ESD

EDGARSSON SECURITY DESIGNS

GSM-VAC4+

VOICE, SMS AND CONTACT ID GSM ALARM COMMUNICATOR

INSTALLATION MANUAL

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1   FOR YOUR SAFETY

Read these simple guidelines. Not following them may be dangerous or illegal. Read the complete user guide for further information.

SWITCH ON SAFELY

Do not switch the unit on when use of wireless phone is prohibited or when it may cause interference or danger.

INTERFERENCE

All wireless phones and units may be susceptible to interference, which could affect performance.

SWITCH OFF IN HOSPITALS

Follow any restrictions. Switch the unit off near medical equipment.

SWITCH OFF IN AIRCRAFT

Follow any restrictions. Wireless devices can cause interference in aircraft.

SWITCH OFF WHEN REFUELING

Do not use the unit at a refueling point. Do not use near fuel or chemicals.

SWITCH OFF NEAR BLASTING

Follow any restrictions. Do not use the unit where blasting is in progress.

USE SENSIBLY

Use only in the normal position as explained in the product documentation. Do not touch the antenna unnecessarily.

2   INTRODUCTION

GSM-VAC4+ communicator is a new mobile voice and SMS autodialling system. It is mostly used to provide wide range of alarm information and very useful remote controls. GSM-VAC4+ can pass on messages about intrusion alarms, technical alarms, etc. by voice call or SMS to the end-user or directly by sending the Contact ID built-in to the Central Monitoring Station (CMS).

GSM-VAC4+ can be used in connection with different applications such as:
- Security alarm systems
- Home care and Emergency alarm
- Fire systems
- Car and boat alarm transmitter
- Door entry
- Remote access control

3   FEATURES AND APPLICATIONS

Features:
  ⇒ Built-in 4 band GSM module
  ⇒ Contact ID protocol built-in
  ⇒ 4 alarm inputs
  ⇒ System ON/OFF input
  ⇒ 4 remotely/locally controlled trouble status output
  ⇒ 4 prerecorded alarm messages – 1 for each alarm input
  ⇒ SMS alarm and service messages
  ⇒ LEDs for easy monitoring
  ⇒ 10 telephone numbers for alarm reporting
  ⇒ PC programming by USB port
  ⇒ Download programming by SMS
  ⇒ 50 Caller ID remote & access control users
  ⇒ System activating and deactivating by SMS, CLIP and DTMF command
  ⇒ Output remotely controlled by SMS, CLIP and DTMF command
  ⇒ Up to 1000 event log buffer
  ⇒ Prepaid cards credit and value checking
  ⇒ Security protected for incoming calls
  ⇒ Main and Battery power control

Applications:

  ⇒ Security alarm systems
  ⇒ Home care and Emergency alarm
  ⇒ Fire systems
  ⇒ Car and boat alarm transmitter
  ⇒ Door entry
  ⇒ Remote access control
  ⇒ Temperature regulations
  ⇒ Vending Machines
  ⇒ Other remote controls

4 START UP

VERY IMPORTANT	USE A **MICRO SIM CARD** (micro-SIM, ture→) WITH MEMORY FOR UP TO 250 CON

⇒ Insert SIM card to be used for GSM-VAC4+ in your personal mobile phone.

IMPORTANT	ERASE THE PIN CODE!

⇒ Insert SIM card into SIM holder on the GSM-VAC4+ device. The unit must be switched OFF when you insert the SIM!
⇒ Connect the antenna to antenna connector.
⇒ Connect alarm inputs and outputs to GSM-VAC4+.Connect device to source power supply voltage.
⇒ Wait until LED3 display is turned ON (green) and LED1 (blue) starts flashing. This is set in around 1 minute.
⇒ GSM-VAC4+ unit is now ready to operate.

IMPORTANT	Before sending any SMS commands to GSM-VAC4+ device, GSM-VAC4+ must be in normal operation!

IMPORTANT	When the backup battery 12V/1,2Ah is connected to the unit the main power supply must be from 13,8V to 14,5V DC!

****   Please note the GSM-VAC4+ uses a micro SIM.
Also when first powered please wait 2 minutes before programming voice messages.   ***

Quick Start Guide

Quick Start Guide

Preparing the SIM card

1, Put the SIM card into your phone.

2, Check that you have credit on the SIM if it is a "pay as you go".

3, Make sure that you can dial a number without having to enter a PIN number or keypad unlock.

4. Make sure you can send and receive SMS messages with the SIM in a phone.

5. Put the SIM card into the GSM-VAC4+. Apply 12 Volts to the dialler. Wait for the LED lamps to go through their power up sequence. After around one minute the blue LED lamp will be flashing indicating signal strength, 5 flashes for good signal strength and 1 for poor. The lower yellow LED lamp should flash once every 3 seconds approx. The Green LED lamp should be on. Red LED off.

6. Send the following SMS to the phone number of the SIM card in the dialler. **;+SPO=10;**   (Note - A semicolon followed by a plus sign, then S and P have to be in capital letters, followed by a letter O (as in got any Os), then =10 and a final semicolon) No spaces.

After a few seconds you will receive an SMS **;SPO=10;**   The SIM card is now ready to program.

Programming the SIM

Enter the following names and numbers into the SIM phone book.

Name **TN1**	Number **Your Mobile Number**
Name **LN1**	Number **1**
Name **IN1**	Number **0**
Name **#0YOUR LOCATION**	Number **0**
Name **#1ALARM**	Number **1**

(Letters have to be capitals)

Do this **either** by putting the SIM card into an unlocked handset and entering as names and numbers.

Make sure these are stored in the SIM card and not in the Phone's memory. You may need to copy, transfer or save to the SIM card.

Or use the Voyager programming s/w and lead.

Or program by SMS messages e.g. send the following messages once the SIM is in the unit and connected to the network.

;+TN1=07***********;
;+LN1=1;
;+IN1=0:
;+#0YOUR LOCATION=1;
;+#1ALARMTEXT=1;

5   LEDs

Blue LED (LED1)
  – Indicates the level of the GSM signal from 1 to 5 LED flashes (1 is weak signal, 5 is excellent signal)

Red LED (LED2)
  - When LED 2 is ON the unit has a problem with a GSM network connection or the GSM part of the unit is out of order. In this case immediately call the service!

Red LED (LED2) – alarm state
  - During an alarm event the red LED indicates on which input alarm has been triggered. For example if alarm was triggered on the first input there is 1 LED flash, on second input 2 LED flashes, etc.

Green LED (LED3)
  - When the alarm inputs on the unit are in active state (SYS=1) then the green LED is ON. With alarm inputs disabled the green LED goes OFF (SYS=0).

Yellow LED (LED4)
  - Short flashing indicates that the GSM module is ON, but it is not yet connected on the GSM network. After connection, yellow led is flashing with short pulse ON and a long pulse OFF.

6   CLEAR ALL PROGRAMMED DATA FROM SIM

This is highly recommended when a SIM card you are going to use for the GSM-VAC4+ is not new and it already has some data stored in the phone book memory.

By sending this SMS to GSM-VAC4+ all programmed parameters and numbers are cleared:
;SDCLR;

After sending SMS you should wait at least 60 second for the command to be executed!

NOTE	By sending this command to the GSM-VAC4+ all programmed data is erased from the SIM card, including SMS messages!

7   CONNECTING DIAGRAM
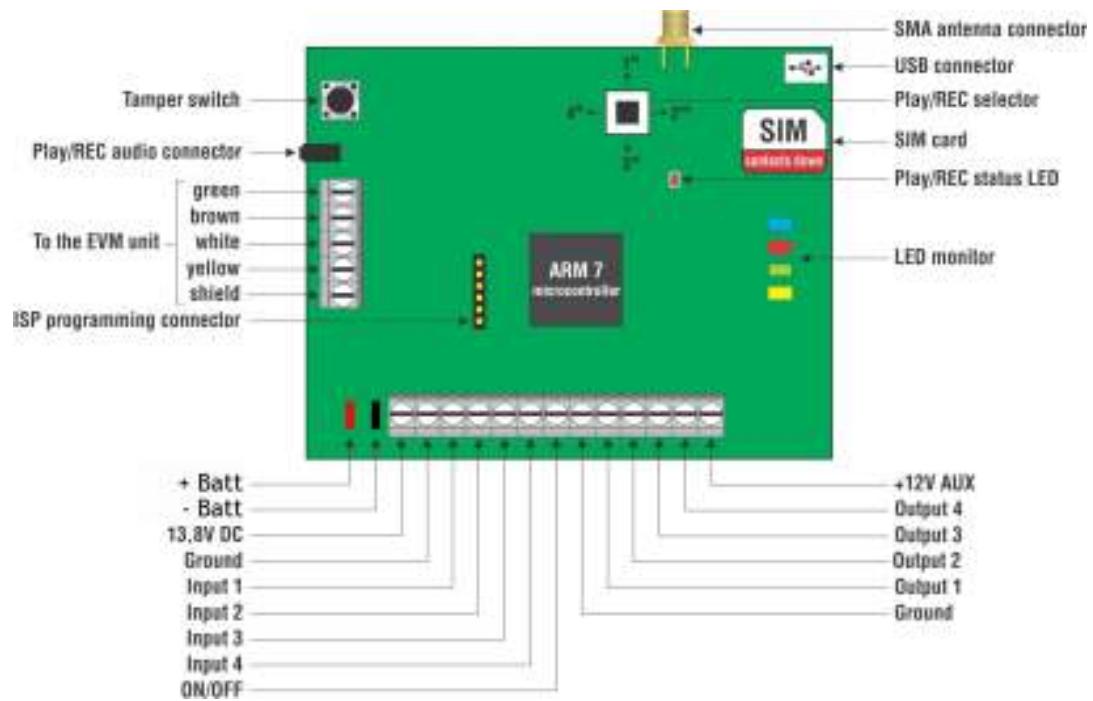
Figure 1: Connection diagram

8   DESCRIPTION OF TERMINAL BLOCKS

+BATT/Ground – Battery backup connector. In the original metal box it is possible to place a 1,2Ah/12V battery. Red fasten connector is for positive and black fasten connector is for negative voltage battery supply.

+13,8V/Ground – Power Supply connector - On the left side is positive voltage (+ 12 VDC to +15VDC) and the right site is GND voltage.

Input 1 – Alarm input 1 - It can be N.O. (normal open) to GND or +12V DC, N.C. (normal close) to GND or +12V DC.

Input 2 – Alarm input 2 - It can be N.O. (normal open) to GND or +12V DC, N.C. (normal close) to GND or +12V DC.

Input 3 – Alarm input 3 - It can be N.O. (normal open) to GND or +12V DC, N.C. (normal close) to GND or +12V DC.

Input 4 – Alarm input 4 - It can be N.O. (normal open) to GND or +12V DC, N.C. (normal close) to GND or +12V DC.

ON/OFF – System arm/disarm - It can be N.O. (normal open) to GND or +12V DC, N.C. (normal close) to GND or +12V DC.

NOTE	For the arm/disarm function the ION parameter must be 4, 5 or 6!

Output 1 – First diagnostic, remote control or alarm output. It is Open Collector output with maximum loading current of 500mA.

Output 2 – Second diagnostic, remote control or alarm output. It is Open Collector output with maximum loading current of 500mA.

Output 3 – Third diagnostic, remote control or alarm output. It is Open Collector output with maximum loading current of 500mA.

Output 4 – Fourth diagnostic, remote control or alarm output. It is Open Collector output with maximum loading current of 500mA.

9   PROGRAMMING OPTIONS

GSM-VAC4+ device supports different types of programming:

⇒ To program GSM-VAC4+ parameters put the SIM card into your personal GSM phone. Add programming parameters in **SIM Card "Phone Book"**.

⇒ You can program GSM-VAC4+ remotely by SMS command.

⇒ You can program GSM-VAC4+ with USB key and SIM manager.

⇒ You can program GSM-VAC4+ directly via USB interface.

10 VOICE MESSAGES – RECORD & PLAY

The memory of each alarm input enables us to record our own voice message in the total length of 10 seconds (4 x 10 seconds). The device is namely equipped with a PLAY/REC audio connector. For recording and listening recorded messages a headset is necessary. Headset is very common and it is use with many mobile phones but should be supplied also by your distributor.

10.1 RECORDING / LISTENING OF VOICE ALARM MESSAGES

For recording and playing alarm messages GSM-VAC4+ has a joystick switch which you can use in 4 different directions:

    Message 1 – UP
    Message 2 – RIGHT
    Message 3 – DOWN
    Message 4 – LEFT
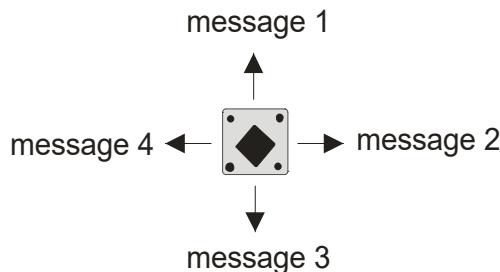
Figure 2: Recording / Listening of alarm messages

10.1.1   RECORDING OF VOICE ALARM MESSAGES:

1. GSM-VAC4+ must be in normal operating mode – registered to the GSM network, to avoid disturbances when logging on to the GSM network.
2. Insert the handset into the PLAY/REC audio connector on PCB.
3. RECORDING: Press and hold the joystick up for recording the 1st message (no beep).
4. The RED LED left of the joystick permanently lit when recording.
5. When release the joystick the RED LED goes OFF.

Follow the same procedure for all four alarm messages.

10.1.2   PLAYBACK OF VOICE ALARM MESSAGES:

1. Shortly press the joystick up for listening the 1st message.
2. You can hear the 1st message.
3. The RED LED left of the joystick blinks when the message is ended.
4. Playback stops automatically after the end of the message.

Follow the same procedure for all four alarm messages.

11 GSM-VAC4+ PARAMETERS

To support versatile functionality of GSM-VAC4+ different parameters are used. The parameters are divided in logical sections and are described in the following chapters.

11.1 SECURITY LEVEL

SL parameter from 0 to 10 defines which telephone number stored into the phone book from TN1 – TN0 can enter into programming and remote control unit of the GSM-VAC4+.

NOTE	When the SL level is 0, an access to the GSM-VAC4+ is possible from any phone!

IMPORTANT	Before any SL number is programmed the GSM-VAC4+ can accept ALL CALLS. Remote SMS programming and remote controlling is possible from any phone!

Table of parameters:

Name / value	Comment
SL = 0	All calls and SMS are accepted
SL = 1	Only number stored under parameter TN1 has access to unit
SL = 2	Numbers stored under parameters TN1 to TN2 have access to unit
SL = 3	Numbers stored under parameters TN1 to TN3 have access to unit
SL = 4	Numbers stored under parameters TN1 to TN4 have access to unit
SL = 5	Numbers stored under parameters TN1 to TN5 have access to unit
SL = 6	Numbers stored under parameters TN1 to TN6 have access to unit
SL = 7	Numbers stored under parameters TN1 to TN7 have access to unit
SL = 8	Numbers stored under parameters TN1 to TN8 have access to unit
SL = 9	Numbers stored under parameters TN1 to TN9 have access to unit
SL = 10	Numbers stored under parameters TN1 to TN0 have access to unit

Table 1: SL parameter

Example:

♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
SL	5	Numbers stored under parameters TN1 to TN5 have access to unit

Table 2: SL parameters example

♦ **Remote programming by SMS**
;SL=5;

11.2 ALARM SUPPORT

Alarm reporting is supported by group of different parameters. First section is used to define the relations needed for alarm to be triggered. The second section is used to report alarm.

11.2.1   IN Parameters

Alarm and reset input can be triggered in 4 different ways. The status of the input can either be normal closed (N.C) or normal open (N.O.) with positive (+ 12V) or negative (GND) voltage.

When you need the input feedback information it is possible to receive SMS when input returns from alarm to normal position. To receive return SMS use IN=4, 5 or 6.

$\Rightarrow$ IN = 0 – Normal Open – triggered with negative voltage (GND)
$\Rightarrow$ IN = 1 – Normal Close – breaking negative or positive voltage loop
$\Rightarrow$ IN = 2 – Normal Open – triggered with positive voltage (+ 12VCC)
$\Rightarrow$ IN = 3 – Input disable
$\Rightarrow$ IN = 4 = IN = 0 + input reset SMS
$\Rightarrow$ IN = 5 = IN = 1 + input reset SMS
$\Rightarrow$ IN = 6 = IN = 2 + input reset SMS
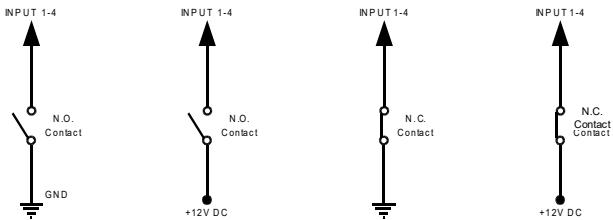
Figure 3: Input Connection diagram

Table of parameters:

Name	Comment
ION	System arm/disarm control
IN1	Input 1 control
IN2	Input 2 control
IN3	Input 3 control
IN4	Input 4 control

Table 3: IN parameters

Example:

♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
ION	4	OFF – connecting GND on ON/OFF input
IN1	0	Alarm activated by connecting to GND
IN2	1	Alarm activated by disconnecting GND or +12V
IN3	2	Alarm activated by connecting +12V
IN4	4	Alarm activated by connecting to GND + RST SMS

Table 4: IN parameters example

♦ **Remote programming by SMS**
;ION=0;IN1=0;IN2=1;IN3=2;IN4=4;

11.2.2 ID parameters

ID parameter determines time period of the pulse length to trigger the Input. The pulse time can be from 0.5 seconds to 9999 seconds. Minimum time is 0.5 seconds when the parameter value is 0.

Table of parameters:

Name	Comment
DON	Default ID filter is 0.5 seconds – ON/OFF input
ID1	Default ID filter is 0.5 seconds – input 1
ID2	Default ID filter is 0.5 seconds – input 2
ID3	Default ID filter is 0.5 seconds – input 3
ID4	Default ID filter is 0.5 seconds – input 4

Table 5: ID parameters

Example:

♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
DON	0	Default ID filter is 0.5 seconds – ON/OFF input
ID1	5	ID filter is 5 seconds for input 1
ID2	30	ID filter is 30 seconds for input 2
ID3	2	ID filter is 2 seconds for input 3
ID4	0	ID filter is 0.5 seconds for input 4

Table 6: ID parameters example

♦ **Remote programming by SMS**
;DON=0;ID1=5;ID2=30;ID3=2;ID4=0;

11.2.3 DD parameters

If you would like to have a delay before unit starts dialing procedure use DD – delay before dialing parameter.

Table of parameters:

Name	Comment
DDN	ON/OFF input delay
DD1	Delay before dialing for Input 1
DD2	Delay before dialing for Input 2
DD3	Delay before dialing for Input 3
DD4	Delay before dialing for Input 4

Table 7: DD parameters

Example:

♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
DD1	1	Delay before dialing is 1 seconds for input 1
DD2	2	Delay before dialing is 2 seconds for input 2

Table 8: DD parameters example

♦ **Remote programming by SMS**
;DD1=1;DD2=2;

11.2.4   TN parameters

Telephone numbers for remote alarm reporting are listed as TN parameters. Remote alarm reporting on GSM-VAC4+ is done via SMS messages or VOICE call.

GSM-VAC4+ makes a voice call, send alarm notification SMS message or both. If the corresponding name ends with the letter **"V"** only VOICE call is made and if the name ends with the letter **"M"** only SMS message is sent.

Table of parameters:

Name	Comment
TN1	1st telephone number
TN2	2nd telephone number
TN3	3rd telephone number
TN4	4th telephone number
TN5	5th telephone number
TN6	6th telephone number
TN7	7th telephone number
TN8	8th telephone number
TN9	9th telephone number
TN0	10th telephone number

Table 9: TN parameters

NOTE	By pressing * on your phone you switch OFF the redial call for calling number. The remaining numbers are called as usual. By pressing # you switch off all remaining calls.

NOTE	When VOICE is used for alarm reporting, the user has the possibility to control the GSM-VAC4+ activity with the various DTMF commands.

Example:

♦   **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
TN1	042376678	1st telephone number (VOICE alarm & SMS message)
TN2V	040719479	2nd telephone number (VOICE alarm only)
TN3M	040308350	3rd telephone number (SMS message only)

Table 10: TN parameters example

♦   **Remote programming by SMS**
;TN1=042376678;TN2V=040719479;TN3M=040308350;

11.2.5   LN Parameters

These parameters are used to link alarm event from inputs or any other source to the telephone numbers on TN list.

Table of parameters:

Name	Comment
LN1	Input & telephone No. linking for 1st alarm input (TN1 – TN0)
LN2	Input & telephone No. linking for 2st alarm input (TN1 – TN0)
LN3	Input & telephone No. linking for 3st alarm input (TN1 – TN0)
LN4	Input & telephone No. linking for 4st alarm input (TN1 – TN0)
LN5	Power down, telephone No. linking (TN1 – TN0)
LN6	Low Battery, telephone No. Linking (TN1 – TN0)
LN7	Periodic test SMS, telephone No. linking (TN1 – TN0)
LN8	SIM card refill, telephone No. linking (TN1 – TN0)
LN9	Tamper switch, telephone No. linking (TN1 – TN0)
LN10	Unauthorized call or SMS, telephone No. linking (TN1 – TN0)
LN11	Log status, telephone No. linking (TN1 – TN0)

Table 11: LN parameters

Example:

♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
LN8	12	Refill SIM – SMS is sent to TN1 & TN2
LN1	13	Input1 is called/sent SMS to TN1 & TN3
LN2	123	Input2 is called/sent SMS to TN1, TN2 & TN3
LN3	5	Input3 is called/sent SMS to TN5
LN4	45	Input4 is called/sent SMS to send to TN4 & TN5
LN7	12	Periodic Test SMS is sent to TN1 & TN2

Table 12: LN parameters example

♦ **Remote programming by SMS**
   ;LN8=12;LN1=13;LN2=123;LN3=5;LN4=45;LN7=12;

11.2.6   MAIN and BATT parameter

GSM-VAC4+ can send an SMS message in case of the main power failure. SMS message is sent to user. You can also program how long the unit can stay without power before sending this message.

GSM-VAC4+ can control battery level and sends 3 SMS messages when following voltage level on battery is reached: 11.5V, 10.5V and 9V. It sends the "Low Battery" and battery level in volts SMS message together.

The low battery level can be detected when the unit works without main power supply.
Should the battery power rise again above 11,5V GSM-VAC4+ sends an SMS message with the following text: "Low Battery restored".

NOTE	The "Low battery" event is send when the GSM-VAC4+ operates only with a backup battery and it is not connected on the Main Power Supply.

Parameter MAIN determines time out control after which the GSM-VAC4+ will send "Main Power Lost alarm". Time can be set between 1 and 9999 seconds.
Parameter BATT determines time out control after which the GSM-VAC4+ will send Battery power level notifications. Time can be set between 1 and 9999 seconds.

Table of parameters:

Name	Comment
MAIN	Main Power Lost filter
BATT	Battery Power Lost filter

Table 13: MAIN, BATT parameters

Example:

- ♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
MAIN	5	Main power must be down 5s to send alarm.
BATT	20	Battery level must be stable for 20s to send alarm.

Table 14: MAIN, BATT parameters example

- ♦ **Remote programming by SMS**
  ;MAIN=5;BATT=20;

11.2.7   OS parameters

GSM-VAC4+ device has 4 open collector outputs and each of them can be programmed in a different way: as a bi-stable or mono-stable (pulse) output. **The programming time is in seconds and can be set from 2-9999 seconds.**

Typical connection for the output:

⇒ OSX = 0 – Selected output is disabled
⇒ OSX = 1 – Selected output is in bi-stable toggle mode
⇒ OSX = 2 – Selected output is in mono-stable pulse mode (pulse time is set to 2 seconds)
Where X is one of the output numbers from 1 to 4.

Table of parameters:

Name	Comment
OS1	Control for the 1st output
OS2	Control for the 2nd output
OS3	Control for the 3rd output
OS4	Control for the 4th output

Table 15: OS parameters

Example:

♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
OS1	1	1st Output – Bistable toggle mode
OS4	14	4th Output – Monostable pulse mode (14 sec. pulse)

Table 16: OS parameters example

♦ **Remote programming by SMS**
;OS1=1;OS4=14;

If you would like to receive SMS message with the Output status write "+" before SMS command:
♦ **Remote programming by SMS**
;+OS1=1;OS4=14;

11.2.8   OD parameters

OD parameters are used to link alarm events directly to output. OD1 to OD4 are used to link input events to output, other are used for internal function notification.

Table of parameters:

Name	Comment
OD1	Input 1 direct link to output
OD2	Input 2 direct link to output
OD3	Input 3 direct link to output
OD4	Input 4 direct link to output
OD6	GSM network error
OD7	System tamper
OD8	System ON/OFF
OD9	Unauthorized call/SMS
OD10	Listen in indication
OD11	CID transfer error

Table 17: OD parameters

Example:

- ♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
OD1	1	Alarm on IN1 trigger output 1
OD2	0	No direct connection between input2 and output
OD6	2	GSM network failure on output 2
OD7	4	System tamper on output 4
OD8	3	System ON/OFF on output 3

Table 18: OD parameters example

- ♦ **Remote programming by SMS**
  ;OD1=1;OD2=0;OD6=2;OD7=4;OD8=3;

11.2.9   IT, AR and IB parameters

With these parameters user define the number of alarm events that can be triggered in chosen interval before the systems goes in bypass mode (blocks sending alarm events to telephone numbers).

IT – parameter defines the interval (in seconds) in which maximum **AR** number of alarm can be triggered.

AR – parameter defines the maximum number of alarms trigged in **IT** time

IB – IB parameter defines how long (in seconds) sending of alarm events is blocked when automatic input block system in enabled.

Table of parameters:

Name	Comment
IT1	Time interval 1st input
IT2	Time interval 2nd input
IT3	Time interval 3rd input
IT4	Time interval 4th input
AR1	Maximum allowed number of events on 1st input
AR2	Maximum allowed number of events on 2nd input
AR3	Maximum allowed number of events on 3rd input
AR4	Maximum allowed number of events on 4th input
IB1	System block time on 1st input
IB2	System block time on 2nd input
IB3	System block time on 3rd input
IB4	System block time on 4th input

Table 19: IT, AR and IB parameters

Example:
Input 1 will be blocked for 10 minutes if 10 alarm events are triggered within 125 seconds
Input 2 will be blocked for 1 hour if 5 alarm events are triggered within 12 minutes.

♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	**Number**	**Description**
IT1	125	Time interval on input 1
AR1	10	Max number of alarm events on input 1
IB1	600	System block time on input 1
IT2	720	Time interval on input 2
AR2	5	Max number of alarm events on input 2
IB2	3600	System block time on input 2

Table 20: IT, AR and IB parameters example

♦ **Remote programming by SMS**
;IT1=125;AR1=10;IB1=600; IT2=720;AR2=5;IB2=3600;

NOTE	Arm/disarm events on GSM-VAC4+ resets bypass function.

11.2.10 Alarm SMS reporting

The default message text is English, but it is possible to change language with LNG parameter. In addition user can customize a short SMS message text for each alarm input.

Each message is built from 3 parts and user can write the first (User Location) and the second (alarm event) part of the message. Unit adds the third part (alarm event description) automatically. Language of the 3rd part may be changed by **LNG** parameter. The message is stored in the SIM phone book so you should add any number for correct operation.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
#	0	U	S	E	R		L	O	C	A	T	I	O	N	
#	1	I	N	P	U	T		1							
#	2	I	N	P	U	T		2							
#	3	I	N	P	U	T		3							
#	4	I	N	P	U	T		4							

Table 21: Alarm SMS formatting

NOTE	Message should not be longer than 14 characters! Space is also counted as one character.

Example:
- **Remote programming by SMS**
  ;#0USER LOCATION=0;#1INPUT 1=1;#2INPUT 2=2;#3INPUT 3=3;#4INPUT 4=4;

11.2.11   DTMF REMOTE COMMANDS

When GSM-VAC4+ enters VOICE call user has the option to control device via DTMF command. By default this DTMF control is limited to canceling the ongoing and all next call.

The user receives a confirmation of most DTMF commands via DTMF feedback pattern 1 or 3 beeps.

REMOTE COMMAND	ACTION DESCRIPTION
00	All outputs OFF (3 beeps=OFF)
01	All outputs ON (1 beep=ON)
10	Output 1 OFF (3 beeps=OFF)
11	Output 1 ON (1 beep=ON)
12	Check the output 1 state (1 beep=ON, 3 beeps=OFF)
20	Output 2 OFF (3 beeps=OFF)
21	Output 2 ON (1 beep=ON)
22	Check the output 2 state (1 beep=ON, 3 beeps=OFF)
30	Output 3 OFF (3 beeps=OFF)
31	Output 3 ON (1 beep=ON)
32	Check the output3 state (1 beep=ON, 3 beeps=OFF)
40	Output 4 OFF(3 beeps=OFF)
41	Output 4 ON (1 beep=ON)
42	Check the output4 state (1 beep=ON, 3 beeps=OFF)
51	Input 1 status checking (1 beep=alarm, 3 beeps=normal)
52	Input 2 status checking (1 beep=alarm, 3 beeps=normal)
53	Input 3 status checking (1 beep=alarm, 3 beeps=normal)
54	Input 4 status checking (1 beep=alarm, 3 beeps=normal)
99	Listen-in ON
90	Listen-in OFF
*	Does not call this telephone number again
#	Complete interruption of the dialing procedure

Table 22: GSM-VAC4+ DTMF commands

11.3 ADVANCED CLIP FUNCTION

GSM-VAC4+ supports advanced CLIP (**C**alling **L**ine **I**dentification **P**resentation) function with confirmation. Benefit of this CLIP function is that it that the user can control the different function on GSM-VAC4+ without any costs and receives a confirmation that the CLIP has been acknowledged.

NOTE	To activate the advanced CLIP function call must be canceled after 1 and up to 3 rings. CLIP function makes a call back to calling number to confirm the control.

11.3.1   TC parameters

10 telephone numbers which are stored into the phone book from TN1 to TN0 can manage following functions using CLIP without making any cost to the user's GSM bill. With TC parameter you define the function you need for corresponding TN number.
  ⇒ Trigger one of the GSM-VAC4+ Output (parameter 1-4)
  ⇒ Switch the system ON/OFF (parameter 5)
  ⇒ System control with "Call-back" function (parameter 6)

NOTE	With one telephone number you can control only one function (for example trigger only first output)!

Table of parameters:

Name	Comment
TC1	First CLIP telephone number = TN1
TC2	Second CLIP telephone number = TN2
TC3	Third CLIP telephone number = TN3
TC4	Forth CLIP telephone number = TN4
TC5	Fifth CLIP telephone number = TN5
TC6	Sixth CLIP telephone number = TN6
TC7	Seventh CLIP telephone number = TN7
TC8	Eight CLIP telephone number = TN8
TC9	Ninth CLIP telephone number = TN9
TC0	Tenth CLIP telephone number = TN0

Table 23: TC parameters

Example:
  ♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
TC1	3	1st CLIP activates the Output 3
TC2	5	2nd CLIP switches system OFF/ON
TC3	6	3rd CLIP calls back from device to user

Table 24: TC parameters example

  ♦ **Remote programming by SMS**
     ;TC1=3;TC2=5;TC3=6;

11.4 CLIP FUNCTION

The second CLIP function that GSM-VAC4+ supports is simple CLIP (**C**alling **L**ine **I**dentification **P**resentation) function. Benefit of simple CLIP function is that it supports more user than advanced CLIP function and is used to simply control the predefined output of GSM-VAC4+.

NOTE	To activate simple CLIP function just call GSM-VAC4+ device. The device will automatically disconnect the call and control the output.

11.4.1   CLPEN parameter

Parameter is used to enable/disable simple CLIP function.

- ⇒ CLPEN = 0   Clip function is disabled
- ⇒ CLPEN = 1   Clip function will only work on numbers defined with CLP parameters
- ⇒ CLPEN = 2   Clip function will with ALL numbers calling GSM-VAC4+

11.4.2   CLPOU parameter

Parameter is used to define which output should GSM-VAC4+ trigger if the number called the device is on the CLP list

- ⇒ Trigger one of the GSM-VAC4+ Outputs (parameter 1-4)

11.4.3   CLPI parameter

CLPI parameter is a precondition for simple CLIP function to operate. With this parameter user defines the input that has to be activated for simple CLIP function to operate.

- ⇒ Precondition can be one of the GSM-VAC4+ Inputs (parameter 1-4), with 0 this precondition is disabled.

11.4.4   CLP1 to CLP50 parameters

The parameters are used to define telephone numbers for simple CLIP function.

Table of parameters:

Name	Comment
CLPEN	Control of CLIP function
CLPOU	Output controlled by CLIP function
CLPI	Precondition for CLIP function
CLP1	CLIP Telephone number for 1 user
.	.
.	.
.	.
CLP50	CLIP Telephone number for 50. user

Table 25: CLIP parameters

Example:

♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
CLPEN	1	Enable simple CLIP function
CLPOU	2	CLIP function will trigger output 2
CLP1	042340880	Number for CLIP control
CLP3	040340880	Number for CLIP control

Table 26: CLIP parameters example

♦ **Remote programming by SMS**
;CLPEN=1;CLPOU=2;CLP1=042340880;CLP1=040340880;

11.5 PREPAID CARD CREDIT AND VALIDITY INFORMATION

GSM-VAC4+ can be used with prepaid SIM cards and its limitations. To be able to overcome this limitation of the prepaid SIM cards, GSM-VAC4+ offers the possibility of automatic checking mechanism for credit and time expiration.

NOTE	GSM-VAC4+ automatically sends warning SMS when the credit reaches low level defined by LCV parameter or SIM card validity is near to expiration.

NOTE	For support of different GSM providers contact support.

11.5.1 LCV and SCV parameter

LCV is used to set the limit for low credit event. If the credit on prepaid SIM cards falls below this limit SMS is send.

SCV the period of valid operating time varies with different GSM network providers. The value can be programmed from 1 to 360 days. The default value does not presume any kind of expiry warning.

NOTE	After the SIM refill it is necessary to send a command SMS to the GSM-VAC4+ and reset the counter. ;SCV=XXX; Where XXX are number of days. For example in Slovenia SCV is 90 and in Italy 360 days.

NOTE	The parameter SCV must be sent by SMS command and should not be programmed directly on SIM card.

11.5.2 CC1, CC2 and CC3 parameters

Number used to check low credit value. They are provided from the GSM providers.

⇒ CC1   - This method can be used by any GSM provider that supports Unstructured Supplementary Service Data
⇒ CC2   - This method is dedicated to TIM mobile provider
⇒ CC3   - This method is dedicated to Vodafone mobile provider

11.5.3   CREF, CTIM, CVODA parameters

Parameters are used to find the credit value of the prepaid SIM card. Strings under these parameters are used to pars the replay message from the GSM provider.

- $\Rightarrow$ CREF - Pars string for the replays received from CC1 number
- $\Rightarrow$ CVODA - Pars string for the replays received from CC2 number
- $\Rightarrow$ CTIM - Pars string for the replays received from CC3 number

Table of parameters:

Name	Comment
LCV	Low credit value, bottom limit for low credit event.
SCV	Sim card validity time (in days)
CC1	Credit number for credit check universally used
CC2	Credit number for credit check dedicated for Italian TIM mobile provider
CC3	Credit number for credit check dedicated for Italian Vodafone mobile provider
CREF	String for parsing replay message from CC1 number
CVODA	String for parsing replay message from CC2 number
CTIM	String for parsing replay message from CC3 number

Table 27: Credit checking parameters

Example:

- ♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
CC1	see	below
CC2		
CC3		
LCV	4	Low credit message will be send bellow 4

CC1=*#1345# for Vodafone and *#10# for O2.

Table 28: Credit checking parameters example

This method can be used by any user that receive credit messages like that on their GSM phone (press *+provider number+" & call button).

- ♦ **Remote programming by SMS**
  ;CC1=*448#;CC2=4916;CC3=404;LCV=4;

11.6 SET-UP PARAMETERS

Different parameters are used to support versatile functionality of GSM-VAC4+.

11.6.1 CRE parameter

Repetition of alarm calling sequences. With the number from 1 to 99 we define how often the sequence is repeated in case the number is busy or not answered.

11.6.2 UDC parameter

Parameter is used to synchronize GSM-VAC4+ clock to GSM network clock. User must enter here the number of the GSM-VAC4+ SIM card (Telephone number of GSM-VAC4+ device).

11.6.3 HTN parameter

Hidden telephone number. This function ("0" value) is used in order to conceal the telephone number of the GSM-VAC4+ device. Value "1" means that the number is displayed.

11.6.4 TST parameter

A test SMS is sent periodically. GSM-VAC4+ can send the test message in the interval ranging from 1 hour to 240 hours.

Example:
    To send test SMS TST value is set to 12, the numbers linked to "LN7" receive a test message every 12 hours.

11.6.5 TSTT parameter

TSTT parameter is used to define reference point for sending test message. If this parameter is set than after restart of the GSM-VAC4+ first test SMS will be send out at time defined with TSTT parameter.
Parameter value is defined in hours.

Example:
    To receive first test SMS at 20.00h TSTT value must be set to 20

NOTE	By setting TSTT=0 this function is disabled

11.6.6 MNF parameter

When it is necessary to fix the GSM network to one provider the user can use the MNF parameter. The MNF parameter switches automatic network searching to manual.

Example:

> MCC/MNC code for Simobil is 29340, Mobitel is 29341, TIM is 22201, and Vodafone Italy is 22210.
> More information about national MCC/MNC codes can be acquired at:
> **http://en.wikipedia.org/wiki/Mobile_Network_Code**

11.6.7 AUD parameter

AUD parameter enables you to change between different audio modes on GSM-VAC4+ device.

$\Rightarrow$ AUD = 0   - Optimized for "voice data" transfer
$\Rightarrow$ AUD = 1   - Optimized for plain audio call

11.6.8 MIC1 parameter

MIC1 parameter enables you to change the sound level on microphone. Microphone level can be in range from 0 to 40.

11.6.9 MIC2 parameter

MIC2 parameter enables you to change the sound level on auxiliary microphone. Microphone level can be in range from 0 to 40.

11.6.10 SPK parameter

SPK parameter enables you to change the speaker sound level. Speaker level can be in range from 0 to 20.

11.6.11 RTN parameter

RNT parameter defines how long (in seconds) the device is dialing telephone number before switching to another.

11.6.12 LOT parameter

LOT parameter defines how long (in seconds) the device is connected to dialed unit.

11.6.13 ARST parameter

 ARST parameter defines periodic auto restart time (in hours) of the device.

11.6.14 LNG parameter

LNG parameter switches between the pre-programmed languages:
 ⇒ 0 - English
 ⇒ 1 - Italian
 ⇒ 2 - Slovenian
 ⇒ 3 - Croatian
 ⇒ 4 - Dutch
 ⇒ 5 - German
 ⇒ 6 - Spanish

11.6.15 LED parameter

LED parameter enables you to turn indication LEDs on GSM-VAC4+ ON or OFF (0 – led OFF, 1 – led ON)

11.6.16 BIDI parameter

BIDI is a special parameter used to change multiple settings in one step. Used for special purposes. Contact sales for more information.

11.6.17 ADF parameter

Parameter is used to define voice refresh function, to prevent blocking of SIM in some networks. When ADF time out expires call is made to TN1 telephone number.

11.6.18 SPO parameter

SPO parameter is used to define the starting point for storage of GSM-VAC4+ parameters on SIM card.

NOTE	If this offset is needed than first configuration parameter has to be SPO, other than follow latter. In addition programming must be done via SMS or direct USB connection.

11.6.19 REG parameter

REG parameter is used to define time out (in seconds) for how long may GSM-VAC4+ drop out of registration before GSM module will be restarted.

NOTE	This is a very useful function in unstable GSM networks.

Table of parameters:

Name	Comment
CRE	Number of dialing attempts (1 – 99)
UDC	GSM-VAC4+ *number for system time* synchronization
HTN	Hidden telephone number (1= displayed, 0 = hidden)
TST	Periodic test SMS
TSTT	Periodic test SMS start time
MNF	Automatic network searching (default)
AUD	Audio modes
MIC1	Sound input 1 level (0-40)
MIC2	Sound input 2 level (0-40)
SPK	Sound output level (0-20)
RTN	Ring time
LOT	Active connection time out
ARST	GSM module auto restart time
LNG	Switch between different languages
LED	Led indication control
BIDI	Multiple setting change (contact sales for more info)
ADF	Auto dial function
SPO	SIM card offset for parameters
REG	Out of registration time out.

Table 29: Set-up parameters

Example:

- ◆ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
CRE	2	Number of dialing attempts - 2
HTN	0	Hidden telephone number of the GSM-VAC4+
MNF	29340	Manual fixing of the GSM provider (Simobil)
LNG	1	Switch to Italian language
MIC1	15	Microphone sound level
SPK	8	Speaker sound level
TST	24	24 hours periodic test SMS
TSTT	14	First SMS will be send out at 12.00
REG	60	GSM module will be restarted if GSM-VAC4+ is 60s out of the GSM registration.

Table 30: Set-up parameters example

- ◆ **Remote programming by SMS**
  ;CRE=2;HTN=0;MFN=29340;LNG=1;MIC1=15;SPK=8;
  TST=24;TSTT=14;REG=60;

11.7 CONTACT ID EVENT REPORTING

GSM-VAC4+ is capable to send all of its events in Contact ID form to CMS. Next parameters are used to support this function.

11.7.1   CID parameter

CID parameter is used to enable/disable this function.

11.7.2   CIN parameter

CIN parameter is used to set incoming volume level for CID communication. CIN level can vary in range from 0 to 20.

11.7.3   COUT parameter

COUT parameter is used to set outgoing volume level for CID communication. COUT level can vary in range from 0 to 40.

11.7.4   TN11 parameter

TN11 parameter represents primary telephone number for CID reporting.

11.7.5   TN12 parameter

TN12 parameter represents secondary telephone number for CID reporting.

Table of parameters:

Name	Comment
CID	CID function enable/disable parameter
CIN	CID incooming volume setting
COUT	CID outgoing volume setting
TN11	Primary telephone number
TN12	Secondary telephone number

Table 31: CID parameters

Example:
- ♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
CID	1	CID reporting enabled
CIN	12	CID incoming volume level
TN11	042340880	Primary telephone number

Table 32: CID parameters example

- ♦ **Remote programming by SMS**
  ;CID=1;CIN=12;TN11=042340880;

11.8 EVENT LOG PARAMETERS

GSM-VAC4+ has a small set of parameters to manage log memory.

11.8.1   LOGN parameter

LOGN parameter is used to define the number of log events that will be send out in case of PLOG command

11.8.2   LOGI parameter

LOGN parameter is used to enable and define GSM-VAC4+ log storage.

⇒ LOGI=0   Logging is OFF
⇒ LOGI=1   Logging in internal memory
⇒ LOGI=2   Logging to USB interface

11.8.3   ALC parameter

ALC parameter defines an action in case when the LOG memory is FULL

⇒ ALC=0   Automatically delete buffer when memory is FULL
⇒ ALC=1   Memory buffer must be deleted manually when it is FULL

Table of parameters:

Name	Comment
LOGI	Log storage
LOGN	Number of log events for print
ALC	Control for memory handling in case memory storage is full

Table 33: LOG parameters

Example:

♦ **Direct programming on the SIM card**

GSM-VAC4+ PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
LOGI	1	Use internal GSM-VAC4+ storage
LOGN	10	Send 10 events in case of PLOG request
ALC	1	Automatically delete memory buffer when is full

Table 34: LOG parameters example

♦ **Remote programming by SMS**
;LOGI=1;LOGN=10;ALC=1;

12 PRINT-OUT OF THE PARAMETERS

12.1 RECEIVE ALL PARAMETERS (PALL)

By sending this command to GSM-VAC4+ you receive messages with all parameters that are currently programmed in the unit.   Send: **;PALL;**

12.2 RECEIVE TELEPHONE NUMBERS (PTN)

By sending this command to GSM-VAC4+ you receive SMS message with all currently programmed telephone numbers (TN1 – TN0) .   Send: **;PTN;**

12.3 RECEIVE LINKS (PLN)

By sending this command to GSM-VAC4+ you receive SMS message with all currently programmed links (LN1 –LN11) .   Send: **;PLN;**

12.4 RECEIVE INPUT PARAMETERS (PIN)

By sending this command to GSM-VAC4+ you receive SMS message with all currently programmed Input parameters (IN1 – IN4).   Send: **;PIN;**

12.5 RECEIVE INPUT FILTER VALUE (PID)

By sending this command to GSM-VAC4+ you receive SMS message with all currently programmed Input filters (ID1 – ID4 and ION):   **;PID;**

12.6 RECEIVE DELAY BEFORE DIAL VALUE (PDD)

By sending this command to GSM-VAC4+ you receive SMS message with all currently programmed Input filters (DD1 – DD4 and DON).   Send: **;PDD;**

12.7 RECEIVE INPUT FILTER PARAMETERS (PIF)

By sending this command to GSM-VAC4+ you receive SMS message with all currently programmed filters parameters (IT1 – IT4, AR1 – AR4, IB1 – IB4) .   Send: **;PIF;**

12.8 RECEIVE CREDIT CHECK NUMBERS (PCN)

By sending this command to GSM-VAC4+ you receive SMS message with all currently programmed credit check parameters (CC1, CC2 and CC3) .   Send: **;PCN;**

12.9 RECEIVE CREDIT CHECK PARSE STRING PARAM. (PCREF)

By sending this command to GSM-VAC4+ you receive SMS message with all currently programmed credit parse string parameters (CREF, CTIM and CVODA) .   Send: **;PCREF;**

12.10 RECEIVE CREDIT STATUS FOR CC1 (PCC1)

By sending this command to GSM-VAC4+ you receive SMS message with current credit status and SMS received from the GSM provider.   Send: **;PCC1;**

12.11 RECEIVE CREDIT STATUS FOR CC2 (PCC2)

By sending this command to GSM-VAC4+ you receive SMS message with current credit status and SMS received from the GSM provider.   Send: **;PCC2;**

12.12 RECEIVE CREDIT STATUS FOR CC3 (PCC3)

By sending this command to GSM-VAC4+ you receive SMS message with current credit status and SMS received from the GSM provider.   Send: **;PCC3;**

12.13 RECEIVE CLIP IDENTIFICATION FUNCTIONS (PTC)

By sending this command to GSM-VAC4+ you receive SMS message with all currently programmed CLIP function to dedicated telephone number (TC1 – TC0).   Send: **;PTC;**

12.14 RECEIVE ACCESS TELEPHONE NUMBERS (PSL)

By sending this command to GSM-VAC4+ you receive SMS message with programmed SL level. Send: **;PSL;**

12.15 RECEIVE OUTPUT PARAMETERS (POS)

By sending this command to GSM-VAC4+ you receive SMS message with all currently programmed Outputs parameters (OS1 – OS4).   Send: **;POS;**

12.16 RECEIVE LINK FOR LOCAL ALARM OUTPUT (POD)

By sending this command to GSM-VAC4+ you receive SMS message with all currently programmed direct output alarm links (OD1 – OD11).   Send: **;POD;**

12.17 RECEIVE ALL PROGRAMMED SMS MESSAGES (P#)

By sending this command to GSM-VAC4+ you receive SMS message with all currently programmed alarm SMS messages (#0 - #4).   Send: **;P#;**

12.18 RECEIVE THE POWER LEVEL ON THE UNIT (PPWR)

By sending this command to GSM-VAC4+ you receive SMS message with current main power level in volts or current battery voltage when the unit runs on the backup battery.   Send: **;PPWR;**

12.19 RECEIVE SET-UP PARAMETERS VALUE (PPA)

By sending this command to GSM-VAC4+ you receive SMS message with all currently programmed Setup parameters (CRE, MNF, MAIN…).   Send: **;PPA;**

12.20 STATE OF THE CREDIT FOR THE PREPAID CARD

By sending this command to GSM-VAC4+ you receive SMS message with Credit amount on your prepaid SIM card.   Send: ;**PCCX;**   Where X is the number of programmed prepaid card provider.

12.21 RECEIVE CID PARAMETERS (PCID)

By sending this command to GSM-VAC4+ you receive SMS message with CID configuration. Send:v**;PCID;**

12.22 RECEIVE SIMPLE CLIP PARAMETERS (PCLP)

By sending this command to GSM-VAC4+ you receive SMS message with simple CLIP configuration.   Send: **;PCLP;**

12.23 RECEIVE LOG PARAMETERS AND EVENTS (PLOG)

By sending this command to GSM-VAC4+ you receive SMS messages with log parameters and log events.   Send: **;PLOG;**

NOTE	When working with SMS use this parameter print with care. It might generate lot of SMS messages in replay.

12.24 STATE OF THE OUTPUTS (PORC)

By sending this command to GSM-VAC4+ you receive SMS message with current outputs state. Send: **;PORC;**

12.25 STATE OF THE INPUTS (INS)

By sending this command to GSM-VAC4+ you receive SMS message with current input state. Send: **;INS;**

12.26 RECEIVE SYSTEM STATUS (PSYS)

By sending this command to GSM-VAC4+ you receive SMS message system current time and up time.   Send: **;PSYS;**

13 SYSTEM COMMANDS

Next system commands are used to help the user to control the operation of GSM-VAC4+ device.

13.1 FACTORY DEFAULT COMMAND (SDCLR)

SDCLR command is used to delete all parameters and SMS on SIM card. After delete process is completed the system will be restarted. Now GSM-VAC4+ will be loaded with factory default settings (Paragraph 20).
;SDCLR;

13.2 GSM MODULE RESTART (MRES)

MRES command is used to restart GSM module.
;MRES;

13.3 SYSTEM RESTART (SSRES)

SSRES command is used to restart GSM-VAC4+.
;SSRES;

13.4 LOG MEMORY CLEAR (LCLR)

LCLR command is used to manually clear internal memory storage of log.
;LCLR;

13.5 REMOVE ALL CLP USER (CLPCL)

CLPCL command is used to delete all CLIP users (CLP1 - CLP50).
;CLPCL;

14 CHECKING AND CHANGING SYSTEM STATUS (ON/OFF)

14.1 CHECKING SYSTEM STATUS BY SMS COMMAND

By sending this command to GSM-VAC4+ you receive SMS message with state of the system:
;SYS;

Return SMS can be:

$\Rightarrow$;SYS= ON;   System is ON (active inputs)
$\Rightarrow$;SYS= OFF;   System is OFF (inputs are not active)

14.2 CHANGING SYSTEM STATUS TO ON (SYSTEM ON)

By sending this command to GSM-VAC4+ it switches the system ON.
;SYS=1; or **;SYS=ON;**

14.3 CHANGING SYSTEM STATUS TO OFF (SYSTEM OFF)

By sending this command to GSM-VAC4+ it switches the system OFF.
;SYS=0; or **;SYS=OFF;**

15 CHECKING THE INPUT STATUS

User can check input status with the use of SMS command.

15.1 CHECKING INPUT STATUS BY SMS COMMAND

By sending this command to GSM-VAC4+ you receive SMS message with all Input status:
;INS;

Return SMS message is:
- ⇒ ;INS(1-4)=(OPEN-ON) – alarm loop is open and the input is in alarm state
- ⇒ ;INS(1-4)=(OPEN-OFF) – alarm loop is open and the alarm input is in idle state
- ⇒ ;INS(1-4)=(LOW-ON) – alarm loop is close on GND and the input is in alarm state
- ⇒ ;INS(1-4)=(LOW-OFF) – alarm loop is close on the GND and the alarm input is in idle state
- ⇒ ;INS(1-4)=(HGH-ON) – alarm loop is close on +12MCC and the input is in alarm state
- ⇒ ;INS(1-4)=(HIGH-OFF) – alarm loop is close on +12V and the alarm input is in idle state

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16 CHECKING AND CHANGING OUTPUT STATUS

User can manage outputs with the use of SMS command.

16.1 CHECKING OUTPUT STATUS BY SMS COMMAND

By sending this command to GSM-VAC4+ you receive SMS message with all Output status:
;PORC;

Return SMS message is:
- ⟹ ;Output 1=(ON-OFF) – status on output 1.
- ⟹ ;Output 2=(ON-OFF) – status on output 2.
- ⟹ ;Output 3=(ON-OFF) – status on output 3.
- ⟹ ;Output 4=(ON-OFF) – status on output 4.

16.2 ORC PARAMETER

This parameter is used to control outputs directly via SMS message.

16.3 OUTPUT REMOTE CONTROL BY SMS COMMAND

By sending this command to GSM-VAC4+ the output X is switched ON:
;ORCX=1;   For X please choose one of the output numbers from 1 to 4.

By sending this command to GSM-VAC4+ the output X is switched OFF:
;ORCX=0;   For X please choose one of the output numbers from 1 to 4.

If you would like to receive SMS message with the Output status write "+" before SMS command:
;+ORCX=1;   For X please choose one of the output numbers from 1 to 4.

Return SMS message is:
ORCX=(ON)   Where X is one of the output numbers from 1 to 4.

Table of parameters:

Name	Comment
ORC1	Control of output 1
ORC2	Control of output 2
ORC3	Control of output 3
ORC4	Control of output 4

Table 35: ORC parameters

Example:
- ♦ **Remote programming by SMS**

SMS commad	Description
;ORC1=1;	Activate output 1
;ORC2=0;	Deactivate output 2

Table 36: ORC parameters example

17 CHANGING PARAMETERS USING THE SMS COMMAND

All programming parameters for GSM-VAC4+ can also be sent by SMS command. Each SMS command should start and stop with **semicolon**. If the confirmation SMS is needed, put "+" at the beginning of the command SMS.

The first SMS is SMS with telephone numbers (TN1 – TN0). If you would like to check which telephone numbers are programmed in GSM-VAC4+ please use the following command:
;PTN;

Return SMS is (example):
;TN0=0;TN1=0;TN2=0;TN3=0;TN4=0;TN5=0;TN6=0;TN7=0;TN 8=0;TN9=0;

If you would like to enter telephone numbers in to GSM-VAC4+ you can use the following example:
**;
TN0=040713470;TN1=+38643364850;TN2=041255630;TN3=0;TN4=0;TN5=0;TN6=0;TN 7=0;TN8=0;TN9=0;**

If you would like to receive confirmation SMS write "+" before SMS command:
**;
+TN0=040713470;TN1=+38643364850;TN2=041255630;TN3=0;TN4=0;TN5=0;TN6=0;T N7=0;TN8=0;TN9=0;**

Return SMS from GSM-VAC4+ is:
**;
TN0=040713470;TN1=+38643364850;TN2=041255630;TN3=0;TN4=0;TN5=0;TN6=0;TN 7=0;TN 8=0;TN9=0;**

NOTE	You can use the same programming procedure for all parameters.

NOTE	It is also possible to change different parameters with one SMS. Consider that the SMS message should not be longer than **160 characters** (included space characters).

If you would like to change the following parameters **TN1, IN1, IN2, OS3, OS4; ID1, LN1 and CRE** and would like to receive confirmation SMS, try next example:
;+TN1=+38640713470;IN1=1;IN2=1;OS3=15;ID1=120;LN1=1;CRE=4;

Send SMS message to GSM-VAC4+ telephone number and in a few seconds you receive SMS message from GSM-VAC4+. The sentence of the SMS must be the same as the one you have sent to GSM-VAC4+ before.

18 CONFIGURATION EXAMPLES

Here are listed few simple configuration examples.

18.1 ALARM CONFIGURATION

To send alarm on input 1 please set these parameters:

;LN1=123;TN1=040211411;TN2M=041211511;TN3=051334556;

With these configuration alarm notification will be send to TN1 (voice and SMS), TN2 (only SMS) and TN3 (only voice).

18.2 CID EVENT REPORTING

This example represents how to enable CID function for GSM-VAC4+ event reporting. The data will be sending to 1 CMS.

;CID=1;CIN=15;COUT=12;TN11=042340880;

19 TECHNICAL SPECIFICATIONS

Description	Value
Power Supply	13,8 - 14,7V DC
Battery backup (optional)	12V/1,2Ah
Current consumption - peak	2A
Current consumption - transmitting mode	250mA
Current consumption - idle mode	90mA
QUAD band GSM module	850/900/1800/1900 MHz
PCB dimensions	105 × 80 mm
Unit dimensions	120 × 170 × 60 mm
Unit dimensions - IP56 box	155 × 220 × 82 mm
Antenna SMA	1
Weight (without battery)	550g
Alarm inputs	4
Alarm outputs (open collector)	4
ON/OFF input	1
12V DC Power Supply output	Y
Backup battery input	Y
No. of alarm SMS per unit	4
No. of prerecorded messages	4
Programmed telephone numbers	10
Anti-tamper protection	Y
CLIP numbers	50
Event log buffer	1000

Table 37: GSM-VAC4+ - Technical specifications

20 DEFAULT SETTINGS ON GSM-VAC4+

GSM-VAC4+ PROGRAMMING TABLE		
Name	**Default Value**	**Short Description**
TN1	Empty	Telephone number 1
TN2	Empty	Telephone number 2
TN3	Empty	Telephone number 3
TN4	Empty	Telephone number 4
TN5	Empty	Telephone number 5
TN6	Empty	Telephone number 6
TN7	Empty	Telephone number 7
TN8	Empty	Telephone number 8
TN9	Empty	Telephone number 9
TN0	Empty	Telephone number 0
IN1	0	Input 1 control
IN2	0	Input 2 control
IN3	0	Input 3 control
IN4	0	Input 4 control
ION	4	System ON/OFF control
OS1	1	Output 1 mode
OS2	1	Output 2 mode
OS3	1	Output 3 mode
OS4	1	Output 4 mode
OD1	0	Input 1 direct output link
OD2	0	Input 2 direct output link
OD3	0	Input 3 direct output link
OD4	0	Input 4 direct output link
OD6	0	GSM network error direct output link
OD7	4	System tamper direct output link
OD8	0	System ON/OFF direct output link
OD9	0	NAC direct output link
OD11	0	Listen in indication
OD11	0	CID transfer error
LN1	Empty	Input 1, link to tel. numbers
LN2	Empty	Input 2, link to tel. numbers
LN3	Empty	Input 3, link to tel. numbers
LN4	Empty	Input 4, link to tel. numbers
LN5	Empty	Main power indication, link to tel. numbers
LN6	Empty	Battery power indication, link to tel. numbers
LN7	Empty	Periodic SMS, link to tel. numbers
LN8	Empty	SIM card validity and credits status, link to tel. numbers
LN9	Empty	System tamper, link to tel. numbers
LN10	Empty	NAC, link to tel. numbers
LN11	Empty	LOG status, link to tel. numbers
ID1	1	Input 1 delay filter on input
ID2	1	Input 2 delay filter on input
ID3	1	Input 3 delay filter on input
ID4	1	Input 4 delay filter on input
DON	1	System ON/OFF delay filter input

GSM-VAC4+ PROGRAMMING TABLE		
Name	**Default Value**	**Short Description**
DD1	0	Input 1 delay before dialing
DD2	0	Input 2 delay before dialing
DD3	0	Input 3 delay before dialing
DD4	0	Input 4 delay before dialing
DDN	0	System ON/OFF delay before dialing
TC1	0	Advanced CLIP telephone number 1 function
TC2	0	Advanced CLIP telephone number 2 function
TC3	0	Advanced CLIP telephone number 3 function
TC4	0	Advanced CLIP telephone number 4 function
TC5	0	Advanced CLIP telephone number 5 function
TC6	0	Advanced CLIP telephone number 6 function
TC7	0	Advanced CLIP telephone number 7 function
TC8	0	Advanced CLIP telephone number 8 function
TC9	0	Advanced CLIP telephone number 9 function
TC0	0	Advanced CLIP telephone number 10 function
SL	0	Security level
IT1	180	Predefined time for alarm filtering, input 1
IT2	180	Predefined time for alarm filtering, input 2
IT3	180	Predefined time for alarm filtering, input 3
IT4	180	Predefined time for alarm filtering, input 4
AR1	5	Number of allowed events in predefined time, input 1
AR2	5	Number of allowed events in predefined time, input 2
AR3	5	Number of allowed events in predefined time, input 3
AR4	5	Number of allowed events in predefined time, input 4
IB1	3600	Input blocked time for alarm filtering, input 1
IB2	3600	Input blocked time for alarm filtering, input 2
IB3	3600	Input blocked time for alarm filtering, input 3
IB4	3600	Input blocked time for alarm filtering, input 4
#0	"User Location", 1111	SMS main head text
#1	"Input1", 130	SMS input 1 text
#2	"Input2", 110	SMS input 2 text
#3	"Input3", 120	SMS input 3 text
#4	"Input4", 100	SMS input 4 text
CC1	Empty	Check credit Num 1
CC2	Empty	Check credit, TIM Italy
CC3	Empty	Check credit, Vodafone Italy
CRE	3	Number of dialing attempts
UDC	Empty	Tel. number of GSM-VAC4+ device
HTN	1	Hidden telephone number
SCV	0	SIM card time validity
TST	0	Periodic test SMS timeout
TSTT	0	Test SMS reference point
MNF	0	Network connection type
MIC1	15	Microphone 1 volume setting (0 - 40)
MIC2	15	Microphone 2 volume setting (0 - 40)
SPK	12	Speaker volume setting (0 - 20)
BIDI	0	Special predefined MIC/SPK group settings
AUD	0	Different audio modes
LCV	4	Low credit value

GSM-VAC4+ PROGRAMMING TABLE		
Name	**Default Value**	**Short Description**
LNG	0	Language selection
MAIN	5	Main power down input filter
BATT	20	Battery power loss input filter
RTN	45	Ring time before going to next number
LOT	90	Connection time out value
CID	0	Contact ID enable/disable
CIN	15	Contact ID input level(0 - 20)
COUT	15	Contact ID output level(0 – 40)
TN11	Empty	Contact ID telephone number 1
TN12	Empty	Contact ID telephone number 2
LOGN	5	Number of log events for printing out
LOGI	0	Log storage place
ALC	1	Automatic log clear
ARST	0	Automatic reset timeout
LED	1	Led function enable/disable
ADF	90	Auto dial function
REG	30	Out of GSM registration
CREF	"EUR"	Parse text(contact support)
CTIM	"EURO"	Parse text(contact support)
CVODA	"DISPON. E."	Parse text(contact support)
SPO	1	SIM card starting position
CLPEN	0	Enable CLIP functionality
CLPI	0	Precondition for CLIP function
CLPOU	1	Control output pin when CLIP event
CLP1	Empty	CLIP number 1
.	.	
.	.	
.	.	
CLP50	Empty	CLIP number 50

Table 38: GSM-VAC4+ - Default settings.

21 CONTACTS

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