

The **MobilGate-6** GSM remote control device is developed for controlling doors and barriers remotely. It is equipped with a single-circuit relay output. The user can trigger the output with voice calls. The GSM device can recognize up to **8** pre-defined telephone numbers. After triggering the output by the user, the output state will be held for the configured amount of time. The closing pin of the relay is wired out, and it can be configured to operate in **monostable** mode (output will be triggered for a pre-defined duration, then it will be switched off automatically) or **bistable mode** (the output will be triggered and it will remain in that state). The user telephone-numbers are stored on the **microSIM** card which can be configured by inserting in a traditional mobile phone and performing the required operations in a few minutes. The timing interval of the monostable mode can be configured up to **9999** seconds (~2 hours). In the monostable mode, when the user initiates a voice



call to the device, the output will be triggered and the device will decline the initiated call, thus the user will receive a “**busy**” response. Using the bistable mode, the relay will be triggered roughly after the third ringing tone, then the device will end the call. In this case if the user initiates another call, the device will switch off the previously triggered relay after the first ringing tone, and the device will end the call. The device is equipped with a single-circuit “**NO**” and “**COM**” relay, which can be loaded with **1A** at maximum of **48Vdc**. The **MobilGate-6** device with enclosure has the connectivity of a built-in antenna or an external, magnetic-bottom antenna that can be connected via the SMA connector. The power supply source (**10-30V**) has to be connected to the red serial connectors located on the panel. The output relay is wired to the blue serial connectors, thus the gate- or barrier-controlling electronics have to be connected to this connector (e.g. the external button of the gate-opener should be wired in parallel with the device). There is a button located on the top of the device. By pressing the button, it simulates a phone call; thus the output can be triggered by pressing the button. By

pressing the button for longer than **10 seconds**, the device will send the configured phone numbers to the first telephone number via SMS. The **MobilGate-6** device is equipped with a carrier-free GSM module and it operates with a **microSIM** card. The SIM card can be either a pre-paid card or a card with subscription. The phone numbers configured to the device are stored on the SIM card. After resetting the device, the numbers will be retained and the output relay will return to its initial state.

Wiring of the **MobilGate-6** device

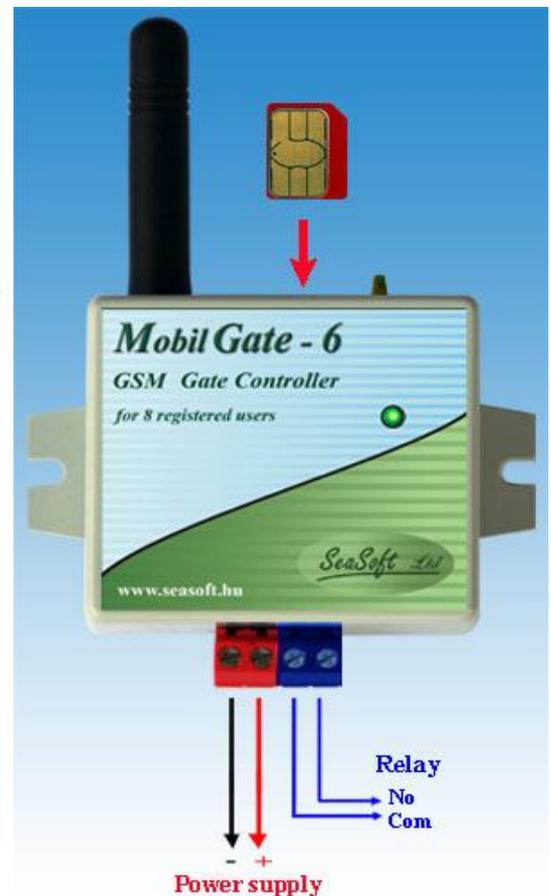


The DC power supply of the **MobilGate-6** device should be connected polarity-wise: the **10-30Vdc** voltage should be connected to the right pin of the red serial connector, and the ground should be connected to the left pin. Should the power supply connected the other way, the device will not be damaged, but will not work either.

The output of the relay can be loaded with up to **1A** at **48V**. The **NO** and the **COM** pin of the relay are wired out as well. The device with white-colored enclosure is equipped with a built-in antenna. The black-colored enclosure version is equipped with an SMA connector, thus an external magnetic-bottom antenna can be connected to the device. This version is recommended when the **MobilGate-6** device is installed in a metal box which can cancel the GSM transmission.

Cautions about the wiring:

- x The power supply input must be between 10-30V DC and the supply must be able to deliver at least 300mA current.
- x AC voltage must not be connected to the device because it can destroy the module.
- x The device cannot be supplied by rectifying the voltage of a traditional gate opener (**24V AC**), because the rectified **24Vac** will result in a **DC** voltage with roughly **35Vdc** voltage peaks which may cause damage to the device.
- x During GSM communication, the average current drain can exceed **200mA**, thus for safe operation, a power supply that can deliver at least **500mA** at **12V** or **300mA** at **24V** should be provided for the device. By using less-powerful power supplies, the module may not operate reliably or even may not start.
- x It is forbidden to power on the device without connecting a GSM antenna. This may damage the GSM module located inside the device.
- x The SIM card must be inserted as demonstrated in the figure. Inserting the SIM card wrongly may cause damage to the GSM module when it is being switched on.



The button located on the top of the device has **three different functions**:

- **Short press** (less than 10 secs): simulates a phone call; the device will trigger the output according to the configuration, and it will **open the door** or gate.
- **Long press** (more than 10 secs): the device will send the configured telephone numbers via SMS to the first phone number.
- **Pressing** the button and initiating **voice call** to the device: the device will enter to **phone-configuration** mode.

The memory map of **MobilGate-6** gate controller:

<i>Sample memory map of MobilGate-6</i>			
Memory:	Name on SIM	Phone number on SIM:	Remarks:
0	MEM0	+36 30 9888000	Provider's SMS csntnal number (here: T-Mobile Hungary)
1	MEM1	+36 20 1234567	Master phone number (in intarnational format)
2	MEM2	+36 30 9876541	2.nd user phone number (in intarnational format)
3	MEM3		3.rd user phone number (in intarnational format)
4	MEM4		4.th user phone number (in intarnational format)
5	MEM5		5.th user phone number (in intarnational format)
6	MEM6		6.th user phone number (in intarnational format)
7	MEM7		7.th user phone number (in intarnational format)
8	MEM8		8.th user phone number (in intarnational format)
9	MEM9	0005	Monostable timing in seconds mode (always 4 characters)

Method 1:

The configuration of the device can be performed on the SIM card. It can handle 10 memory slots and the configuration can be performed in three different ways. The easiest method is to put the SIM card in a traditional mobile phone and fill the memory slots according to the yellow columns as seen in the table. It is advised to use this method for configuring the device at the first time:

1. SIM card has to be inserted into a traditional mobile phone (Nokia, Samsung, Motorola, etc.)
2. All phone numbers and SMS-s must be erased from the SIM card
3. The SIM PIN protection has to be disabled on the SIM card.
4. The “show caller id” function must be enabled. By using pre-paid SIM card, this has to be performed by contacting the customer service of the carrier.
5. Call forwarding, voicemail and sending SMS notifications by the carrier (i.e. SMS notifications about missed calls) must be disabled.
6. The “contacts” should be created based on the table of memory map. The names (e.g. MEM0) and the numbers (e.g. +36309888000) should be filled according to the yellow columns as seen in the table. The first user telephone number (master) must be filled, the rest are optional.

By pressing the test button on the device, the current configuration will be sent to the first user telephone number (master), moreover the SMS-s received from the carrier are also forwarded to this number if the MEM0 slot was previously filled. If the MEM0 slot is not given, the device cannot send SMS-s.

Note: the value in **MEM9** slot must be given with **4 digits**. The value has to be set between **0000-9999** and the unit is in seconds. If the value is **0000**, then the module will operate in **bistable** mode. This means that if the user initiates a call to device, the output will be triggered for infinite amount of time, and the output can only be switched off by initiating another call.

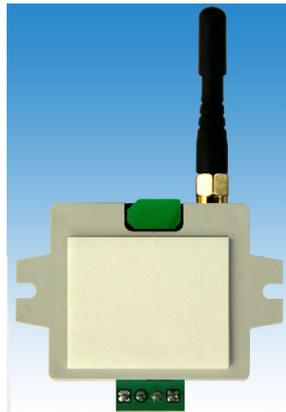
Method 2

The **MobilGate-6** gate controller can be re-configured remotely via SMS-s. This can be performed only from the master (first user telephone) number. The re-configuration SMS format is the following:

***2*3630112222#** where:

- The first * (asterisk) is mandatory
- The following number (in this example: **2**) is the memory slot that is to be changed
- The second * (asterisk) is mandatory
- The following number (in this example: **3630112222**) is the new phone number entered always in international format (without **+** or **00** at front)
- The last # (hashtag) is mandatory

By sending this example SMS to the switched on module, it changes the number in memory slot 2. The change can be verified via the response SMS sent by the device. Please note that the first telephone number (master) cannot be changed remotely, therefore this method is advised to be used for remote re-configuration of other memory slots.



Method 3

The third method is to initiate a phone call from a traditional mobile phone to the device and perform the configuration by entering the appropriate commands with the keypad of the phone. The steps are the following:

- Power-on the device and wait until it registers itself to a GSM network
- Press and hold the button located on the top of the device
- While pressing the button, initiate a phone call from a mobile phone to the device
- The device will answer the call, then the button located on the device has to be released
- Set the mobile phone to speaker mode. The memory slots can be configured by entering the following pattern on the keypad:

***3*36704567890#**

where the entered phone number (in international format; without + or 00) will be stored in memory slot 3. After entering a digit, the device acknowledges it with a short beep sound. This means the module accepted the number. After entering the trailing # (hashtag) character, the device acknowledges it with a double-beep. Then the configuration can be continued by entering a new configuring sequence or the configuration can be finished by ending the call. This method is also recommended for fully configuring the device.

7. Some of the carriers provide pre-paid SIM cards with the “show caller id” function is disabled by default. In this case, the customer center has to be contacted (e.g. number 1777 at T-Mobile Hungary) to turn on “*show caller id*”. Without this feature the *MobilGate-6* device cannot recognize the users.
8. Some of the carriers provide pre-paid SIM cards with initial credit balance, however in some cases the credit can be used exclusively for voice calls. To enable the SMS sending feature on these cards, further credit should be topped up.
9. After configuration, the device should be powered on and all functions should be checked to make sure everything works correctly.

Further Remarks:

- a) The *MobilGate-6* GSM device can be operated with any preferred SIM card.
- b) The device forwards all received SMS-s from carrier or other numbers to the first user phone number (master). Therefore, by using pre-paid SIM card, the balance checking SMS-s will be forwarded to this number as well. After the credit balance reaches zero, the device remains functional, however it cannot communicate further. It is recommended to check the credit balance regularly.
- c) After resetting or powering on, the device will be fully functional after registering for a GSM network which can take up to **30-40** seconds.
- d) The *MobilGate-6* device cannot operate with SIM cards that have SIM PIN protection.
- e) Before using the device, the *SIM PIN* must be **disabled** on the SIM card.
- f) By using pre-paid SIM cards, the “*show caller id*” function **must be enabled**. Please note that this can be done by contacting the customer center of the carrier. The *MobilGate-6* GSM device can only recognize user calls if the “*show caller id*” function is enabled.
- g) **Call forwarding** and carrier SMS notifications about busy or missed calls **must be disabled**.

Specifications:

Power supply:	10–30 Vdc	GSM:	Dual band
Max. Current:	180 mA	Frequency:	900/1800MHz
Stdby current (relay on):	31 mA	Communication:	SMS, voice
Stdby current (relay off):	20 mA	Aerial conn.:	SMA
Operating temperature	-30 ... +70 C	Enclosure:	plastic enclosure
		Dimensions:	48 mm x 42 mm x 22 mm