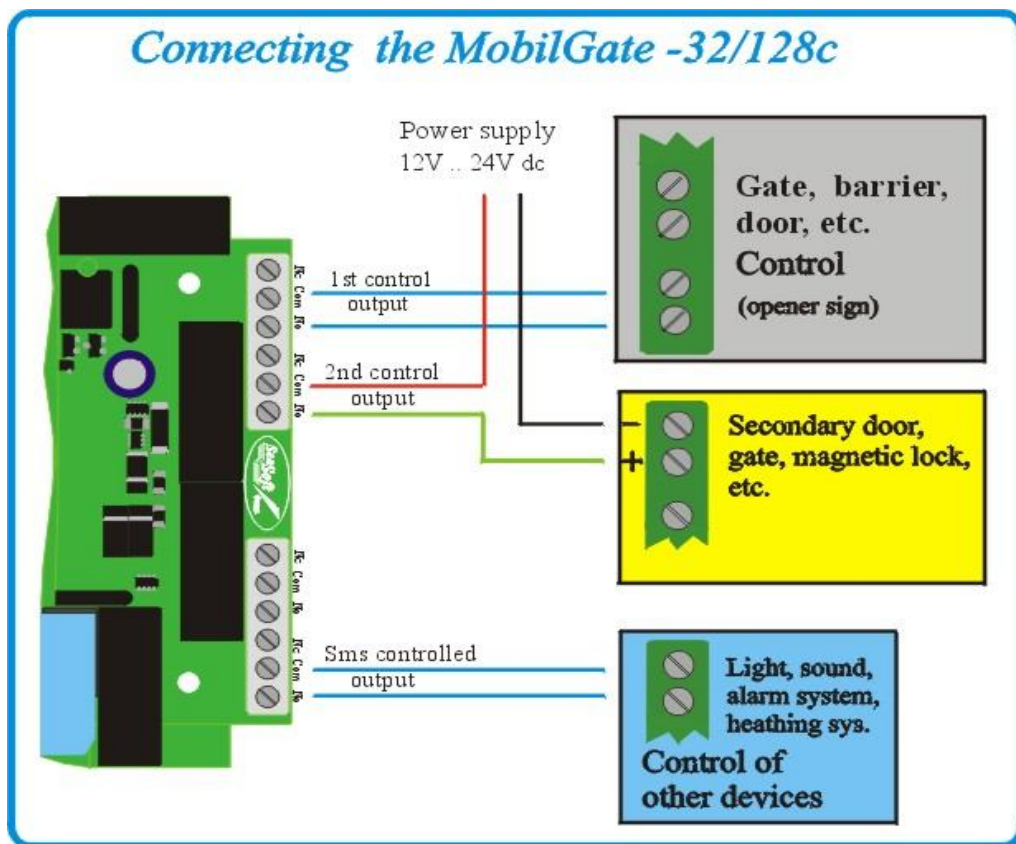
8. Further notes

Regarding to the device functionality, GSM networks and the specialty of GSM voice calls and SMS-s, the module requires further remarks:

- a) The device can be operated with any microSIM card
- b) The received unknown SMS-s, including the ones sent from the carrier (including the balance check SMS) are forwarded to the first telephone number, if the first telephone number is specified in the configuration.
- c) If a pre-paid SIM card is used and the balance reaches zero, the device can remain operational however it cannot send further SMS-s or initiate calls. In this case it is advised to regularly check the balance of the card.

- d) After downloading a configuration from PC via USB, the device will restart which takes 30-40 seconds, and it will be operational after registering to a GSM network.
- e) All members of the **Mobilgate** family can operate only with SIM cards that are not protected with PIN codes. Please note that the SIM PIN is not equal to the module PIN number.
- f) Before device use, the PIN code has to be removed from the SIM card.
- g) By using pre-paid SIM card, showing the caller ID must be enabled. This can be performed by contacting the carrier's customer service.
- h) Call-forwarding and SMS reminders about missed calls sent by the carrier must be disabled on the SIM card.

9. Connecting the MobilGate-32c



10. Specifications

| | | | |
|-----------------------------|--------------------|----------------|---------------------------|
| Power supply: | 10–30 Vdc | GSM: | Dual band |
| Max. Current: | 290 mA | Frequency: | 900/1800MHz |
| Stdby current (relays on): | 27 mA | Communication: | SMS, voice |
| Stdby current (relays off): | 135 mA | Aerial conn.: | SMA |
| Operating temperature | -30 - +70 C | Enclosure: | DIN rail enclosure |
| | | Dimensions: | 107 x 90 x 66 mm |

SeaSoft Ltd. - 2013

Appendix: modifications of of setting of USB serial Com port in Windows-7 (step-by-step)

