

INTGSM2-Intercom and access control unit operating on mobile GSM network

INTRODUCTION

The **INTGSM2** is an intercom unit which as a cell phone can call the owner's mobile or landline phone. By pressing the call button on the intercom, it makes the voice connection in a few seconds, just like when talking via a conventional intercom system. This way it makes possible for the owner to receive the visitor's calls and talk to them at anytime and anywhere, even when not at home.

The unit does not need any special installation or complicated wiring; it needs power only and an active SIM card. The unit brings communication between the ~~the traditional solution which can only keep~~ connection between the gate and the house.

FUNCTIONS

- Wireless intercom with 2 pushbuttons (for 1 or 2 apartments)
- Even 2 phone numbers can be assigned to each pushbutton (set as primary and secondary)
- Gate control function by free call, 100 user phone numbers can be configured
- The electric strike can be controlled using the phone's keys during a conversation, or on the scene using an external pushbutton.
- SMS forwarding (e.g. to forward the balance information of pre-pay SIM card)
- Simple configuration via USB using the PC software found in the intercom
- Remote configuring by SMS message



FEATURES

- Compact design, all functions on 1 panel
- Power voltage range 9-30V
- 1 contact input
- 1 relay output, max load: 5A@30V
- 1 voltage output with short circuit and overcurrent protection, max power: 1A@
- Programming port: mini USB B type
- Communication: GSM 900/1800 MHz (2G)
- Network independent, accepts any SIM card
- Operating temperature: -30°C / +60°C
- Protection: IP54

APPLICATION AREA

- Modern solution for wireless intercom system (private homes, resorts, offices, premises)
- Remotely controllable access control unit
- Keyless door opening
- Garage door opening/closing by phone
- Emergency call unit
- Info columns

ADVANTAGES

- No missed clients or visitors, since the intercom unit calls the owner's mobile phone, no matter where the owner is.
- On call, the owner can let in the guest, client or courier remotely.
- In case of absence, burglary attempts can be prevented by imitating the apparent presence.
- Fast and easy installation, easy configuration using a PC.
- Possibility for communication from any fixed place.



OPERATION

Visitor mode

When the visitor pushes the call button, the device initiates a voice call to the configured phone number. If the called party accepts the call, the communication establishes for the configured duration. During the call, the connection cannot be interrupted nor by making a call to the device, nor by pressing the button again. The call is ended automatically when the configured communication time expires, or the called party can hang up the call at anytime on his/her phone. The call is ended automatically if the called party does not answer or is not available. A new call is initiated only if the button is pressed again.

Listen-in mode

The intercom unit can be called from the telephone numbers assigned to the telephone's push buttons. If the call is initiated from any other telephone number, the intercom rejects it. In this case the unit accepts the call without ringing and the voice connection establishes. The call can be ended on the caller's phone or by pressing the call button on the unit.

If the call is initiated from a phone number which is configured in the unit as gate opener number, the device will consider the call as a gate opening call. In this case voice connection is not established, but the relay output is activated.

Controlling the relay output

The *RELAY* (normally open, NO) relay output can be controlled as follows, depending on the usage:

- **controlling by free call:**
on incoming call, after identifying the caller ID, the unit rejects the call and activates the output
e.g. garage door or barrier opening, for which max 100 user phone numbers can be configured
- **controlling by the pushbutton:**
the relay activates when the call button is pushed
e.g. possibility to connect an existing door bell
- **controlling by the *INPUT* contact input:**
the relay activates on external contact
e.g. garage door opening or closing
- **controlling by the phone's keys:**
while in call by pressing 2# of the phone's numbered keys the relay activates for the configured time period

ATTENTION:

The *RELAY* and *-OUT+* outputs is activated in parallel and independently from each other by both menu items, the *Control of outputs* and the *Gate control*. Please take this into consideration when planning the usage!

Controlling the voltage output

The *OUT+* voltage output can be used for the direct control of an electric strike as follows:

- **controlling by the pushbutton:**
the output activates by pressing the pushbutton
- **controlling by the *INPUT* contact input:**
after activating the input, the output activates for the configured time period
- **controlling by the phone's keys:**
while in call by pressing 1# of the phone's numbered keys the output activates for the configured time period

The output voltage is almost equal with the supply voltage, which provides easy usability with 12VDC or 24VDC systems. The output is protected against short circuit and overcurrent, thereby the output turns off upon overcurrent and becomes operable again after the termination of the fault.

Forwarding incoming SMS messages

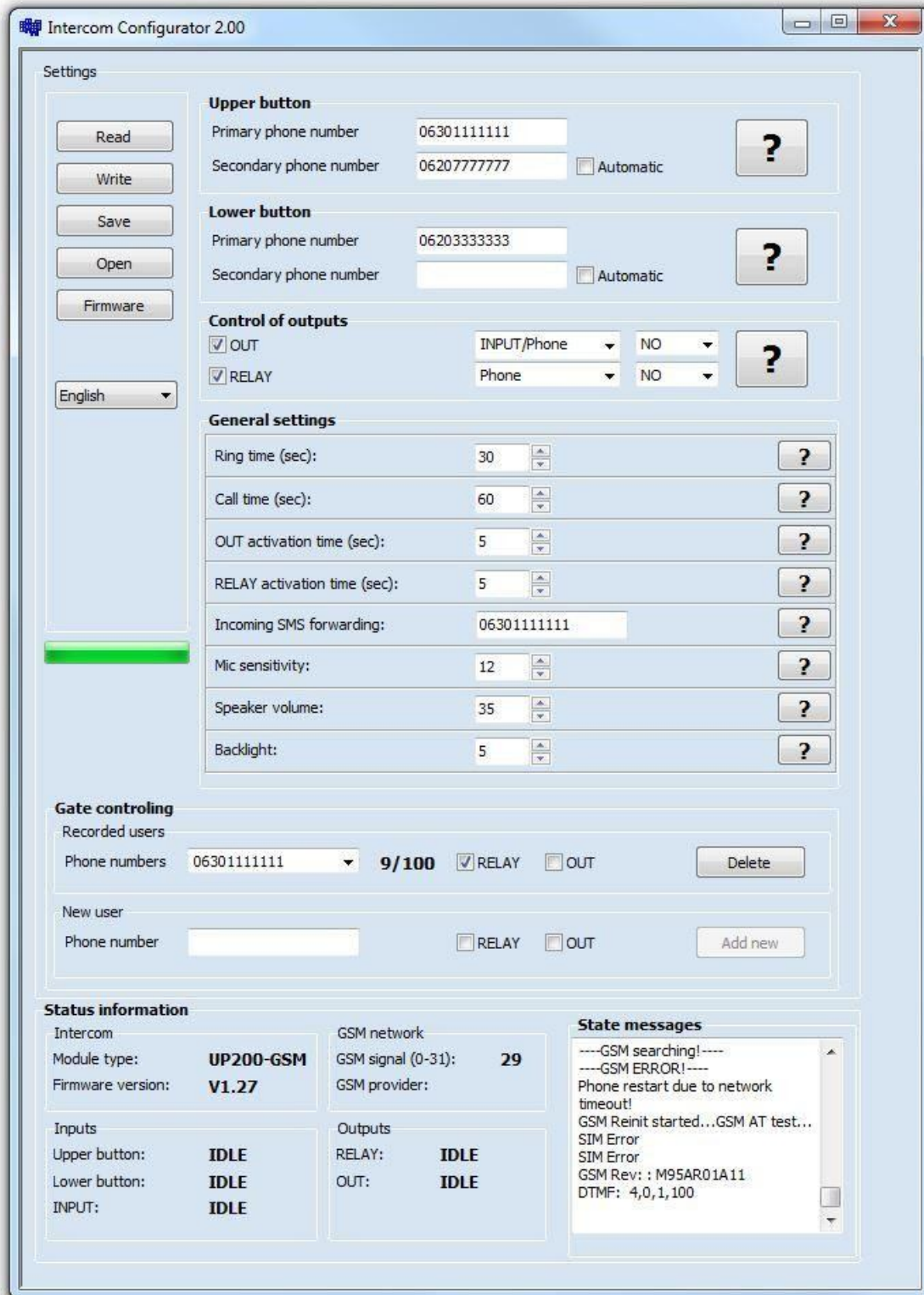
The unit forwards the SMS messages received on its SIM card (e.g. balance information in case of a prepaid card) to the configured phone number. After forwarding, the received message is deleted from the SIM card. If there is no phone number configured, the unit deletes the incoming messages without forwarding.

Status LED indications

LED	Color	
GSM OK	green	Is lit after connecting to the GSM network and reaching the sufficient GSM signal. The sufficient signal is: 10 (on 0-31 scale)
ERROR	red	Is lit continuously if the device cannot connect to the GSM network. Possible reasons: - the GSM antenna is faulty or is not connected - the SIM card is not inserted, - or the PIN code request is not disabled, - or the SIM card is faulty.
CONNECTING	green	Communication in progress. A call or conversation is in progress.
OUT+	red	Voltage output activated
RELAY	red	Relay output activated

SETTING WITH MS WINDOWS APPLICATION

The intercom unit parameters (phone numbers, controls) can be configured using the *Intercom configurator* software found on the internal storage of the device. You can run the program directly from the unit's drive after connecting to USB (Windows XP, Windows 7 and Windows 8 compatible). Connect the USB port of the GSM Intercom to the PC using the supplied cable and run the *Intercom configurator* software!



Administration operations

These menu items serve for reading, writing, saving etc. the settings. Using the functions displayed in the below picture it is possible to read and write the unit's memory and the settings, as well as save settings to PC or open and edit a file with the existing settings. The procedure to be followed in all cases:

1. By connecting to the PC via USB and clicking on „**Read**” button, the software reads and displays the intercom's settings.
2. After editing the settings and clicking on **Write** the unit uploads the data to the intercom and starts operating.

It is also possible to save data to the PC.



Read

Click to read and displays the settings from the unit.

Write

Click to write the settings to the unit's memory.

Save

Click to save the settings to file.

Open

Click to open saved settings from file.

Firmware

Click to update the intercom's firmware.

English

Click to change the language of the Intercom configurator.

Buttons

Upper button	
Primary phone number	06301111111
Secondary phone number	06207777777 <input type="checkbox"/> Automatic
Lower button	
Primary phone number	06203333333
Secondary phone number	<input type="text"/> <input type="checkbox"/> Automatic

The intercom unit calls the phone numbers entered here when the appropriate button is pressed. If both phone numbers are set to any button, the unit calls the primary phone number first, and if the call is successful, it ignores the secondary telephone number. In case of an unsuccessful call (e.g. if the called number is not available or the call is not accepted), calling the secondary phone number can be done by pushing the button again (within 60 seconds). If the **Automatic** option is enabled, then the unit calls the secondary phone number if the primary fails without having to push the button again.

Control of outputs

The two outputs of the unit can be controlled by multiple configured events. You can choose the activation event according to the usage.

Control of outputs		
<input checked="" type="checkbox"/> OUT	INPUT/Phone	NO
<input checked="" type="checkbox"/> RELAY	Phone	NO

OUT

The voltage output, e.g. for direct control of an electric lock.

RELAY

The relay contact output, e.g. for garage door control. Setting:

1. To enable control, it is necessary to tick the chosen output or outputs.
2. At the next step you need to select the starting event which will activate the output.
3. At last the default control needs to be set, where NO= OFF, NC= ON by default.
In case of **OUT** NO= 0V, NC= power.
In case of **RELAY** NO= break, NC= short-circuit

At control the output changes state for the given time period.

General settings

General settings	
Ring time (sec):	30
Call time (sec):	60
OUT activation time (sec):	5
RELAY activation time (sec):	5
Incoming SMS forwarding:	06301111111
Mic sensitivity:	12
Speaker volume:	25
Backlight:	5

Ring time (10-120 sec)

The maximum time allowed for ringing from pushing the call button. This function is useful to avoid switching to voicemail.

Call time (10-600 sec)

The maximum time allowed for a call initiated from the intercom.

OUT active time (1-120 sec, monostable)
The voltage output activation time.

RELAY active time (1-120 sec, monostable)
The relay contact output activation time.

SMS forward
Forwards the SMS messages received on the unit's SIM card to the specified phone number, e.g. balance information received from the GSM service provider. It is recommended to configure this in case of using a pre-pay type SIM card.

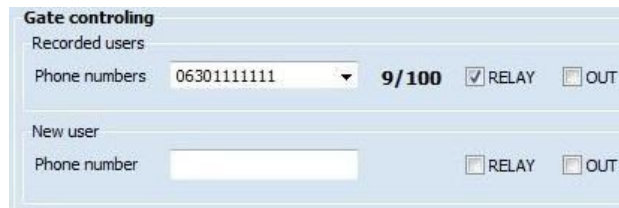
Microphone sensitivity (5-14), default value: **13**
the change in settings become valid in next call progress

Volume (10-50), default value: **25**
the change in settings become valid in next call progress

Attention: By increasing the default values of the microphone and speaker settings, echo effect may occur and increase!
If the value of volume is increased it is necessary to decrease the value of the microphone sensitivity to stop echoing. The same way, if the value of microphone sensitivity is increased the decrease of value can be the solution to suppress echoing.

Backlight brightness
light (0-10), default value: **5**

Gate control



When calling the intercom from the phone numbers specified here, control of the output or outputs assigned to the given phone number is performed. The incoming call is not accepted from the configured telephone number, so this function operates with a free call. Maximum 100 user phone numbers can be added.

Status information



Displays information about the switching state of the peripherals and the actual status of the mobile network.

Intercom information

Displays the module type and the firmware version.

Inputs

Displays information on the state of the intercom's buttons (upper and lower) and shows the state of the external control input (INPUT).

GSM network

Displays the GSM provider and the value of the GSM signal (0-31)
The appropriate GSM signal is minimum 12


Outputs

Displays the state of the relay and voltage output control.

State messages



The messages shown in this window give information about the internal operation of the unit. This helps in identifying an internal process, an incorrect configuration or other malfunction.

The question marks  placed next to the settings in the **Intercom configurator** give assistance to the parameter settings of the given section.

SETTING WITH SMS COMMANDS

Configuration of the unit is possible by sending the appropriate commands in SMS to the module's phone number. It is possible to send more commands (settings) in the same SMS, but the length of the message must not exceed 140 characters! Each message must begin with the password using the **PWD=password#** command and each command must end with **#** character, else the module does not apply the modifications. The following table contains the configuring and query commands:

PWD= 1234#	Password for programming, default setting:1234
PWC=new password#	Changing the password. The password is a 4-digit number.
RESET#	Resetting the settings and the password to default.
UPTTEL1=telephone#	Primary phone number for upper pushbutton.
UPTTEL2= telephone#	Secondary phone number for upper pushbutton.
UPAUTO=ON# or OFF#	In case the call to UPTTEL1 fails, UPTTEL2 phone number will be called without having to push the button again, if the parameter is ON.
LOWTEL1= telephone#	Primary phone number for lower pushbutton.
LOWTEL2= telephone#	Secondary phone number for lower pushbutton.
LOWAUTO=ON# or OFF#	In case the call to LOWTEL1 fails, LOWTEL2 phone number will be called without having to push the button again, if the parameter is ON.
OUT=indító esemény#	Voltage output control: OFF : disable, BUTTON : when button is pressed INPUT : when input is activated, PHONE : during call, pressing any of the phone's keys, IN+PHONE : INPUT and PHONE enabled
RELAY=indító esemény#	Relay control: OFF : disable, BUTTON : when button is pressed INPUT : when input is activated
RINGTIME=időtartam#	Ringling time of the telephone to restrict the reach of voice mail. (10-120sec)
CALLTIME=időtartam#	Maximum duration of the conversation. (10-600 sec)
RTIME=időtartam*NO# vagy NC	Duration and idle mode of the relay output activation. (1-120 sec) NO=off, NC=on
OUTTIME=időtartam*NO# vagy NC	Duration and idle mode of the voltage output activation. (1-120 sec) NO=off, NC=on
RTEL=telefonszám*REL*OUT#	Setting the phone numbers for relay or voltage output activation. For output activation the suffix after the phone number is necessary. *REL : switch the relay, *OUT : switch the voltage out, *REL*OUT switch both. Up to 100 users.
RTELDEL= telefonszám #	Delete the selected phone number from the RTEL list.
STATUS?#	Query of the settings, except for the RTEL list.
INFOSMS= telefonszám #	Forwards the balance information of the GSM provider to the given telephone number.

This scenario shows the configurations for the following requirements: phone number 2 only for upper pushbutton, auto switch to the secondary phone, VOUT control (for electric lock) by phone and input contact, duration is 10sec, both phone numbers are able to control the gate control's relay by a free call, relay activation time is 5sec. Other call parameters: Ringingtime=25sec; maximum duration of the conversation=120sec; forwarding prepaid card information to primary phone number

SMS message:

**PWD=1234#UPTTEL1=003630999999#UPTTEL2=003620111111#UPAUTO=ON#OUT=IN+PHONE#
OUTTIME=10*NO#RTEL=003630999999*REL#RTEL=003620111111*REL#RTIME=5*NO#
RINGTIME=25#CALLTIME=120#INFOSMS=003620111111#**

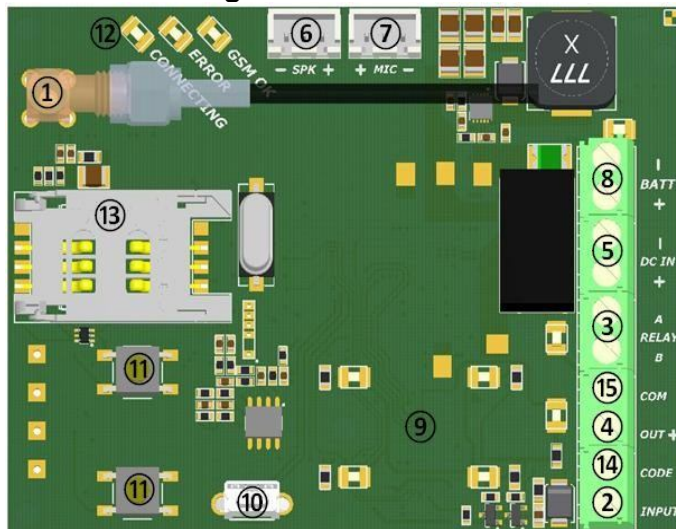
INSTALLATION

Putting into operation

- Disable PIN code request on the SIM card, for which a mobile telephone is necessary.
- Make sure the SIM card is inserted properly into its case.
- Inserting the SIM card: push the metallic part of the SIM case towards the direction of the arrow to open up the SIM slot for inserting the card. Insert the SIM card into the slot so that its contact surface should point towards the contact pins of the card case when turned down, as well as the cut corner of the card should fit into the plastic case. Fasten the SIM card by pulling back the metallic part of the SIM case.
- Make sure the antenna is fixed properly into the SMA connector.
- Make sure the wires are connected as shown in the connection diagram.
- Make sure the power supply is sufficient for the operation of the unit! If it is, and all connections are done, the unit can be powered up.

When operated with an electric lock, the minimum power requirement is 15VA!

Connection diagram



INPUT, **CODE** inputs and **OUT+** output are defined to the COM common negative point, so they need to be installed in pair with COM cable.

Mounting

- Do not mount the unit where it could be affected by strong electromagnetic disturbances.
- Antenna: the GSM antenna supplied with the unit provides good transmission under normal reception circumstances. In case of having signal strength problems and/or noisy communication, use other type of higher gain antenna or find a more suitable place for the antenna.

- ① GSM antenna connector
- ② Contact input
- ③ Relay contact output
- ④ Voltage output
- ⑤ Power input
- ⑥ Speaker output
- ⑦ Microphone input
- ⑧ Battery connector
solar powered version only!
- ⑨ Name plate lighting
- ⑩ USB mini B port
- ⑪ Call pushbuttons
- ⑫ Status LEDs
- ⑬ SIM card case
- ⑭ Coded control output
not supported function
- ⑮ Common negative point

TECHNICAL SPECIFICATION

Name	Other conditions	Minimum	Typical	Maximum	Unit
Power supply (DC_IN)		9	12 / 24	30	VDC
Current consumption	in case of 12VDC	30	40	400	mA
Relay output load				24	V
				30	V
				5	A
Voltage output			DC_IN -1V		V
				1	A
Contact input switching		0	0	100	Ohm
Operating temperature		-30		+60	°C
Outdoor protection				IP54	

Other data

Transmission frequency GSM850 / EGSM900
 DCS1800 / PCS1900

Dimensions height: 165mm
 width: 122mm
 depth: 40mm

Package contents

- **INTGSM 2**
- GSM 900MHz / 1800MHz antenna
- USB A / B5 mini cable
- Antenna bracket + fixing screws