MobilGate - 32

MobilGate-32 is an industrial GSM module developed for the remote controlling of *doors*, *garage* doors and *barriers* with *2 inputs* activated for closing contact and 4 single circuit *relay outputs*. Its 2 relay outputs allows the configuration of *32 phone numbers* to control the gates remotely with a *free call* based on caller ID recognition. The other 2 relay outputs can be switched by configuring previously from any phone to *send SMS* orders. Relays operated with a *free call* can be switched for a determined time and the relays operated with *SMS*s can be turned *on and off* permanently. The recognition of maximum 32 phone numbers gives entitlements for the configured *32 users*. The general inputs can be used arbitrarily for the transmission of gate error signal, alarm

center alarm signal or panic signal. Users are informed about the input changes in an SMS with a preconfigured content. Certain electric devices, like heating, air conditioner, lighting, etc. can be turned on or off with the relay outputs operating with SMSs, so the gate opener's function can broadened with many supplements. Its power voltage is *10-30V DC*, which can be provided by a power adapter. Its setup can be done with our free *downloadable* software via *USB port*, or by sending several different configuration SMS remotely. Each inputs and outputs can be named with a max. 16 character long name and the configuration order of the SMS relay outputs can also be determined which are executed by the relays (turn in or off).

The module also has a 4-character code in order to prevent any unauthorised personnel to disable or reconfigure the module. The GSM gate opener has internal timers, so the output relays switch for a configured time when called, which can be maximum *9999 seconds* (about 3 hours), then after the given time expires, the relays turn off automatically and return to their original state.

1.   Functioning of MobilGate-32

Normally, the GSM gate opener is ready for SMS-based communication with a service provider-independent industrial GSM module by connecting to the chosen GSM network with a prepaid or subscription SIM card without PIN code. Data necessary for functioning, like SMS number of the service provider, users' numbers, output and input names etc. can be configured by downloading them or sending an SMS with a certain content, similarly to the PIN code of the module and the 16-character input and output names. When there is any change on the inputs, module name, module number and the changed input name and status are also sent, because can make easier to identify the module in case of having more than one. Input and output statuses, with every other parameter, can be checked by sending an SMS. Configuration SMSs are confirmed after they are sent and an incorrect configuration SMS will result in an error message.

The module *does not discard* the set configurations, such as input names, output status, phone numbers, etc. after turning it off and after power-up, timer contents are deleted though, 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 and turns it back, connects it to the network again, restoring it into operational state. The module can be purchased in a package with download software and aerial. Its panel version is called *MobilGate-32*, its enclosured version is called *MobilGate-32d* and the version installable to a C-rail (DIN-rail) with high current ralays is called *MobilGate-32c*.

2.   LED diode signals

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

- **On** (red)   The interface is operational. It has to remain alight after turning it on.

- **GSM** (white)   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.

- **Heartbit** (green) It is the life signal of the interface electronics. When the device is turned on it does not flash until the device is connected to the network. It starts flashing after connection. The flashing indicates signal: 0 to 10 flashes show signal strength. *0 flash is not connected status*, the *2* or *3 flashes are low-signal* when GSM connection is not secure. *4 or more flashes* mean *sufficient signal* strength for functioning. In case the green LED didn't light up after 1 minute, the modem could not connect to the network at all. You have to check the aerial and the SIM card because a SIM card or PIN code may have occurred.

- **Busy** (yellow)   It is on during device communication, this is when it is in connection with the receiver device.

3.   Connecting *MobilGate-32* :

You can find the connection points of the interface on the illustration below:
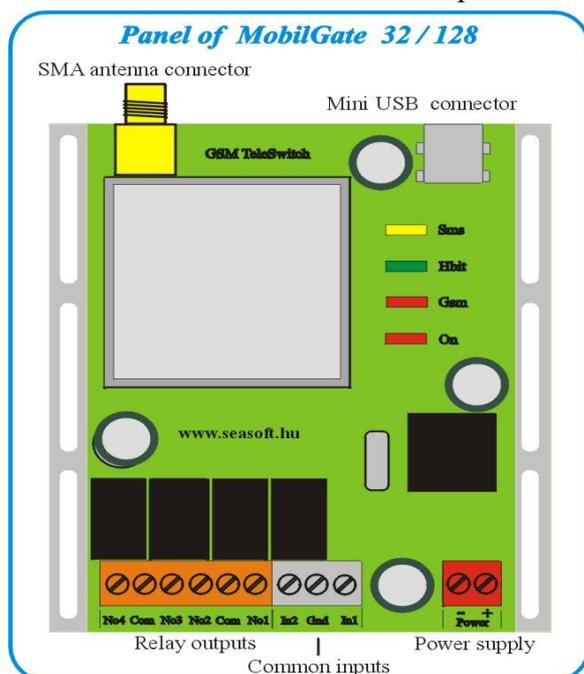
Up: Antenna connector
                 USB connectors
Down: Output connectors
                 Input connectors
                 Power supply connector

The power connection points need *10-30V DC* voltage. The inputs of the *MobilGate-32* GSM module can be switched by turning them to ground (Gnd) position. The numbering of the module inputs is marked on the printed circuits. Its outputs are single circuit *NO-type* relay outputs and their maximum load is *48V* and *1A* load current. The *COM* and *NO* points of the relays are wired out. The industrial GSM module has screwed *SMA* aerial port and a small-sized pole aerial or an aerial with a coax cable and similar plug can be installed on it. The input operating for closing contact of MobilGate is not separated from its circuit,

thus ***connecting any external voltage to it is forbidden!*** The power input of the GSM gate opener module is protected against reversed polarity and it is even supplemented with ***500mA multifuse***.

4.   Configuring MobilGate-32 using a computer:

MobilGate-32 can be configured by using our free software from your computer or notebook via its ***USB-port***. A SIM card ***able to send SMS*** and is ***without PIN code request*** has to be inserted into the module. When you connect it to the USB-port, you have to ***install the module driver*** from the CD or download it from www.seasoft.hu webpage. Installing the module driver is

required for Windows XP or any newer operation system to recognize it. During module driver installation, serial port configuration is the next step. It starts by clicking on the Set Port button.

Windows registers the module and assigns it to its ***COM port***. The downloader indicates module classification by activating its coloured controls and ***enters configuration mode***. The user can configure MobilGate GSM gate opener freely in configuration mode.
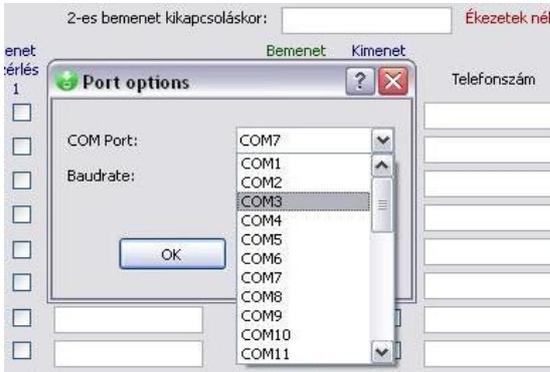
If the screen couldn't switch to the searching port mode indicated on the picture, you will have to identify it manually in Windows by the following:

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

You have to find the device indicating which serial port it is connected to, from **Com1 to Com99**, by your computer.

Manual configuration is necessary when a lot of devices were connected to the computer before and. our device will not be in the range of **Com1...Com99** automatic device recognition. Start then the download software then and set that Com value in the **Settings** -> Port configuration menu.

The download software of **MobilGate-32** offers a fast and simple way to configure the device. Menus appearing on the screen allows the access to the most important functions and every data appears and becomes editable in its windows. Not just configuratin data download is possible but data upload, too. If the data were modified since the last download to the computer by i.e. SMSs, it can be displayed and checked here after upload. It is advised to start configuration with a file named **Default.mob** always. It is easier to edit uploaded data without making any mistake than to create new values. It is important to fill out the required fields and always avoid using accented characters for names and commands in the download software because of the character-dislocation between GSM phones! The module does not recognise accented characters. Filling out first user phone number is required, and the
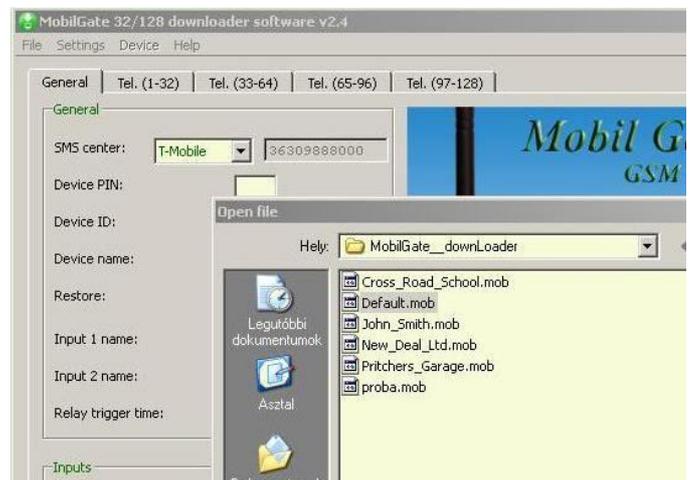
others are optional. ***Add the international format of phone numbers without the + sign!***

    Loading data into device can be started by clicking on the green Dowload into Device button. The succesful download will be indicated by a pop-up window. The pop-up window also indicate the
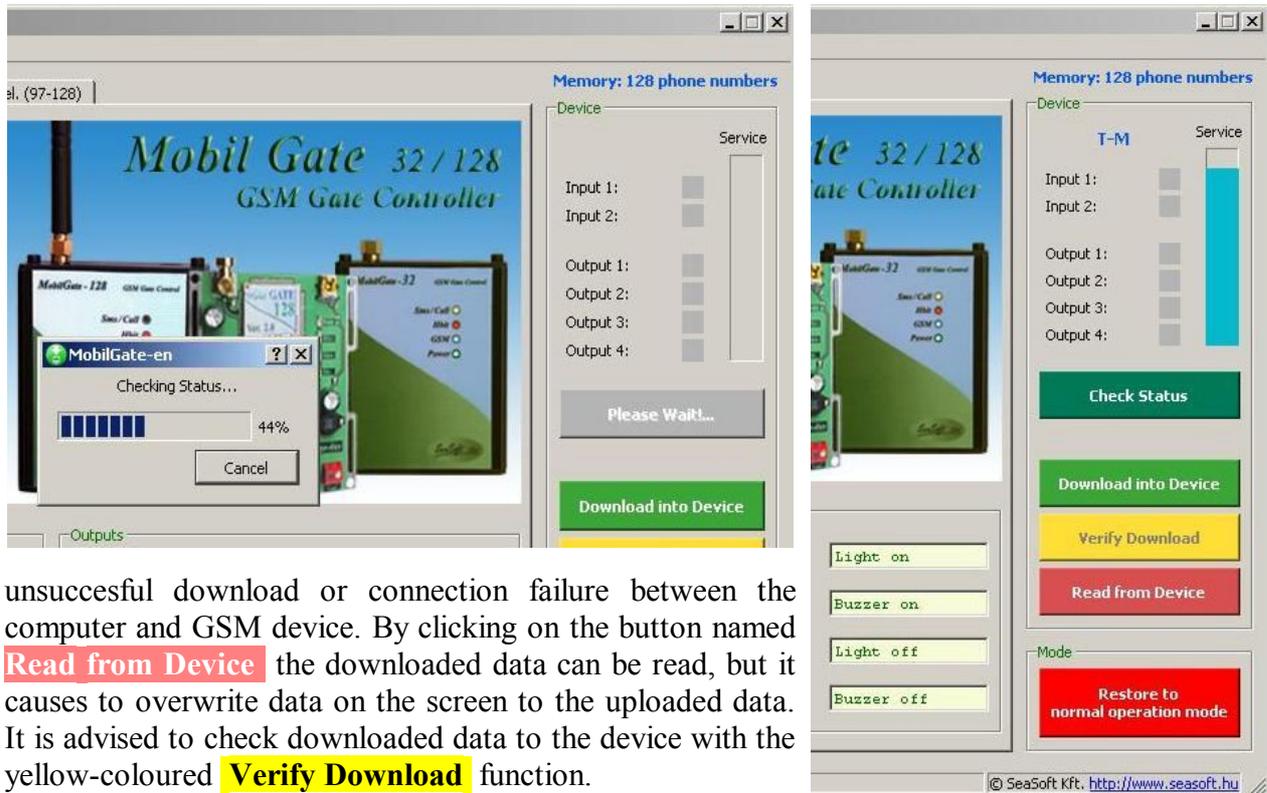
unsuccesful download or connection failure between the computer and GSM device. By clicking on the button named Read from Device the downloaded data can be read, but it causes to overwrite data on the screen to the uploaded data. It is advised to check downloaded data to the device with the yellow-coloured Verify Download function.

The Check Status function shows the connected (to a network) status,actual signal, input and output status and possibly the name of the service provider. Relay functions also can also be checked manually. Click in **Menu** -> **Device** -> **Relay test** , where you can operate relays

manually which is shown by the output statuses on screen, below the input's rows.

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

    After finishing the configuration, restart the gate opener to verify the changes. It can be done by clicking on the red-coloured Restore to normal operation mode button. The GSM module quits configuration mode and resets to normal mode.

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

5.   Configuring MobilGate-32 by SMSs:

Considering that MobilGate-32 is a complicated device, it is *advised to configure it with the download software*. Simple changes (i.e. adding or removing a phone number) can be done remotely in SMS. The module confirms every SMS command with a response SMS. Until you don't receive a confirmation SMS do not send any other command, because it may be lost and will not be executed! The confirmation SMS shows the changed parameter and the actual status of the inputs and outputs. If the given *command is wrong* and the module *cannot recognize it*, an SMS with the content of *Error!* will be sent back. Give the SMS center number first during configuration or else the device will not respond for certain configuration commands and will not operate perfectly. It is necessary to know the memory map of the device for configuration:

	MobilGate-32 - functional memory map			
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 command of relay 3 by SMS	Max. 16 characters	Light on	alarm on
09	Switch-on command of relay 4 by SMS	Max. 16 characters	Buzzer on	syren on
10	Switch-off command of relay 3 by SMS	Max. 16 characters	Light off	alarm off
11	Switch-off command of relay 4 by SMS	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	- - -	- - -
...	Reserved memory area	No function	- - -	- - -
...	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

MobilGate-32 - *functional memory map* (continued)					
Memory	**Function / contents**			**Remarks**	**Default**	**Progr. samples**
	Inputs 1st character (starts SMS)	**Outputs** 2nd character (switched by call)	**Telefon number** 3rd - 13th character	**0** = none **1** = only 1st **2** = only 2nd **3** = both (1st and 2nd)		
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**		---	
...			**...**		---	
...			**...**		---	
154			**127th telefon number**		---	
155			**128th 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 but by using the correct syntax for the given memory place, every memory place can be loaded by an SMS. Original settings will stay on the unchanged memory places. Loading memory places by SMSs is a bit lengthy so we advise this method only for remote setting. The loading is easier to be done by downloading the previously edited data.

6. Query SMS commands:

i.e.   **!1234,R00**   where **R00 the 00th memory place** of the device (see table) provider 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 is **not corresponding** with any SMS command, the module will send back an *Error!* message.

8. Further notes:

Having regard to the function and build of the device and to the uniqueness of GSM networks and GSM-based communication, the operation of the interface needs some notes:

– The interface module – due to its special plug – can be operated only with the GSM industrial module designed with it with an arbitrarily chosen SIM card.

– When a prepaid card is used and there is no credit on it, the interface is only seemingly functional, but it cannot communicate. So, check the credit balance of it regularly!

– The service provider may send SMS about i.e. the card balance to MobilGate-32 GSM remote controller. The module cannot distinguish wrong commands, the provider's balance information and other SMS spams from each other and it ignores every SMS from unknown numbers!

9.   Connecting the MobilGate-32:

Connecting the MobilGate -32/128

Power supply
12V .. 24V dc

Sms input

1st control output

2nd control output

Gate, barrier, door, etc.

Error sign output, or emergency pushbutton, etc,

Opener sign

Secondary door, gate, or magnetic lock, etc.
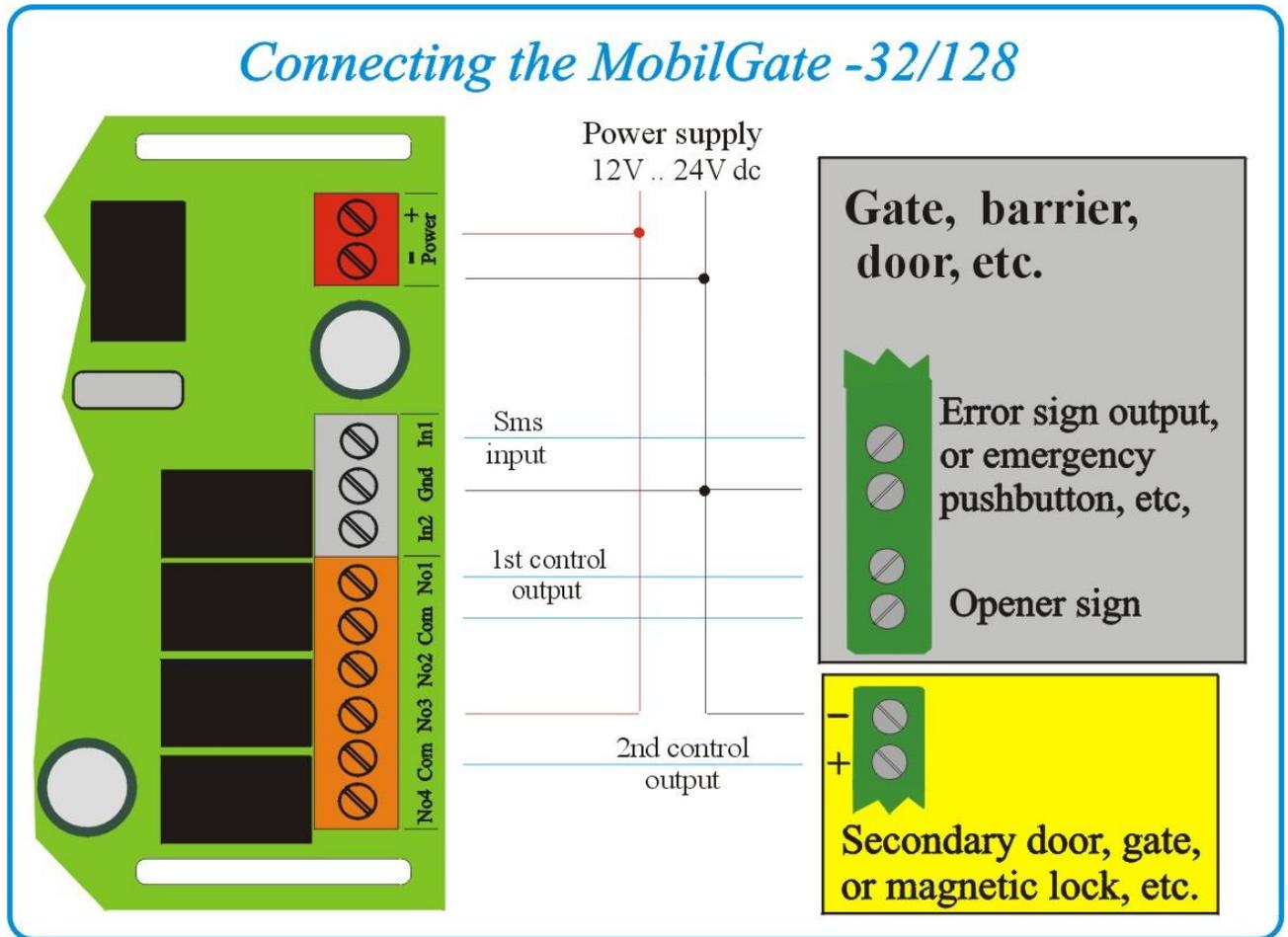
10.   Specifications:

Power supply:	**10–30V DC**	Maximakl current:	**170 mA**
Current in IDLE mode:	**36-140 mA**	Freqv. band:	**900/1800MHz**
Current in case of relays off:	**36 mA**	Communication:	**SMS, voice**
Current in case of relays on:	**105 mA**	Antenna connector:	**SMA**
Ambient temparature	**-30 ... +70 C**	Enclosure:	**opcional / aluminium**

11. My configuration: date of configuration: ....

| *MobilGate-32 - functional memory map* |
Memory	Function / contents	Remarks	Default	My configuration
00	Provider's SMS center number	International format	- - -	
01	Device PIN code	4 characters	1234	
02	Device identifier	4 scharacters	0001	
03	Name of device	Max. 16 characters	My house	
04	Restore report of inputs	0 = no, 1 = yes	1	
05	Name of input 1	Max. 16 characters	Gate	
06	Name of input 2	Max. 16 characters	Pushbutton	
07	Relay's switch-on time	Btw. 0...9999 sec	0005	
08	Switch-on command of relay 3 by SMS	Max. 16 characters	Light on	
09	Switch-on command of relay 4 by SMS	Max. 16 characters	Buzzer on	
10	Switch-off command of relay 3 by SMS	Max. 16 characters	Light off	
11	Switch-off command of relay 4 by SMS	Max. 16 characters	Buzzer off	
12	Switch-on SMS from Input 1	Max. 16 characters	motor error	
13	Switch-on SMS from Input 2	Max. 16 characters	pressed	
14	Switch-off SMS from Input 1	Max. 16 characters	motor ok	
15	Switch-off SMS from Input 2	Max. 16 characters	released	
16 ...27	Reserved memory area	No function	- - -	- - -

My configuration *(continued)*

Memory	Function / contents			Remarks	Default	My configuration
28	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
29	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
30	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
31	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
32	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
33	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
34	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
35	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
36	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
37	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
38	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
39	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
40	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
41	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
42	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
43	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
44	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
45	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
46	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
47	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
48	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
49	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
50	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
51	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
52	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
53	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
54	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
55	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
56	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
57	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
68	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	
59	**Inputs**	**Outputs**	**telefon number**	1+1+11 characters	_	

MobilGate-32   phone number's map