G S M D O O R I N T E R C O M

GSM-VarioBell

www.alphatechtechnologies.cz

User manual V 1.0

Basic technical parametres:

Power supply:	12 (9-24) V AC/DC, 500mA (optionally integrated ACU 2000mAh for cca 48h of operation)
GSM :	850/900/1800/1900 MHz
dimension:	modular system – via table
buttons:	1 or 2 in basic solution. Possibility extend up to 87 buttons + keypad (for every button max. 7 phone numbers dialled progressivelly)
relay:	2x relay with switching contact
Input:	0/5 V

Basic features:

GSM-Vario Bell is usefull for different installation even for emergency communication.
You just insert SIM card and connect power supply, eventually connect el.lock. For its operation is used GSM network – so you dont need any telephone line or other cables.

- Basic module (VBG) with one or two buttons, eventually no buttons. Possibility expand by extending modules (VBD) up to 87 buttons. Under each button you can programm up to 7 phone numbers which are after button press progressivelly dialled.
- Keypad module for : dialling memory numbers (memory limited by SIM card capacity), direct dialling of phone number from keypad and inserting codes for relays activation (codes capacity again limited by SIM card only)
- 2 independent , remotely controlled switching relays with different ways of activation (activation by ringing or by code during call, by button press, by code from keypad etc...)
- 1 input for connection for example alarm (alerting by SMS) or for control of gate(door) opening (beeps during call) etc..

- Voice signalling of different events (for example. „ wait please“, „Open“ , etc...
- SMS sending with date, time and numbers list from which was relay activated by ringing; date and time and code when relay is activated by keypad code.

Function:

Hands free GSM phone – with preprogrammed phone numbers under each button (Buttons on basic module are marked ABUTTON and BBUTTON, buttons on extended modules B1 to B85.

1. **Outgoing call:** After button press is dialled first number from saved list of numbers. The numbers are saved under names ABUTTON1 to ABUTTON7 – it means first number under name ABUTTON1. When called party is busy or not available then automatically second number under name ABUTTON2 is dialled etc.. When called party picks up the call the connection is established and next numbers are not dial (the same valid for other buttons – on extended modules are marked B1-1, B1-2…. to B85-7). Waiting time for call pick up by called party is adjustable.
2. **Incoming call:** up settings will be incoming call picked up either for all calls or for saved numbers on SIM card only (connection for saved numbers only). GSM-VARIO BELL might also reject incoming calls (see later in relay function). Before picks up might GSM-VARIO BELL alert by preprogrammed by melody (adjustable) . (Notification for call establishing – listen in control).

2 remotely controlled switching relay. Each can be controlled up settings by different ways:

1. **By ringing** – incoming call is rejected (confirmation of command accept) and simultaneously is activated for preprogrammed time selected relay. The call is rejected /relay activated according setting either:

a. **From numbers saved** in phone book on the SIM card **only**
b. **From any telephone number**.

2. **By code** –
   - during voice communication (incoming as same as outgoing call) . The 1 digit code by DTMF might be dialled by called party for relay activation (for preprogrammed time). For each relay you can programm different code.
   - When keypad module is connected it is possible selected relay (not during call!) activate by code from keypad. The activation might be limited also by date,time, day of the week , access numbers, etc..
   - For relay activation by code (opening) might be setup sending SMS with date, time and number (or code) of opening
3. **By SMS** – you can remotely switch ON/OFF selected relay or activate relay for certain time mention in SMS. Relays might be controlled only from preprogrammed numbers at GSM-VB SIM card.
4. **Camera mode** – selected relay is ON by picking up the call and it is OFF by hanging up the call.
5. **Lighting mode** – selected relay is ON by picking up the call and it stays ON for preprogrammed time after hang up.
6. **Button mode** – selected relay is ON after button press and stays ON for preprogrammed time.

1 programable input :

1. **SMS sending** „ALARM ON“ to preprogrammed number when input is short circuit against ground. SMS „ALARM OFF“ to next preprogrammed number when input is disconnected. It might be programmed 1 number only (ON or OFF). Then is send 1 SMS only up selected status.
2. **opening detection**. When input is activated during call (for example by gate (door) opening) the GSM –Vario

Bell generates into a call short beeps for time of input activation.

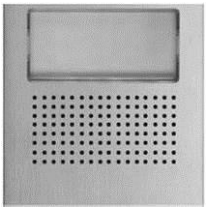
Voice signalling of different status. Up settings might be different status signalling by voice . (language adjustable). When is voice signalling presented during a call it is hearable on both sides of connection (for example „open“)

Detection of start/restart. GSM-VB indicates start of the unit (switch on power supply) by relay 1 activation for 7 seconds. This feature is usefull for example for automatic opening after power supply restart, remote restart of different device (by ringing) with automatic restart after power failure etc..

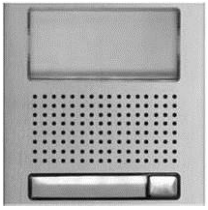
Sets

Basic module VBG-xx is main unit. Might be in 3 versions:

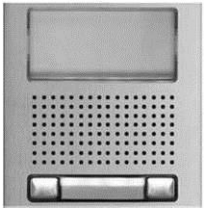
VBG-00 no button



VBG-01 with 1 button

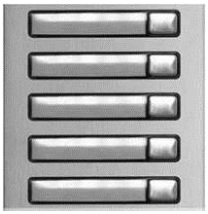


VBG-02 with 2 buttons

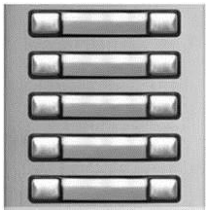


Button module VBDx-mod:

VBD5-mod with 5 buttons



VBD10-mod with 10 buttons



Buttons order numbering is setup by DIP switch on each module (viz. follow).

Keypad module VBDKey

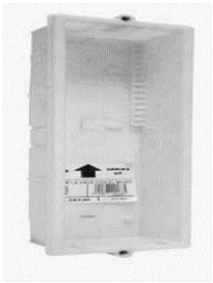
Keypad connection is not neccessary setup and not depends on position where is connected (via followe).

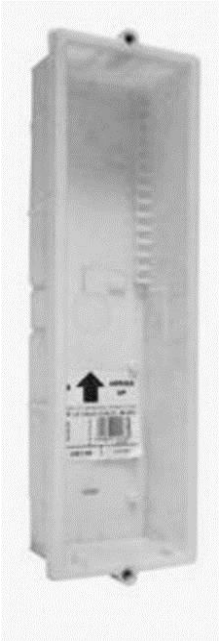
Mechanical parts

For easier explanation we show mechanical parts for 1, 2 and 3 modules. In one column are max 3 modules. The big set contents max 3 columns (9 modules). For even bigger sets you can put 9 modules set over or next each other.

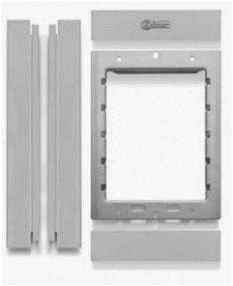
<u>Mounting box for flush mounting:</u>

Mounting box-1 Mounting box-2 Monunting box-3

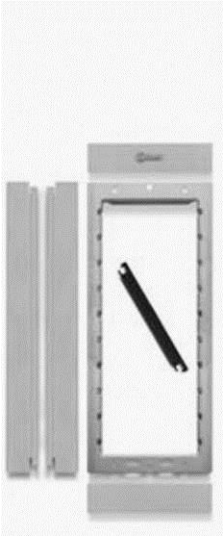




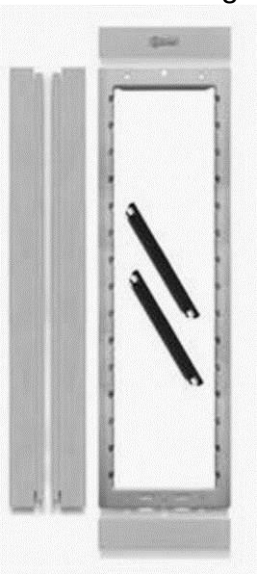
Fixing and covering frame – for flush and surface mounting



For 1 module

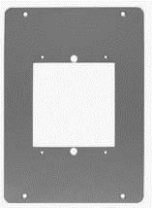


for 2 modules

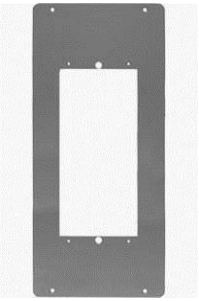


for 3 modules

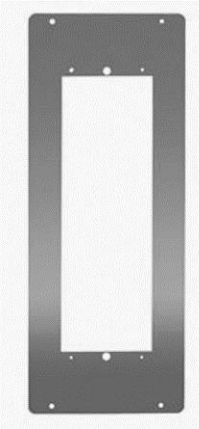
design frame – flush mounting only



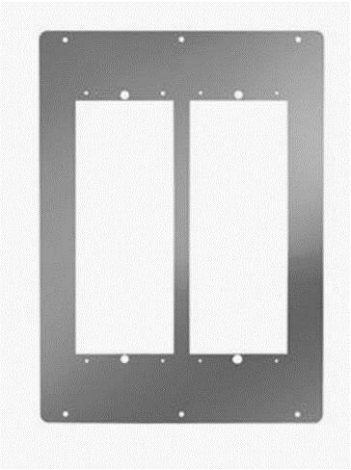
Frame-1



Frame-2

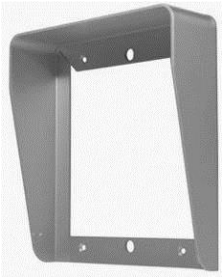


Frame-3

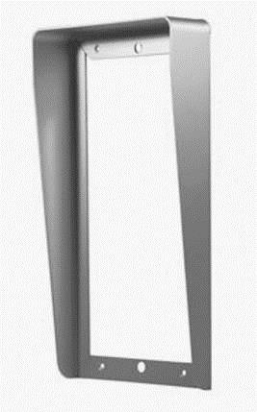


Frame - 3 x 2

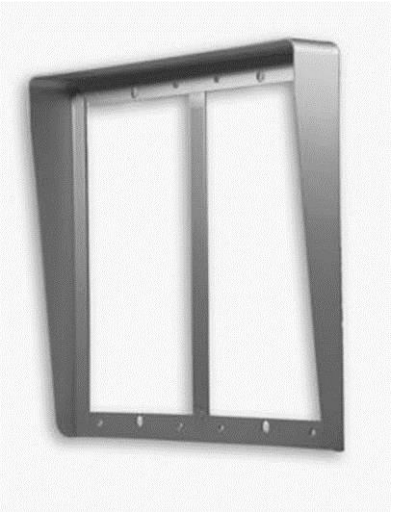
roofing shield – flush mounting only



Shield-1

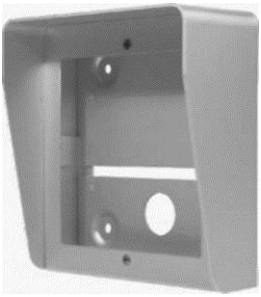


Shield-2

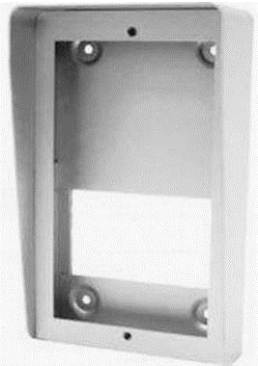


Shield -2 x 2

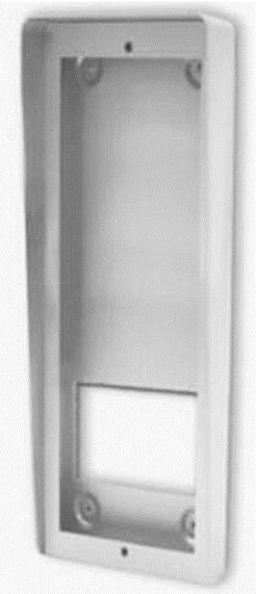
SMB – surface mounting boxi – surface mounting only
(fixing frames are extra)



SMB-1

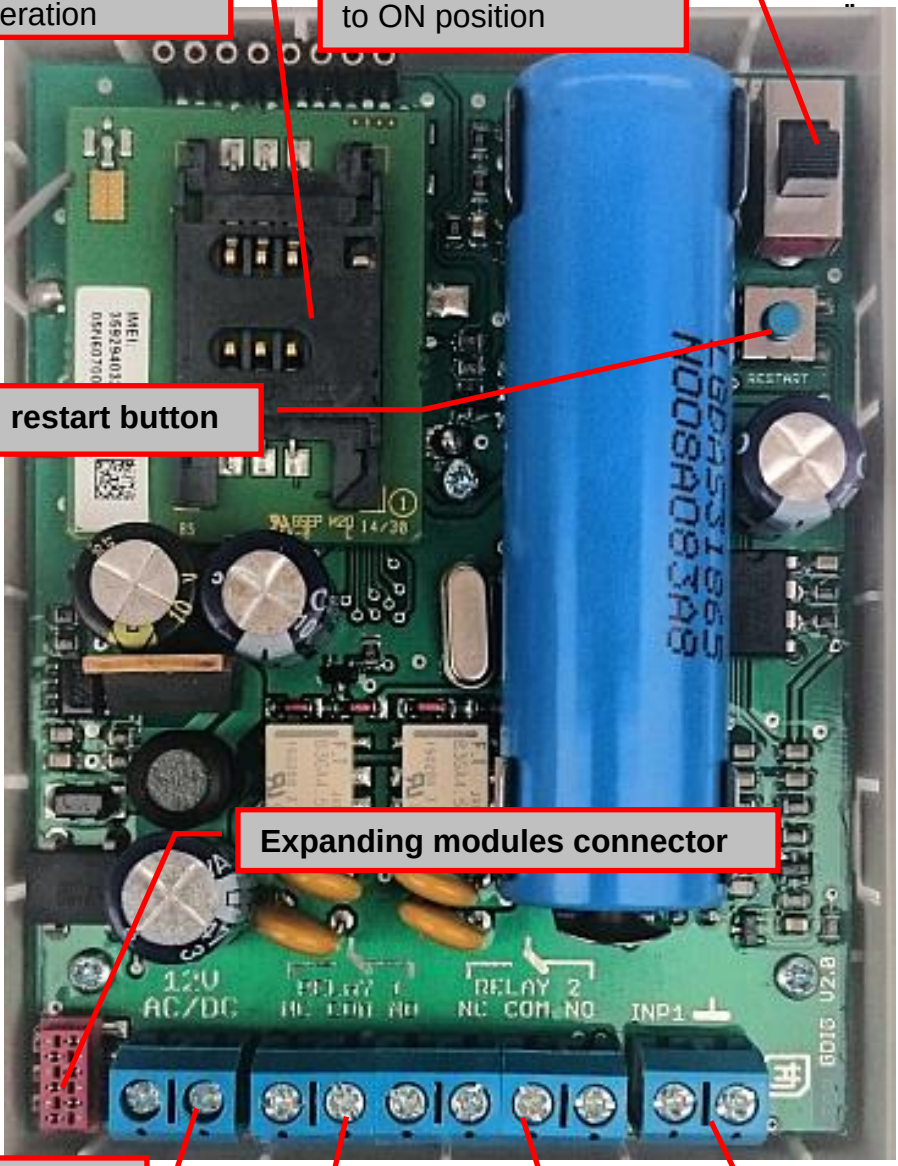


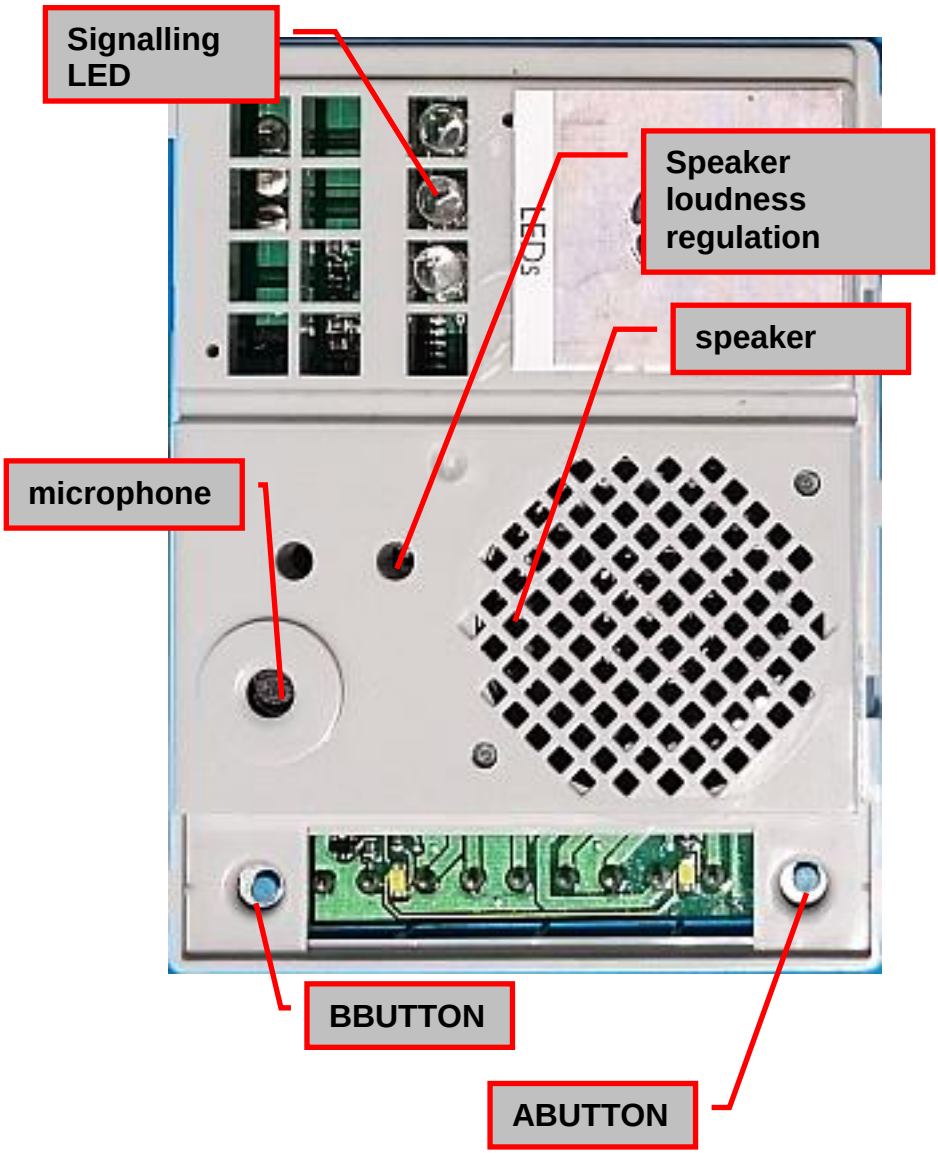
SMB-2



SMB-3

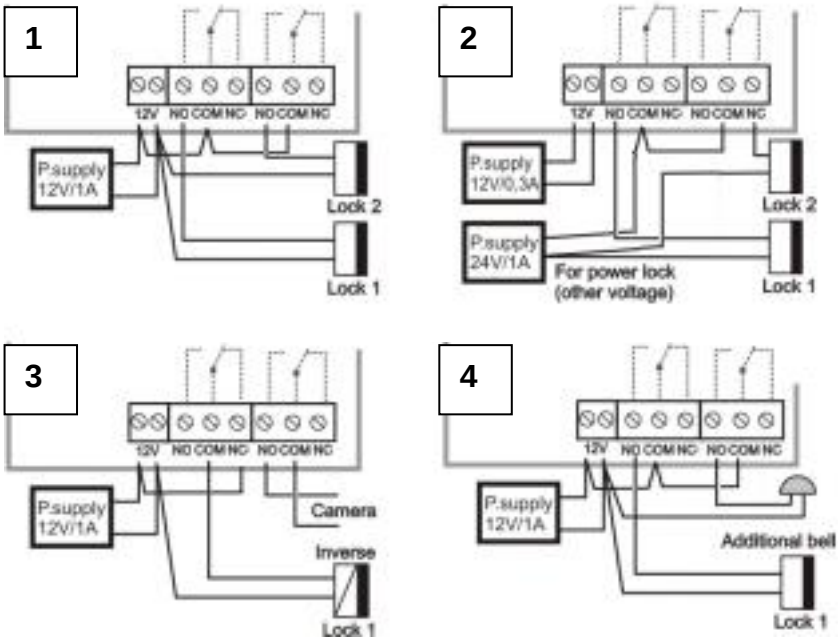
control elements and connection




Signalling LED
Speaker loudness regulation
speaker
microphone
BBUTTON
ABUTTON

Examples of relays connection

1. Basic connection - 2 electrical locks and possibility control 2 doors
2. 2x PSU – possibility to use 2x PSU independently. First for GSM-VB and second for electrical locks.Electrical lock number is connected reversally (emergency exit).
3. Activation of external camera or light.
4. Combination of electrical lock and external bell.



CAUTION! You must not switch direct main voltage 120V or 230V in any case!!! The control electrical appliance you have to use contactor. With the installation, please contact relevant specialist.

Connection of extending modules VBD10(5)-mod

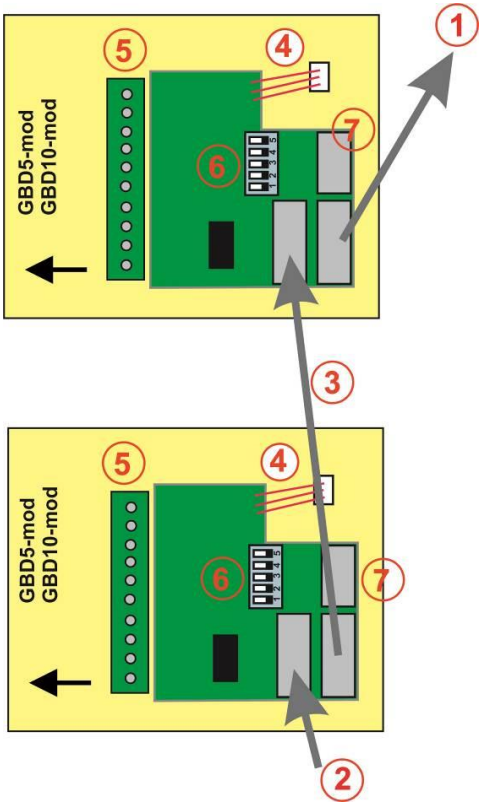
Buttons extending modules are **VBD10-mod** with 10 buttons and **VBD5-mod** with 5 buttons.

Buttons numbering will be explain further but it is done on each button module by DIP switch **(6)**.

PCB board with components VBDx-mod is connected to button module by screw terminal only **(5)** and via 3 wire cable **(4)**.

Connection between modules is provide by flat cables K1. **(1)** is connection to previous module, **(2)** is connection of following button module, **(3)** is connection between button modules (still the same flat cable K1)

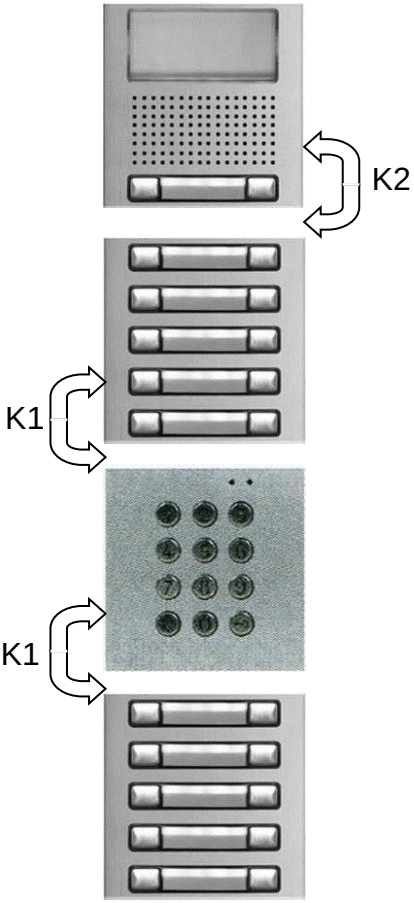
Connector **(7)** one of the module is used for connection to basic module VBG-xx (to connector for expanding modules).



Example of connection VBD10-mod and VBDKey

Connection of each extending modules is done by flat cable K1. Nearest extending module to basic module is connected by cable K2.

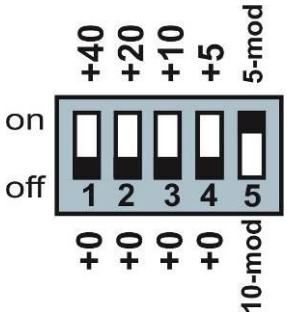
Modules numbering is setup by DIP switches **(6)** of each module. It not depends on connection order of each module but on DIP switch setting. When you use more modules with same DIP switch setting then buttons of those modules will have same numbers and – will be double/triple (according number of same DIP switch setting modules).

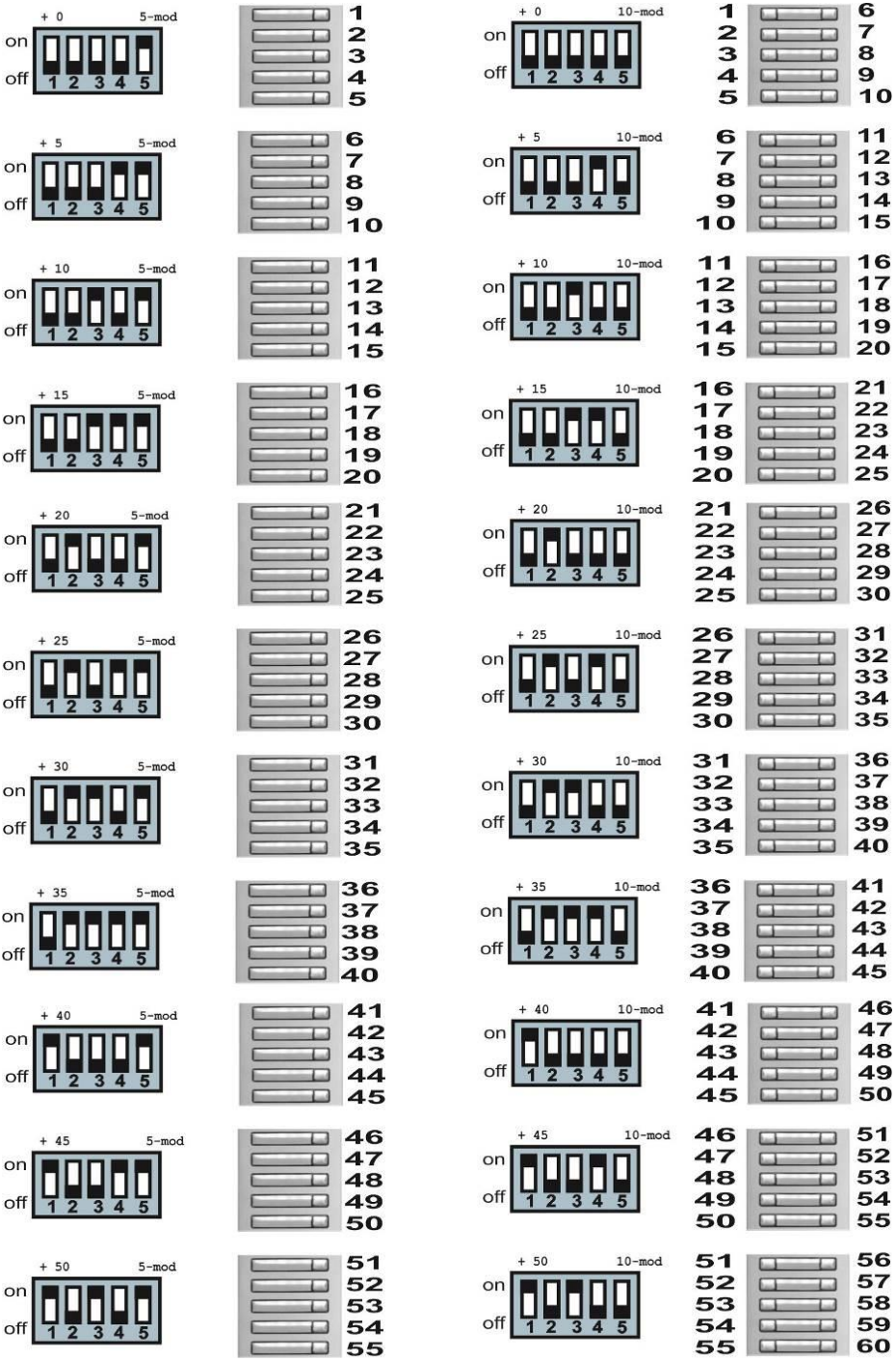


Buttons numbering

Modules button numbering **depends on DIP switch setting only**. Button name is allways describe by alphabetic B (button), button number (via button numbering) and after dash by order marking of phone number assigned to button. For example:
B1-1 is mark of phone number for button 1 which will be dialled as first in order (etc.. immediatelly after button press)
B1-2 is mark of phone number for button 1 which will be dialled when number B1-1 will be busy, not reachable or call is not accepted.
Buttons of basic module are marked ABUTTON (right button) and BBUTTON (left button) after which follow again order in dialling. For example:
ABUTTON1 is mark of phone number for button 1of basic module which will be dialled as first in order (etc.. immediatelly after button press).

DIP switch(6) setting on button module.
each DIP switch positions have following sense:
DIP 1 – 4 = setting of previous buttons number of extending modules
DIP 5 = itself module setting (if front panel has 5 or 10 buttons)




+ 0
5-mod
on
off
1 2 3 4 5
1
2
3
4
5
+ 5
5-mod
on
off
1 2 3 4 5
6
7
8
9
10
+ 10
5-mod
on
off
1 2 3 4 5
11
12
13
14
15
+ 15
5-mod
on
off
1 2 3 4 5
16
17
18
19
20
+ 20
5-mod
on
off
1 2 3 4 5
21
22
23
24
25
+ 25
5-mod
on
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1 2 3 4 5
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+ 30
5-mod
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+ 35
5-mod
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1 2 3 4 5
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+ 40
5-mod
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1 2 3 4 5
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+ 45
5-mod
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1 2 3 4 5
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+ 50
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55
+ 0
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+ 5
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+ 25
10-mod
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+ 40
10-mod
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48
49
50
+ 45
10-mod
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off
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+ 50
10-mod
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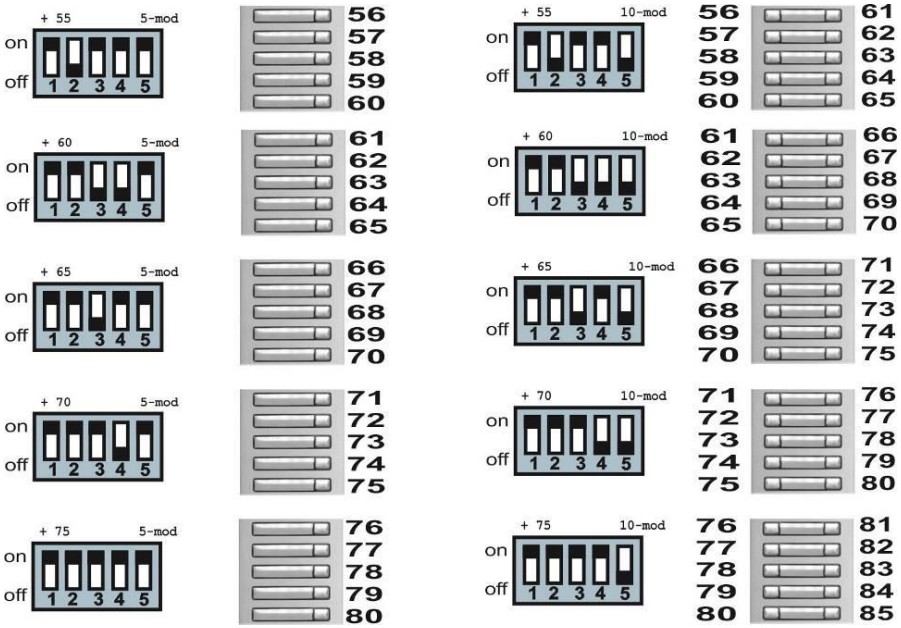
60

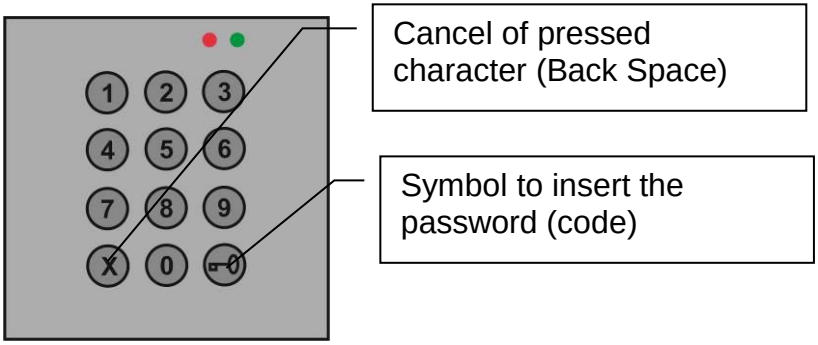


Modules numbering is on picture. In left part are modules with 5 buttons VBD5-mod and in right part are moduleswith 10 buttons VBD10-mod.

The module with desired number you find on this picture and next on the left is combination of DIP switch (6)**, which you have to setup on module!**

Keypad VBDKey connection

Keypad modul is connected by the same flat cable as button modules VBD10(5)-mod



Dial or memory number is perform by progressive pressing of number buttons. To insert password for door opening you have to press first button with key symbol To cancel just inserted number press (Back Space).

- Direct numbers dialling – on the keypad you dial numbers like on the phone (max. 24 characters)

- Dial from door phone memory – you dial just number code on keypad = memory adress (max 15 characters). There is saved up to 7 phone numbers for progressive dialling (similiary as for buttons). Memory mark is allways M after follow number code of memory (you dial on keypad) then dash with order number. For example M1234-1 is marking of first phone number which will be dialled after pressing memory 1234 from keypad.

When you connect two keypads into systém then functionality will be the same.

Basic modul signalling on front panel

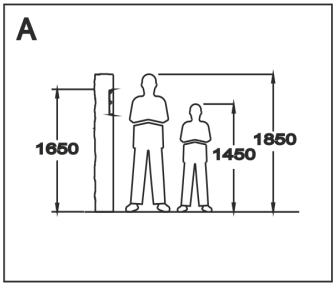
mechanical front panel allows in basic modul window LED signalling of door phone status.This signalling follow requirement of handicap law.

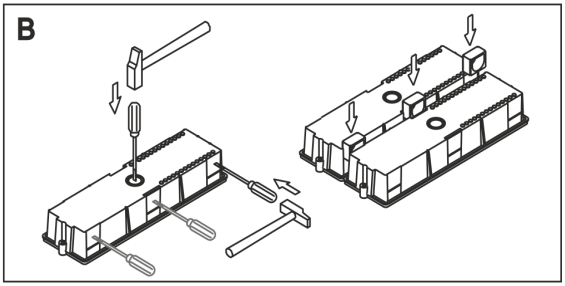
Bell symbol (red) – ringing during reaching call party

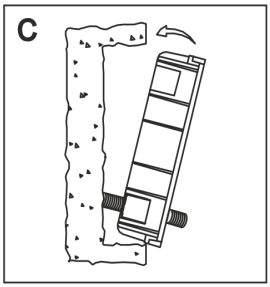
Handset symbol (blue) – call picked up (speach)

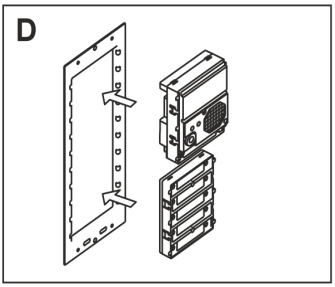
Open door symbol (green) – various relay is activated (door opening)

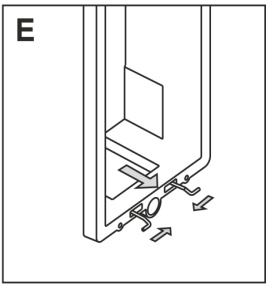
Installation

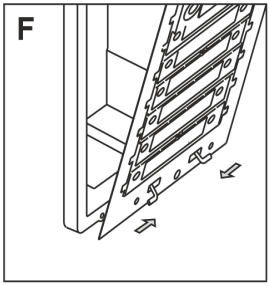


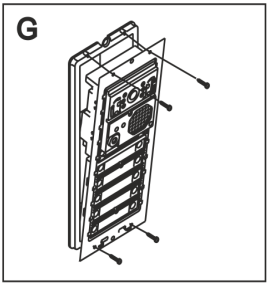


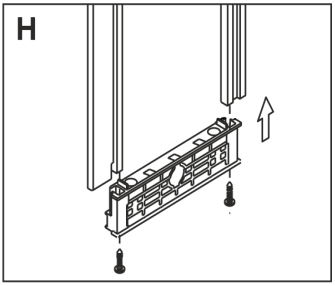


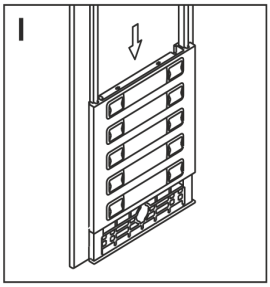


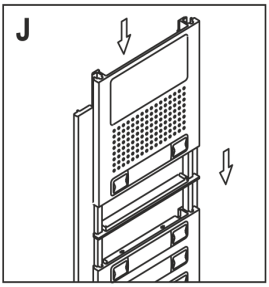


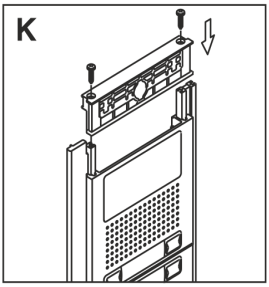












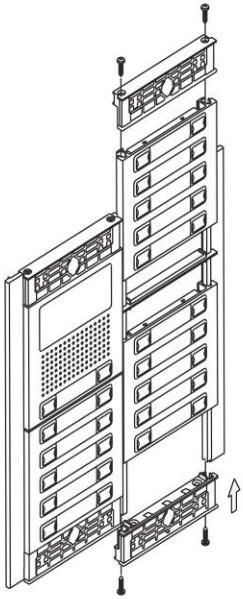
Mounting process:

A. Preparation of mounting holes in the wall – recommended height is about 160cm from ground. Dimension of holes depends on number of modules and here we mention dimensions for 1,2 and 3 modules (basic mounting boxes). The bigger sets are completed from those boxes by their combination (under or next each other).

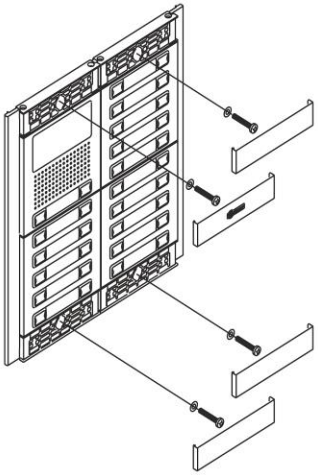
Modules	**1**	**2**	**3**
Height mm	**140**	**257**	**374**
Width mm	**125**	**125**	**125**
Depth mm	**56**	**56**	**56**

B. Peparation of mounting box for cable and mutual connection of mounting boxes
C. Mounting box fixing into hole in the wall
D. Inserting of each modules into into fixing frame
E. Inserting of spring to bottom part of mounting box
F. Inserting of fixing frame into spring in mounting box
G. Installing of fixing frame to mounting box by 4 screws (supplied)
H. Completing of design frame – firstly screw up side rails with bottom part
I. Into design frame insert front panels of each modules
J. Last modul (modul on top) is slide into design frame
K. At the end screw up top part of design frame into side rails
L. This complete as set is on picture (H+I+J+K) for further set into next mounting box
M. Last step is put covers on design frame

L



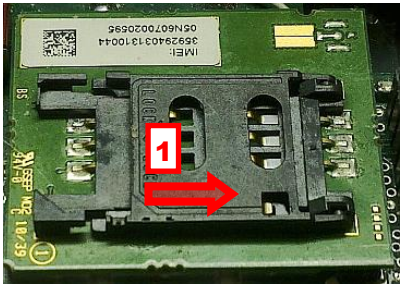
M



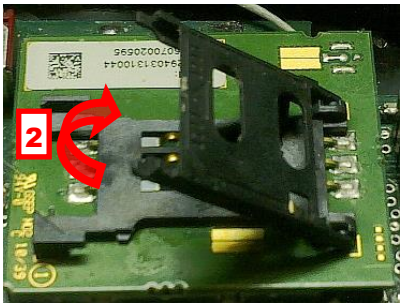
Start operation

1. connect antenna and insert the SIM

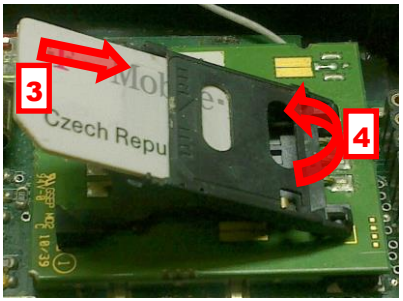
we recommend use SIM without PIN. When is not possible setup PIN1234.



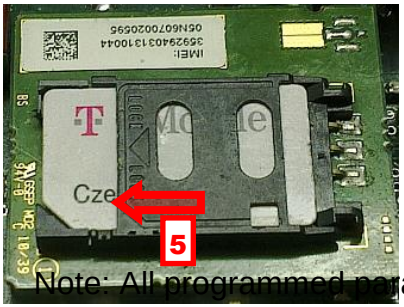
by shift you release SIM holder from lock (1).



lift up the holder (2).



Insert the SIM in correct direction (3) into holder. Replace the SIM holder (4).



By shift locked up the SIM holder (5)

Note: All programmed parametres are saved on SIM card. The SIM you can insert to GSM-VB already preprogrammed or

setup GSM-VB after switching ON via bellow descriped procedures.

When you want to use call reject (ringing) then ask GSM operator to deactivate your voice mail on used SIM card!

SIM card preprogramm

1. SIM which you will use in GSM-VB insert to various mobile phone.
2. When SIM card has a PIN cancel it (or setup PIN 1234)
3. When you want GSM-VB setup remotely save on the SIM card phone number from which you want make configuration under name ADMIN1
4. Save phone number on the SIM card which should be dialled after pressing of right button (A) under name „ABUTTON1“.
5. When you have GSM-VB with 2 buttons save on the SIM card also phone number which will be dialled after pressing of left button (B) under name „BBUTTON1“.
6. When you want automatic progressive dial of next numbers in order (when first number is busy or not reachable) save appropriatte numbers under names ABUTTON2 to 7 and BBUTTON2 to 7
7. Similiarry you can programm further buttons and setting all other parametres (via table at the end of manual)

Saving of phone numbers on the SIM card is different on different type of mobile phones. **Please make sure that saved phone numbers are saved on the SIM card and not to internal mobile phone memory!**

2. Switch ON GSM-VB

When you have connected required wires (relays, locks,etc...) CAUTION for antenna, connect power supply. Red LED will light up and after few seconds start flashing yellow LED (via table). The GSM-VB by tones eventually by voice signalling SIM card reading, logging to GSM network and readiness for operation (via table).

When you have preprogrammed SIM you can try first connection – press button. The GSM-VB must dial programmed number under button. When SIM is not programmed firstly programm it (via following item) and then try connection (under buttons are not programmed any numbers – GSM-VB can call nowhere). After call establishement you can correct speaker loudness. Close the cover and screw up.

3. programm GSM-VB parametres

You can programm in switch on GSM-VB parametres by 2 ways. By SMS or by configuration programm via USB port by Computer.

A) Parametres setting by SMS.

Due security reasons parametres of GSM-VB is possible setup from numbers saved on the SIM card under names ADMIN1 to ADMIN9.
SMS are allways written by BIG LETTERS!
Each SMS elements are allways splited by space (words). First word is allways command. Further word (s) is one or more parametres.

Example: **INIT ADMIN1 +420123456789**

All commands are in approprite table in manual further.

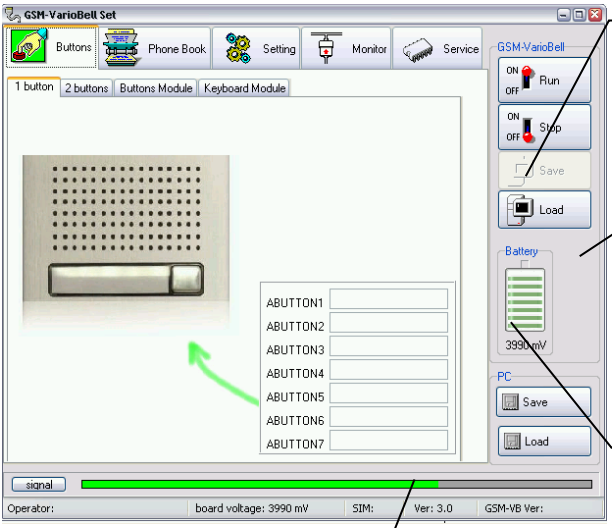
1. During first setting when SIM doesnt contents any ADMINx name is neccessary such number insert to SIM by SMS with command INIT. SMS you can send from various number. When SIM already contents even one number under name ADMINx the command is ignored.
2. When you need control relay eventually setup GSM-VB from next ADMIN numbers perform following: from mobile phone with ADMINx number send progressivelly SMS to GSM-VB with numbers of next ADMINx in SMS format: WRITE ADMIN2 +420xxxxxxxxx (WRITE ADMIN3… etc.)
3. From mobile phone with numbers ADMINx send progressively SMS to GSM-VB with numbers which should be dial after button press, SMS format: WRITE ABUTTON1 +420xxxxxxxxx (WRITE BBUTTON1… etc..)
4. Up your needs send next SMS with other parametres for opening by ringing, SMS alarm sending , etc..
5. Setup parametres GSM-VB (via table). Parametres you can setup individually for each parametr appropriate SMS. When you need setup more parametres simoultaneously we recommend use SMS for batch setting. By SMS „READ PAR“ read firstly current setting to your mobile.
6. By editor of SMS messages change at received SMS word READ to WRITE as same as adjust parametres up your needs. Such adjusted SMS send back to GSM-VB as reply. The parametres will be setup.

A) Parametres setting by PC and programm GSMVBellset

1. Connect MiniUSB cable to PC as same as to programming module – green LED must light on at the module. During first usage USB driver might be installed. USB driver is available at attached CD or website .
2. Insert connector of programing modul into GSM-VB (via picture). On programming modul must light on red LED (It is flashing same way like yellow LED on GSM-VB)

3. Run programm GSMVBellset and setup appropriate COM port
4. Programm controls GSM-VB connection. After that display GSM signal strength and voltage on GDI (back up ACU). Now you can programm .

Mode monitor



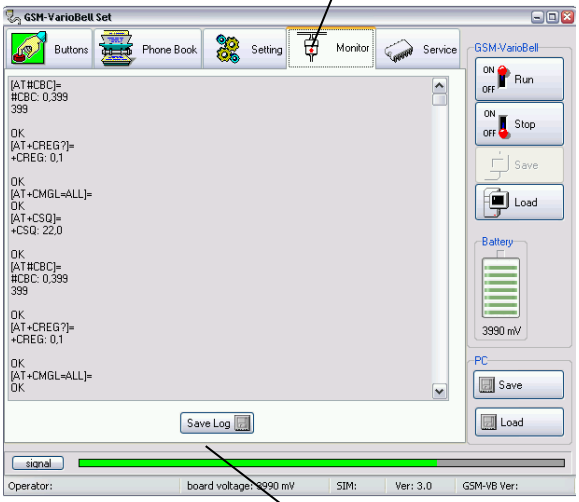
To setup parametres stop programm running in GSM-VB.
Do not press to operation monitor! You stop GSM-VB operation!

Indication of seriál line operation

After connection establishment with GSM-VB will show indication of voltage in GSM-VB

After connection establishment with GSM-VB will show indication of GSM signal strength

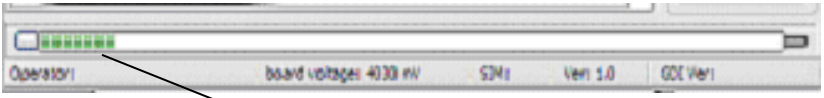
After click to monitor button is possible monitor operation in GSM-VB (when operation is not stoped by button STOP)



Report saving from monitor to file (for support purposes – report sending)

Mode programming

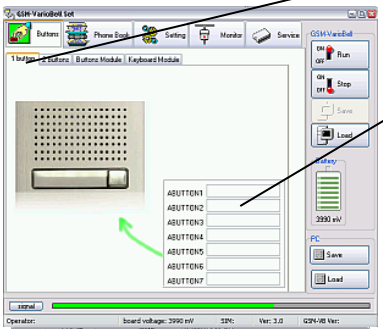
After button STOP pressing programm sends to GSM-VB command to STOP and wait for GSM-VB feedback (via picture)



Waiting for GSM-VB feedback

folder Buttons

It is design to programm phone numbers under each button and for coopeartion with keypad (insert phone numbers to memory and insert codes)



One button folder

Field to programm up to 7 phone numbers for one button

Folder for two buttons

Field to programm up to 7 phone numbers for right button

Saving of all programmed numbers and parametres to GSM-VB

Reading of all programmed numbers and parametres from GSM-VB

Saving of all programmed numbers and parametres to PC

Reading of all programmed numbers and parametres from PC

Programm version and fw version of GSM-VB

SIM card capacity

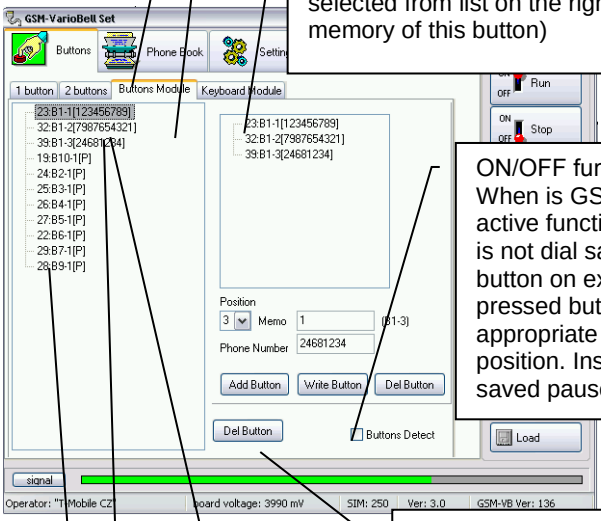
GSM operator where is GSM-VB registrated

Field to programm up to 7 phone numbers for left button

Folder for expanding button modules

List of all memories and phone numbers of each buttons saved on SIM card. List is arranged according buttons.

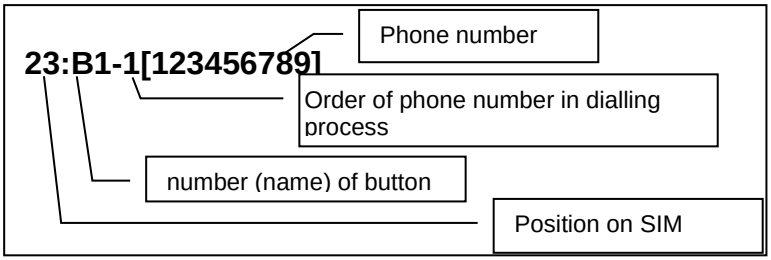
List of all memories and phone numbers for button selected from list on the right (by click on various memory of this button)



ON/OFF function „Buttons Detect". When is GSM-VB switched ON with active function "Buttons Detect" then is not dial saved number under button on expanding modul when is pressed but on the SIM is saved appropriate name for first button position. Instead of phone number is saved pause ("P")

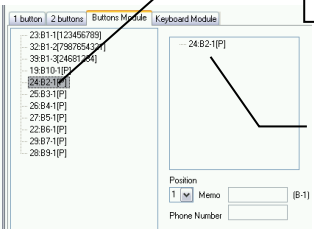
Erase selected memory button from SIM

By grey colour is marked selected memory



Result of function „Buttons Detect" for expanding modul with setup buttons from 1 to 10. Button B1 is busy already by 3 progressively dialling phone numbers.

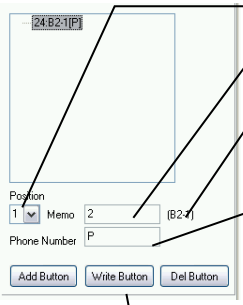
Edit of selected number (insert number instead of „P“)



Select button to edit

List of edit with all appropriates phone numbers saved on SIM for this button (here just one record – P)

After click to selected memory (here just one – B2-1) will occur in edit fields each elements of record (via description of previous page)



Order in dialling

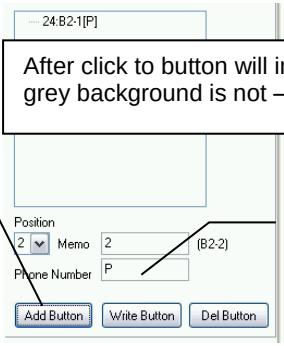
Button number

Button name

Phone number - instead „P“ write phone number which should be dial.

Record of memory button to SIM

Adding of memory (next dialling number in order for button from previous example)



After click to button will increase order number in dialling. Please note the grey background is not – not edit, phone number is added

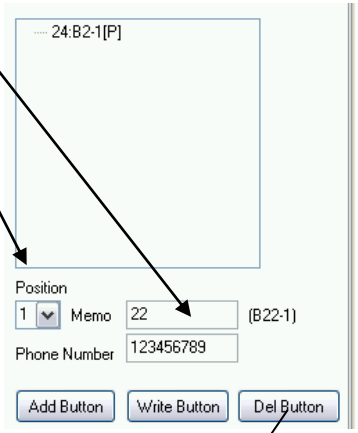
To field „Phone Number“ is copy phone number from previous position (for selected button) – here „P“. Continue like in previous example.

Adding of button (function for automatic button detect wasnt used)

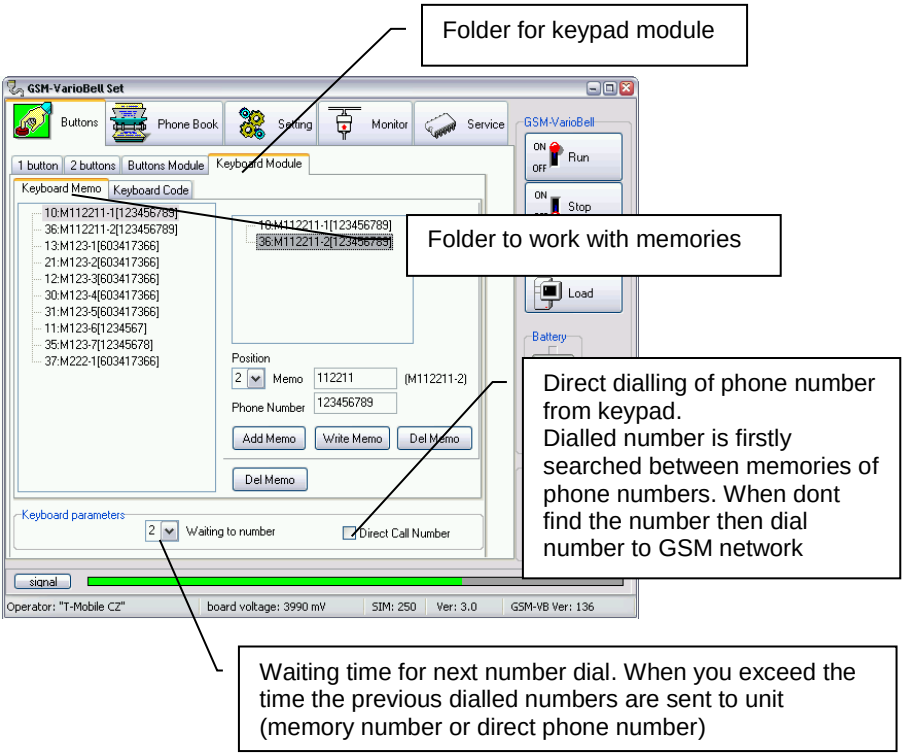
Process similiary like in previous example (click on „Add Button“). BUT is neccessary:

i. setup required button number
ii. setup required order of phone number in dialling

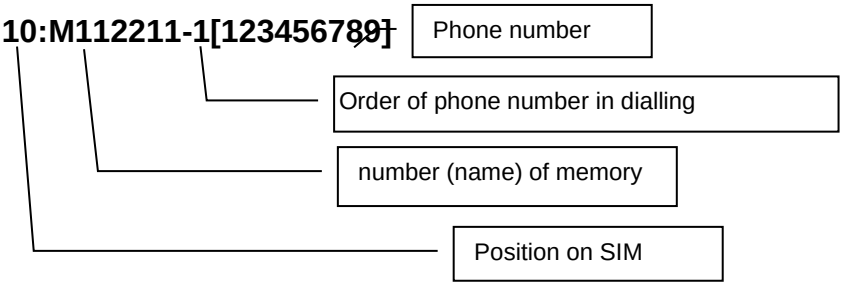
Those parametres in previous example (adding number to order for preselected button) have been created automatically.

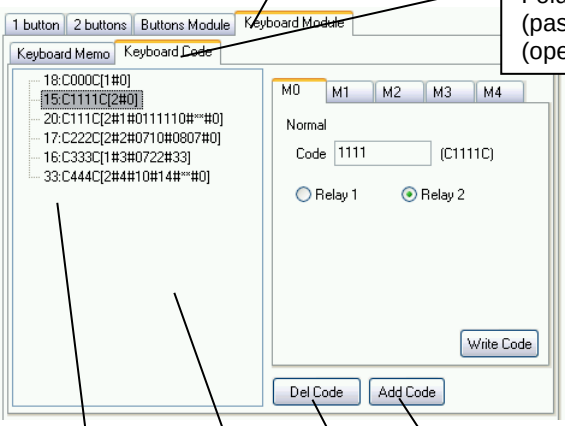


Erase of selected memory from SIM
Function is the same like for erasing in main list. The selection is done in list of selected number



Work with phone numbers memories saved under selected code is the same like work with buttons. Instead of marking B (button)is used marking M (memory). For example:
M1234-1 is marking of memory where is saved phone number which is dialled as first after dialling code 1234 on keypad.





Folder for keypad module

Folder for work with codes (passwords) for relay activation (opening)

Correction system, erasing and inserting new passwords is similiar as in previous. Work with codes will be descriped in follow text.

Adding code

Erasing selected code

List of codes saved on SIM

Position on SIM

33:C444C[2#4#10#14##0]**

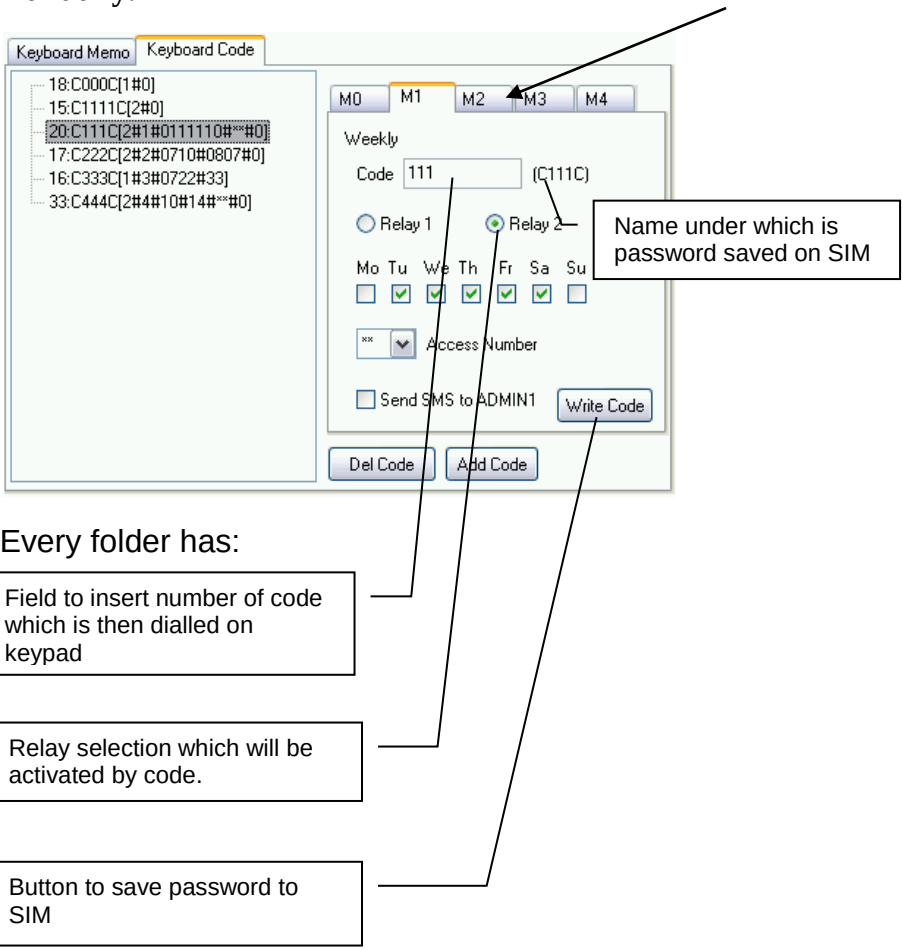
Code parametres – via description at command table

Name under which is code (444) saved on SIM

Work with codes (passwords)

5 modes of codes (M0-M4)

After code selection from list will be automatically setup appropriate folder. When you insert new password you have to select appropriate folder (according required code features) manually.

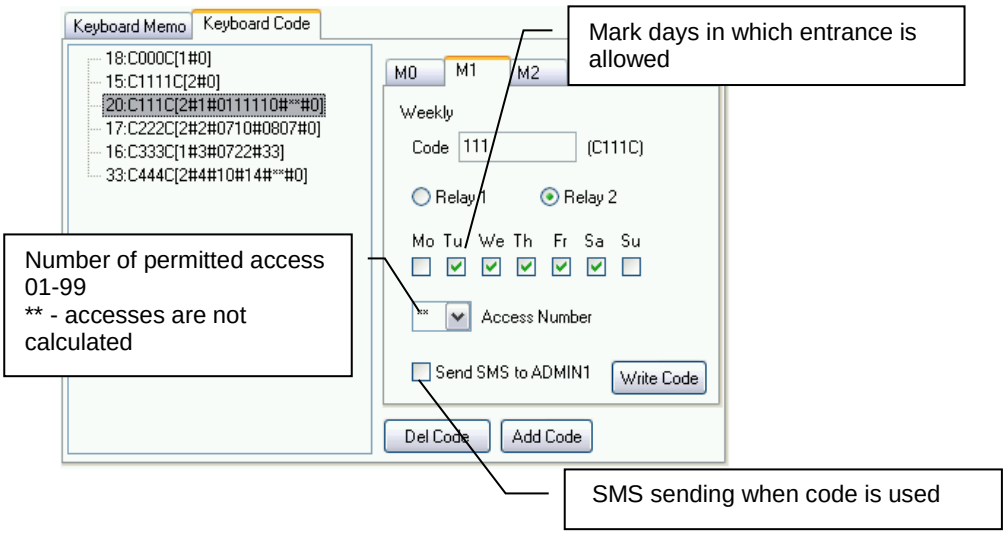


M0

Simpliest mode – selected relay will close after inserted code from keypad for preprogrammed time. (via parametr time of relay activation further in manual)

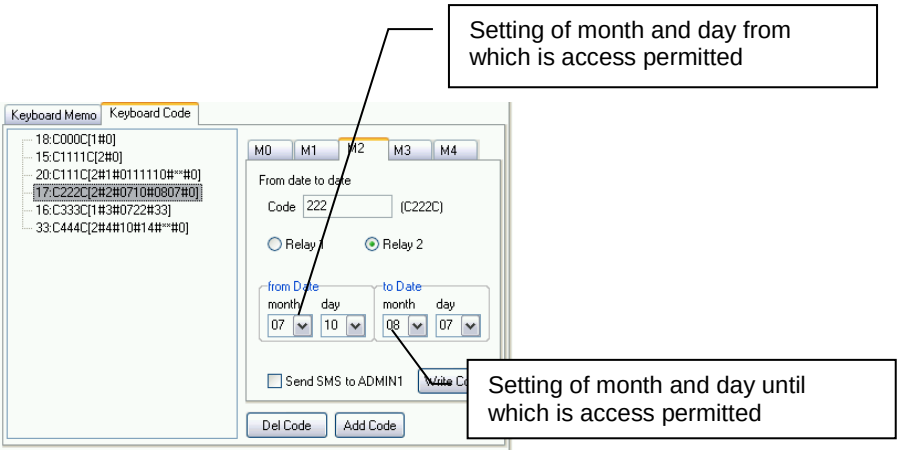
M1

After code insert the relay close in preprogrammed days of week only.The GSM-VB might also calculate number of used codes and when number exceed preprogrammed value (for example number of prepaid entrances) the code is refused. Code using might be announced by sending SMS with date, time and used codes.



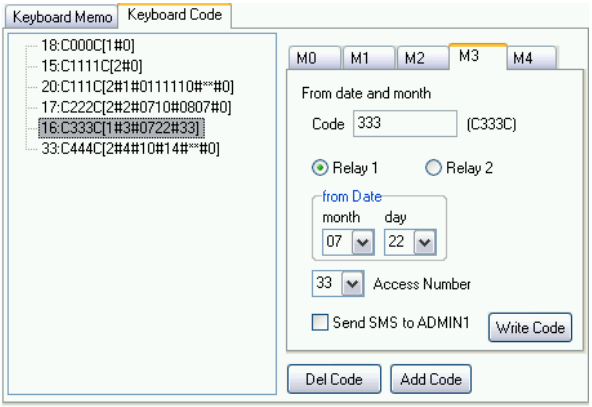
M2

After inserting the code relay is activated in range of setup dates (included). Code using might be announced by sending SMS with date, time and used codes



M3

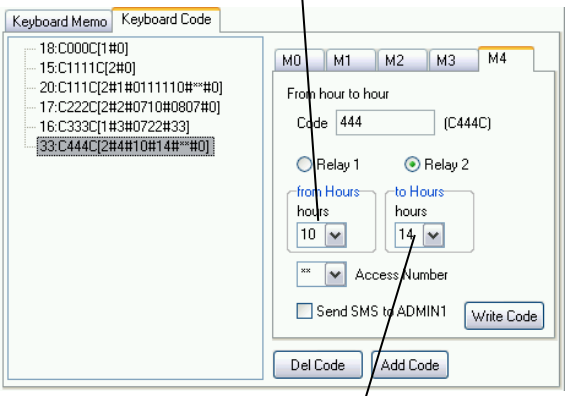
After code insert the relay is activated from setup date. The GSM-VB might also calculate number of used codes and when number exceed preprogrammed value (for example number of prepaid entrances) the code is refused. Code using might be announced by sending SMS with date, time and used codes.



M4

After inserting the code relay is activated in range of setup hours (working time). The GSM-VB might also calculate number of used codes and when number exceed preprogrammed value (for example number of prepaid entrances) the code is refused. Code using might be announced by sending SMS with date, time and used codes.

Setting of hour from which is access permitted

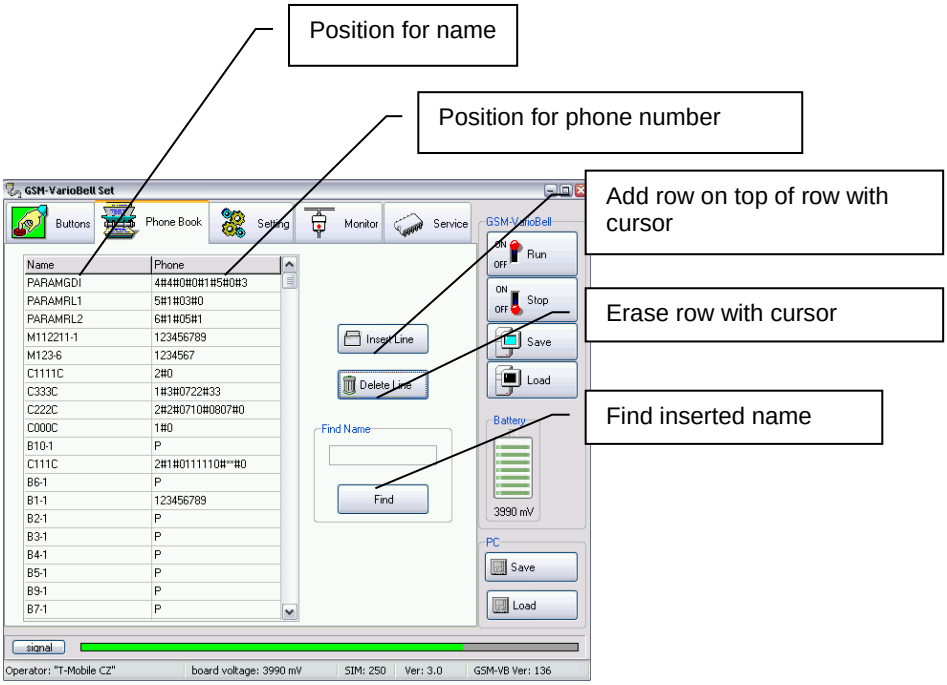


Setting of hour until which is access permitted

Caution: Tu use relay activating by codes (passwords) do not forget setup appropriate relay mode (via folder relay).

Folder Phone Book

Phone book of authorised numbers to activate relay by ringing and automatic calls receiving.

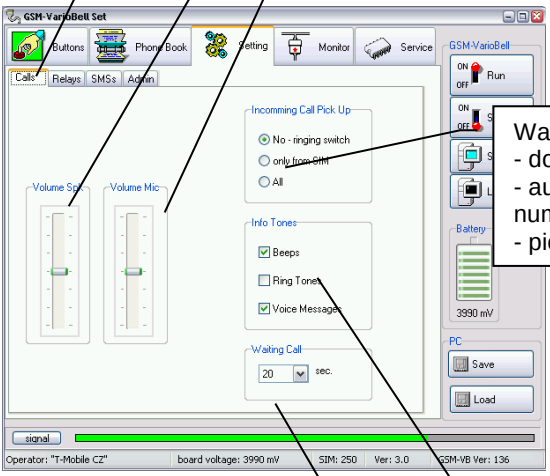


Folder Setting – parametres setting

Folder Calls

Setting loudness of speaker

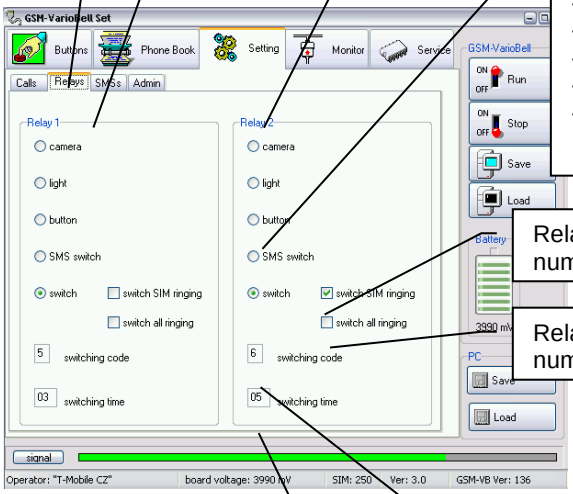
Setting loudnes of microphone



Way of calls receiving:
- do not receive (open by ringing)
- automatically pick up calls from numbers from list only
- pick up all calls

Signalling
- inform tones of GSM-VB
- incoming call ringing
- voice signalling

Waiting Call
Waiting for dialling next number from list



Folder relay

Setting parametres for relay 1

Setting parametres for relay 2

Relay modes:
- camera
- light
- button
- control by SMS
- control by code or ringing

Relay control by ringing from numbers saved on SIM onlv

Relay control by ringing from any number

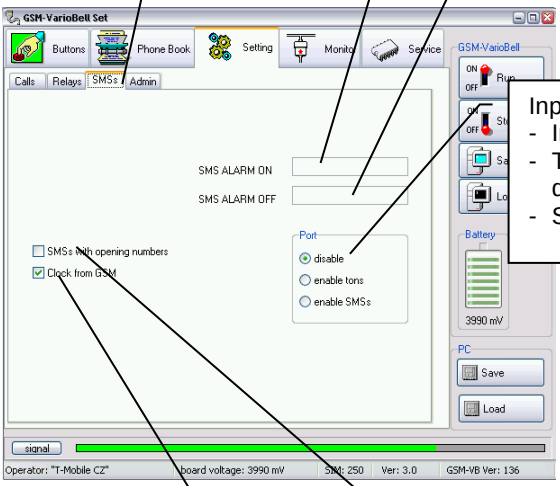
DTMF code to activate relay during call

Time of relay activation

Folder SMS

Number where is sent SMS „ALARM ON" when input is activated

Number where is sent SMS „ALARM OFF" when input is deactivated

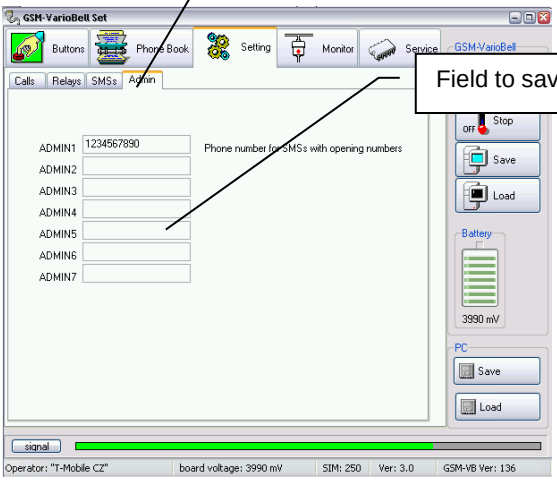


Input mode:
- Input deactivated
- Tones when input is activated during a call (opening signalling)
- SMS sending

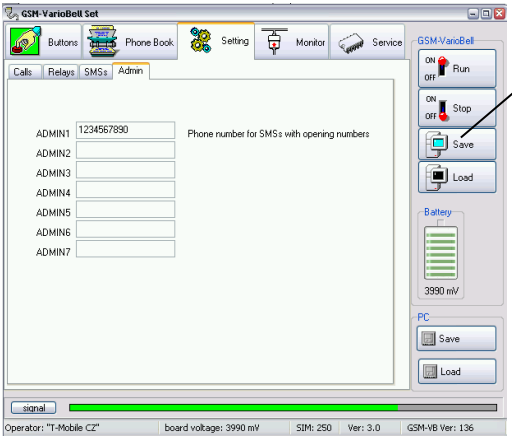
SMS sending to ADMIN1 with list of numbers from which was opened by ringing.

Activation of time setup from GSM network

Folder ADMIN numbers setting

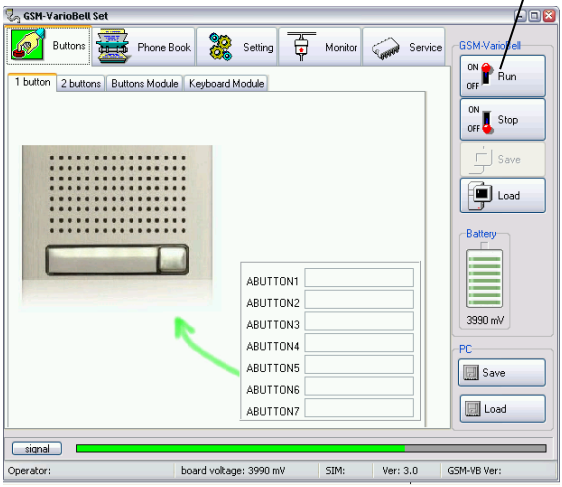


Field to save up to 7 ADMIN numbers

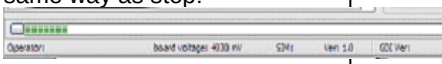


When all neccessary is setup then save all by button „Save“ to GSM-VB. (when you did setup buttons ,passwords or memories in extending modules – they are saved automatically when you press button „Write…“.

Return from programming mode to monitor mode (restart of GSM-VB)



For return to monitor mode (start of GSM-VB) click on button „Run“. Programm detects start of GSM-VB the same way as stop:



GSM-VB behaves after restart the same way as during power supply connection (tones, eventually voice info).

Table of commands for SMS

	Příkaz (SMS)	Funkce	Def.
SMS is possible send from ADMINx numbers only	READ STAT	GSM-VB status reading (version, 4as, status, rel0 etc.)	
	READ PAR	Reading of all set parametres	
	READ JMENO	Reading of phone number for NAME	
	CLR JMENO	Erase of phone number for NAME	
	INIT ADMIN1 +420cc…c	First setting of GSM-VB – parametres possible setup from number ADMIN1 +420cc..c	
	SET REL1 ON	Relay 1 - ON	
	SET REL1 OFF	Relay 1 - OFF	
	SET REL1 ON xx	Relay 1 – ON for xx minutes (xx=00 -99)	
	SET REL2 ON	Relay 2 - ON	
	SET REL2 OFF	Relay 2 - OFF	
	SET REL2 ON xx	Relay 2 – ON for xx minutes (xx=00 -99)	
	WRITE JMENO +420cc…c	Write phone number for NAME	
	WRITE PAR VOLIN:x	Write Microphone loudness [x=1-7]	4
	WRITE PAR VOLOUT:x	Write speaker loudness [x=1-7]	4
	WRITE PAR INCALL:x	Proccessing of incoming call: x: 0 – calls refused (ringing) 1- Calls picked up from SIM only 2 – all calls picked up	0
	WRITE PAR WRCALL:x	Sending out SMS with numbers which opened the door	0

		0 – OFF 1 - ON	
SMS is possible send from ADMINx numbers only	WRITE PAR TMGSM:x	Setup time according GSM network x: 0 – OFF 1 - ON	1
	WRITE PAR TONE:x	Setting of sound signalling x: 0 - OFF 1 – ON with service tones 2 – ON ringing of incoming call 4 – ON with voice signalling And combination – for example 7 – all is ON	5
	WRITE PAR INPMOD:x	Input mode x=0 – OFF x=1 – beeps to call (indication of open) x=2 – during connection/disconnection send SMS	0
	WRITE PAR WAIT:xx	Waiting to dial next number from list xx – 10 to 90 sec (by 10)	2
	WRITE PAR RL1COD:y	Code to activate relay1 during call y= 0-9	5
	WRITE PAR RL1MOD:x	Relay 1 modes x=0 – control by SMS x=1 – mode switch (by ringing from numbers on SIM or by code) x=2 – camera mode (close by pick up, open by hang up) x=3 – lighting mode (close by pick up-stay close for „time activation“ after hang up	1

		x=4 – close for „activation time“ after button press x=5 – extra switch mode (by ringing from any number or by code)	
	WRITE PAR RL1TMON:yy	Activation time for relay 1 after ringing or by code activation yy seconds yy=00-99	03
SMS is possible send from ADMINx numbers only	WRITE PAR RL1RING:x	Relay 1 activation by ringing x=0 – OFF x=1 - ON	1
	WRITE PAR RL2COD:y	Code to activate relay 2 during call y= 0-9	6
	WRITE PAR RL2MOD:x	Relay 2 modes x=0 – control by SMS x=1 – mode switch (by ringing from numbers on SIM or by code) x=2 – camera mode (close by pick up, open by hang up) x=3 – lighting mode (close by pick up-stay close for „time activation“ after hang up x=4 – close for „activation time“ after button press x=5 – extra switch mode (by ringing from any number or by code)	0
	WRITE PAR RL2TMON:yy	Activation time for relay 2 after ringing or by code activation yy seconds yy=00-99	05
	WRITE PAR RL2RING:x	Relay 2 activation by ringing x=0 – OFF x=1 - ON	0
	WRITE PAR WAITBUF:y	Time to wait for pressing next button	2

		y sec y= 1-9	
	WRITE PAR DDIAL:x	permitt/ prohibit direct dialling from keypad: x=0 – prohibit x=1 – permitted	0
	WRITE ALARMON +420cc..c	Write number for SMS „ALARM ON“ (input grounding)	
	WRITE ALARMOFF +420cc..c	Write number for SMS „ALARM OFF“ (input disconnect)	
SMS lze posílat pouze z čísel ADMINx	CAL AT+CSQ	GSM signal strength level	
	CAL AT+CPBR=x	Finding out number saved on position x	
	CAL AT+CCLK=“<time>“	Setup time in GSM-VB to <time> format <time>= yy/MM/dd,hh:mm:ss±zz yy – year (00-99) MM – month (01-12) dd – day (01-31) hh – hours (00-23) mm – minutes (00 – 59) ss – seconds (00 – 59) ±zz – time zone (-47..+48) hours	

Commands type:

READ – command to read parametres and phone numbers from SIM. It means also reading of phone numbers saved under buttons (for example READ B1-1), in memories (for example READ M1234-1), codes setting (for example READ C123C) or parametres of GSM-VB in internal format (READ PARGDI)

CLR - command to erase phone numbers from SIM **CAUTION!** When you use SMS to erase numbers it must stay in GSM-VB at least one ADMINx number– otherwise remotely you cant programm (neccessary to make restart - initialization).

INIT – Initialization . During first setting when SIM is empty – no ADMINx names is neccessary saved such number to SIM by SMS with command INIT. SMS is possible send out from any number. When SIM has already at least one number under ADMINx name the command is not executed.

WRITE – command to save parametres and phone numbers to SIM – also phone numbers under buttons (for example WRITE B1-1 123456789), in memories (for example WRITE M1234-1 123456789), codes setting (for example WRITE C123C 2#0) or parametres GSM-VB in internal format.

CAL - after CAL command you can put any AT command of used GSM modul (for example module reset, time setting etc.) . **Those commands usage requires deeper knowledge of system otherwise you can caused non working of the unit!**

Meaning of names saved in phone book

jméno	činnost
ABUTTON1	- this number is called by GSM-VB when button is pressed (right) - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls
ABUTTON2	- this number is called by GSM-VB when number under button ABUTTON1 is not reachable , busy or not pick up the calls - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls
ABUTTON3	- this number is called by GSM-VB when number under button ABUTTON2 is not reachable , busy or not pick up the calls - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls
ABUTTON4	-- this number is called by GSM-VB when number under button ABUTTON3 is not reachable , busy or not pick up the calls - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls
ABUTTON5	-- this number is called by GSM-VB when number under button ABUTTON4 is not reachable , busy or not pick up the calls - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls
ABUTTON6	-- this number is called by GSM-VB when number under button ABUTTON5 is not reachable , busy or not pick up the calls - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls
ABUTTON7	-- this number is called by GSM-VB when number under button ABUTTON6 is not reachable , busy or not pick up the calls - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls

BBUTTON1	- this number is called by GSM-VB when buttonon left is pressed (version with 2 buttons) - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls na číslo
BBUTTON2	-this number is called by GSM-VB when number under button BBUTTON1 is not reachable , busy or not pick up the calls - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls
BBUTTON3	- this number is called by GSM-VB when number under button BBUTTON2 is not reachable , busy or not pick up the calls - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls
BBUTTON4	- this number is called by GSM-VB when number under button BBUTTON3 is not reachable , busy or not pick up the calls - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls
BBUTTON5	-this number is called by GSM-VB when number under button BBUTTON4 is not reachable , busy or not pick up the calls - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls
BBUTTON6	- this number is called by GSM-VB when number under button BBUTTON5 is not reachable , busy or not pick up the calls - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls
BBUTTON7	- this number is called by GSM-VB when number under button BBUTTON6 is not reachable , busy or not pick up the calls - by ringing activate relay 1 and relay 2 - from this number are automatically received the calls

ADMIN2 to ADMIN7	- by ringing activate relay 1 and relay 2 - By SMS activate relay 1 and relay 2 - By SMS read status and numbers in phone book - By SMS edit numbers and names on SIM card - By SMS control other features (AT commands) - By SMS setup parametres - From those numbers are automatically pick up calls
ADMIN1	The same as ADMIN2 to ADMIN7 and moreover: - to this number are sent reports by SMS with list of opening by ringing - to this number is sent SMS with info about low ACU battery level (option)
BXX-Y	Phone number of button BXX (where XX is button number 01 to 85), dialled in order Y (where Y=1 to 7). In case Y>1, this number is called when previous number from line BXX is busy, not reachable or doesnt pick up the call - by ringing activate relay 1 and relay 2 - from number are automatically received the calls
MXXXX-Y	Phone number of memory XXXX (various 10 digits number) dialled from keypad in order Y (where Y=1 to 7). In case Y>1, this number is dialled when previous number from line MXX is busy, not reachable or doesnt pick up call - by ringing activate relay 1 and relay 2 - from number are automatically received the calls
CXXXXC	Code parametres XXXX (XXXX is various 10 digits number) dialled from keypad Mode 0: simple relay closing after code dial A#0 A – relay fro which is code dialled [1,2] Mode 1: relay closed for setup days in week only A#1#CDEFGHI#JJ#K A — relay fro which is code dialled [1,2] C – monday: 1 permitted, 0 prohibitted D - tuesday: 1 permitted, 0 prohibited

	E - wednesday: 1 permitted, 0 prohibited F - thursday: 1 permitted, 0 prohibited G - friday: 1 permitted, 0 prohibited H - saturday: 1 permitted, 0 prohibited I - sunday: 1 permitted, 0 prohibited JJ – number of permitted access 00-99, ** - then number not limited K – when code is used send SMS with date, time and code: 1 permitted, 0 prohibited Mode 2: relay closed in setup range of dates only A#2#CCDD#EEFF#G A – relay fro which is code dialled [1,2] CC – from month [01 – 12, ** - various] DD – from day [01 – 31, ** - various] EE – until month [01 – 12, ** - various] FF – until day [01 – 31, ** - various] G – when code is used send SMS with date, time and code: 1 permitted, 0 prohibited Mode 3: relay closed from setup date A#3#CCDD#EE#F A – relay fro which is code dialled [1,2] CC – from month [01 – 12, ** - various] DD – from day[01 – 31, ** - various] EE – number of permitted access 00-99, ** - then number not limited F – when code is used send SMS with date, time and code: 1 permitted, 0 prohibited Mode 4: relay closed in range of setup hours only A#4#CC#DD#EE#G A – relay fro which is code dialled [1,2] CC – from hour [01 – 24, ** - various] DD – until hour [01 – 24, ** - various] EE – – number of permitted access 00-99, ** then number not limited F – when code is used send SMS with date, time and code: 1 permitted, 0 prohibited
Various name	- by ringing activate relay 1 and relay 2 - from number are automatically received the calls When name will be saved in format CODECXXXXC, when CXXXXC is code saved on SIM (via in table above), will be the same rulls of code for this number for activating by ringing like is written in code

ALARMON	- it is send to this number SMS „ALARM ON“ when input is closed against ground
ALARMOFF	- it is send to this number SMS „ALARM OFF“ when input is opened
VER	- version fw in GSM-VB - informing only- not change!
PARGDI	- GSM-VB parametres A#B#C#D#E#F#G#H (default 4#4#0#0#1#5#0#2) A – microphone sensitivity [1-7] B – speaker loudness [1-7] C – incoming calls: 0 – no calls pick up (closing by ringing) 1 – pick up calls from SIM saved numbers only 2 – pick up all calls D – record who opened by ringing: 0 – off 1 – on E – time setup from GSM network: 0 – off 1 – on F – signalling: 0 – off 1 – tones 2 – ringing of incoming calls 4 – voice signalling Possible all bits combinations – for example all ON = 7 G – input mode: 0 – off 1 – input grounded beeping to call (signalling of opened doors) 2 – SMS during connection/input disconnection H – waiting for dial next number in order Value is in number ten seconds (2 = 20 sec.)
PARRL1	- parametres for relay 1 A#B#CC#D (default 5#1#03#1) A – DTMF code for close relay during call [0-9] B – relay mode: 0 – SMS mode, control by SMS 1 – switch mode , close by ringing from numbers on SIM card or by DTMF code during call 2 – camera mode (close by pick up, open by hang up) 3 – lighting mode (close by pick up, stayed closed for „closing time“ after hang up 4 – button mode, close for „closing time“ after button press 5 – extra switch mode, close by ringing from any number or by DTMF code during call

	CC – closing time [00-99] D – closing of relay by ringing: 0 – off 1 – on
PARRL2	- parametres for relay 2 A#B#CC#D (default 5#1#03#1) A – DTMF code for close relay during call [0-9] B – relay mode: 0 – SMS mode, control by SMS 1 – switch mode , close by ringing from numbers on SIM card or by DTMF code during call 2 – camera mode (close by pick up, open by hang up) 3 – lighting mode (close by pick up, stayed closed for „closing time“ after hang up 4 – button mode, close for „closing time“ after button press 5 – extra switch mode, close by ringing from any number or by DTMF code during call CC – closing time [00-99] D – closing of relay by ringing: 0 – off 1 – on
PARKEY	Keypad parametres A#B (default 2#0) A – waiting time for press of next button [1-9] sec. B – permission/prohibition of phone number direct dialling: 0 – dial OFF 1 – dial ON

The names with numbers might be saved into phone book on SIM card via any mobile phone (process according manual of appropriate mobile phone). **The names ABUTTONx, BBUTTONx, ADMINx, ALARMON, ALARMOFF, PARGDI, PARRL1, PARRL2, button names (B…), memory names (M…), code names(C….C) must be written by BIG LETTERS. Between letters is not a space!**

Answer of GSM-VB to SMS „READ STAT“

```
READ STATUS:
VER: 101
BATTERY:4030mV
TIME: "00/01/01,00:01:55"
OPER: T-Mobile CZ
INP:1
RL1:0
RL1:0
```

Answer of GSM-VB to SMS „READ PAR“

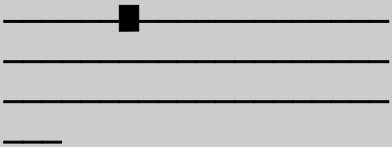
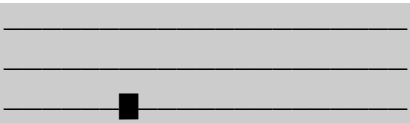
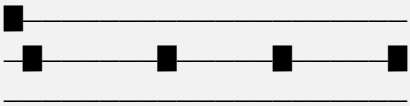
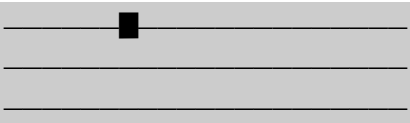
```
READ PAR:
VOLIN:4
VOLOUT:4
INCALL:0
WRCALL:1
TMGSM:1
TONE:5
INPMOD:2
WAIT:20
RL1COD:5
RL1MOD:4
RL1TMON:03
RL1RING:1
RL2COD:6
RL2MOD:1
RL2TMON:05
RL2RING:1
WAITBUF:2
DDIAL:0
```

SMS example to GSM-VB parametres setup

```
WRITE PAR:
VOLIN:1
TONE:7
INPMOD:2
RL1COD:2
```

Tones GSM-VB

Except ordinary tones and signalling of GSM communication (ringing tone, busy tone, different operator messages), has GSM-VB own signalling (via setup possibilities).

	High tone- notification GSM-VB identified not registration to GSM netwo rk (antenna disconnected) wrong PIN,, dialling n umber to GSM network etc..)
	Middle high tone – control action GSM-VB read SIM, registrate to GSM network, me asure voltage, reply to SMS etc...
	Low tone – error GSM-VBidentify error (for example low voltage, n o reaction of GSM for command,. It might reacts by unit restart
	High tone follows by middle tones repeated after cca 5 sec start and initializationof GSM-VB (registration to G SM network, SIM reading etc...)
	Hight tone repeated GSM-VB identified disconnection fromGSM netwo rk (antenna disconnected, wrong PIN....)
	Middle high tone repeated during holding button time, then high tone Detection of button press, dialling of programmed number
	High tone, once after dialling number to GSM called party found

LED signalling

Yellow LED on PCB		**Do not light** **GSM-VB is switch OFF**
		Flashing space and light the same length GSM-VB is not logged to GSM network
		Short flashing in 2 sec. period GSM-VB is logged to GSM network
		Permanent light GSM-VB is calling or being in connection or it is in programming mode
 RED LED		Do not light Stand by or GSM-VB is switched OFF
		Permanent light Incoming call ringing
 Blue LED		Do not light Stand by or GSM-VB is switched OFF
		Permanent light call established - call is running
 Green LED		Do not light Stand by or GSM-VB is switched OFF
		Permanent light during relay activation activating relay by code, ringing, SMS or after switch ON/restart of GSM-VB

GSM-VB with backup battery

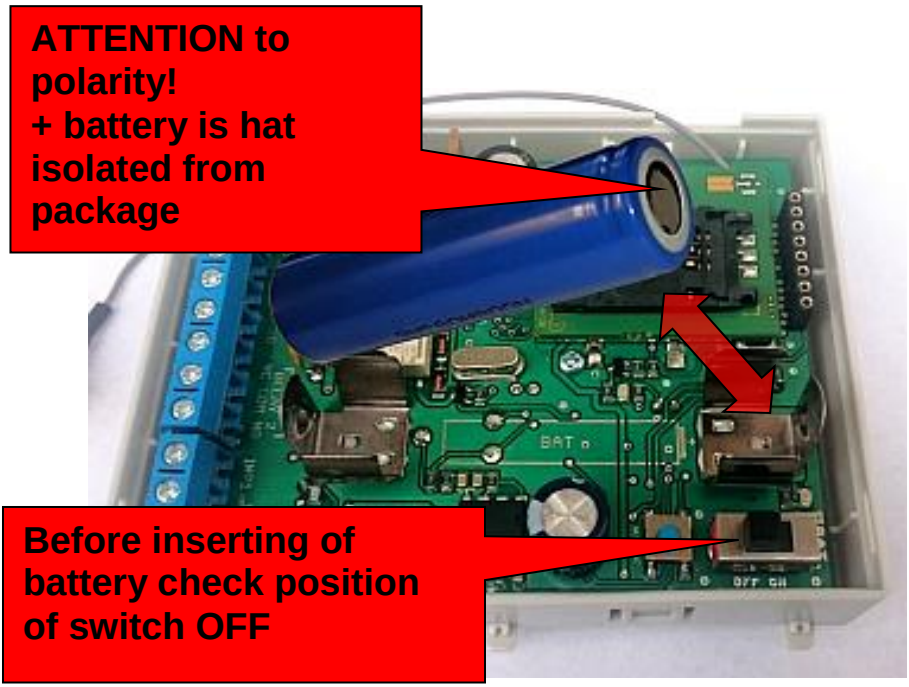
When you have GSM-VB with backup battery (included) after unit connection just turn a switch of backup battery to position „ON“ (via picture)

Do not store GSM-VB with inserted backup battery and switch in position „ON“! You might demaged battery! It is out of warranty.

Inserting of backup battery:

Use approved batteryes by producer only: Li-Ion 18650 2000-2600mAh

- Keep polarity. Never insert battery reversaly! You might demaged the unit.



CAUTION! After battery inserting MUST NOT light up red LED – indicates wrong polarity. In this case také out battery immediatelly!

After getting GSM-VB to operation by turn switch to position ON you connect backup battery

We do not take any responsibility of unit demaging when is not keep descriped process.

Technical parametres:

Dimension	according used modules
Operating position	various
Operating condition	temperatura: -20 to + 50°C humidity: 10% ÷ 80% when 30° C
power voltage	12 (9-24) V AC/DC, min. 500mA (optional backup battery Li-18650 min 2000mAh for cca 48h of operation)
buttons	1 to 87 according used modules (for each button max. 7 numbers dialled progressively – max. length of each 24 digits) – capacity of saved numbers is limited by capacity of SIM card
keypad	max. length code name (password) or memory – 10 digits. Max length of phone numbers is 24 digits – capacity of saved numbers is limited by capacity of SIM card
Relay 2x	switchable contact
Max. voltage	48V when I<1A
Max. current	2A when U<30V
Closing time by code	1 to 99 sec
Closing time by SMS	1 to 99 min
Detection start/restart	relay1 switching contact for 7s
input:	0/5V
GSM module	GE864
Mobile networks	850/900/1800/1900 MHz
SIM	3V, 1.8V