

ZEUS4-MC

***PSTN/GSM/GPRS INTERFACE &
SMS 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

ZEUS4-MC can be used as a backup for standard PSTN telephone line in the event of failure or as a replacement for standard telephone line when it is not possible to set it up. **ZEUS4-MC** acts as normal PSTN telephone line when communicating with Central Monitoring Station through Contact ID protocol, but it uses GSM network.

ZEUS4-MC can be used in connection with different telephone equipment such as:

- Alarm panels with built-in digital communicator
- Automatic voice, digital or signal telephone dialers
- Standard telephone sets
- PABX – private telephone exchanges

3 FEATURES AND APPLICATIONS

Features:

- ⇒ Built-in 4 band GSM module
- ⇒ Full transparent event reporting through Contact ID protocol
- ⇒ Contact ID protocol built-in
- ⇒ Standard telephone line backup
- ⇒ Telephone line simulator
- ⇒ 4 alarm inputs
- ⇒ GSM Priority input
- ⇒ System ON/OFF input
- ⇒ 4 remotely/locally controlled trouble status output
- ⇒ SMS alarm and service messages
- ⇒ LEDs for easy monitoring
- ⇒ 10 telephone numbers for alarm reporting
- ⇒ PC programming by USB port
- ⇒ Download programming by SMS
- ⇒ 10 Caller ID remote & access control users
- ⇒ Up to 1000 event log buffer
- ⇒ Prepaid cards credit and value checking
- ⇒ Security protected for incoming calls
- ⇒ Main and Battery power control
- ⇒ Events can be transferred to the server installed in Central Monitoring Station via GPRS-TCP/IP connection.

Applications:

- ⇒ Backup for standard PSTN telephone line
- ⇒ Standalone telecommunication unit (instead of PSTN line)
- ⇒ Money save in offices: GSM to GSM calls from desk phone (FCT – Fixed Cellular Terminal)
- ⇒ Alarm panels with built-in digital communicator
- ⇒ Automatic voice and digital telephone dialers
- ⇒ Standard telephone sets
- ⇒ PABX – private telephone branch exchanges

4 START UP

**VERY
IMPORTANT**

USE A **MICRO SIM CARD** (micro-SIM, see the picture→)
WITH MEMORY FOR UP TO 250 CONTACTS!



⇒ Insert SIM card to be used for ZEUS4-MC in your personal mobile phone.

IMPORTANT

ERASE THE PIN CODE!

- ⇒ Insert SIM card into SIM holder on the ZEUS4-MC device. The unit must be switched OFF when you insert the SIM!
- ⇒ Connect the antenna to antenna connector.
- ⇒ Connect alarm inputs and outputs to ZEUS4-MC. 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.
- ⇒ ZEUS4-MC unit is now ready to operate.

IMPORTANT

Before sending any SMS commands to ZEUS4-MC device, ZEUS4-MC 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 14,7V DC!

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!
- 3s ON/3s OFF when PSTN line is not connected on the terminals La/Lb

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 ZEUS4-MC is not new and it already has some data stored in the phone book memory.

By sending this SMS to ZEUS4-MC 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 ZEUS4-MC all programmed data is erased from the SIM card, including SMS messages!

7 CONNECTING DIAGRAM

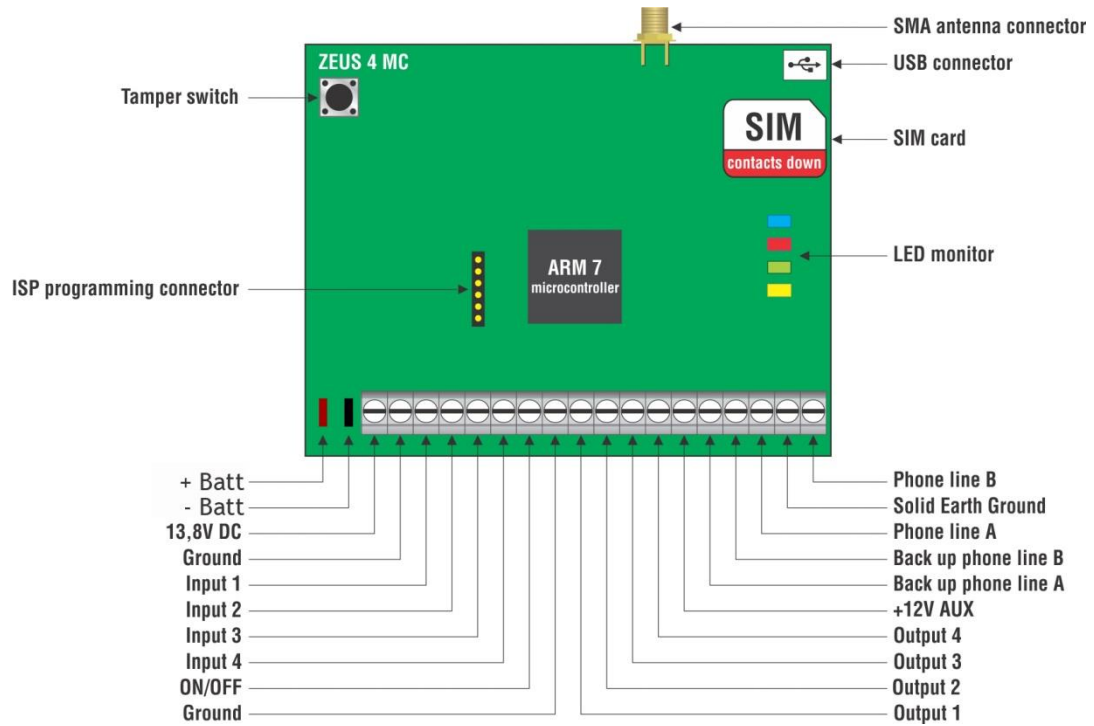


Figure 1: Connection diagram

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.

NOTE

By default the Input 4 has “GSM NETWORK PRIORITY” function. When you trigger the Input 4 (look the IN parameters) ZEUS4-MC automatically switches to the GSM network even if the PSTN line is still active. For the GSM priority function the IN parameter must be 4, 5 or 6!

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.

Ta/Tb - Terminal blocks for user to connect his equipment (telephone, alarm panels...) to the ZEUS4-MC. In case that standard telephone line is connected to La/Lb block, than ZEUS4-MC just reroutes data from Ta/Tb to La/Lb. In case that standard line is not present on La/Lb block, or GSM priority function is active, ZEUS4-MC is used to transfer data (via GSM module). The data path switch in case in standard line failure is done automatically.

La/Lb - Terminal blocks for standard telephone line connecting. It is possible to connect telephone line from public telephone network (PSTN) or internal telephone line from office telephone exchange (PABX).

9 PROGRAMMING OPTIONS

ZEUS4-MC device supports different types of programming:

- ⇒ To program ZEUS4-MC parameters put the SIM card into your personal GSM phone. Add programming parameters in **SIM Card “Phone Book”**.
- ⇒ You can program ZEUS4-MC remotely by SMS command.
- ⇒ You can program ZEUS4-MC with USB key and SIM manager.
- ⇒ You can program ZEUS4-MC directly via USB interface.

10 ZEUS4-MC PARAMETERS

To support versatile functionality of ZEUS4-MC different parameters are used. The parameters are divided in logical sections and are described in the following chapters.

10.1 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 ZEUS4-MC.

NOTE

When the SL level is 0, an access to the ZEUS4-MC is possible from any phone!

IMPORTANT

Before any SL number is programmed the ZEUS4-MC 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

ZEUS4-MC PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
SL	5	Numbers stored under parameters TN1 to TN5 have access to unit

Table 2: Example SL parameters

◆ Remote programming by SMS ;SL=5;

10.2 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.

10.2.1 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.

- ⇒ IN = 0 – Normal Open – triggered with negative voltage (GND)
- ⇒ IN = 1 – Normal Close – breaking negative or positive voltage loop
- ⇒ IN = 2 – Normal Open – triggered with positive voltage (+ 12MCC)
- ⇒ IN = 3 – Input disable
- ⇒ IN = 4 = IN = 0 + input reset SMS
- ⇒ IN = 5 = IN = 1 + input reset SMS
- ⇒ IN = 6 = IN = 2 + input reset SMS

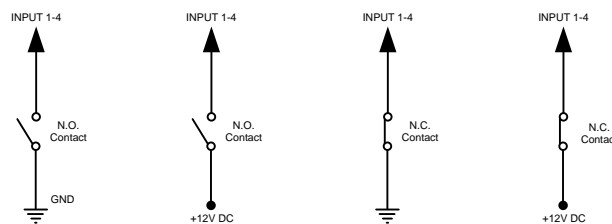


Figure 2: Input Connection diagram

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

ZEUS4-MC 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=4;IN1=0;IN2=1;IN3=2;IN4=4;

10.2.2 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**

ZEUS4-MC 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;

10.2.3 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**

ZEUS4-MC 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;

10.2.4 TN parameters

Telephone numbers for remote alarm reporting are listed as TN parameters. Remote alarm reporting on ZEUS4-MC is done via SMS messages or VOICE call.

ZEUS4-MC sends an alarm beep, an alarm SMS message or both. If the corresponding name ends with the letter “V” only alarm beep is sent and if the name ends with the letter “M” only SMS message is sent.

Table of parameters:

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

Example:

When you need to send an alarm beep message and SMS message to the first telephone number and only alarm beep message to the second one and only SMS message to the third one. (See the table below).

◆ **Direct programming on the SIM card**

ZEUS4-MC PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
TN1	042376678	1st telephone number (alarm beep & SMS message)
TN2V	040719479	2nd telephone number (alarm beep only)
TN3M	040308350	3rd telephone number (SMS message only)

Table 10: TN parameters example

◆ **Remote programming by SMS**

;TN1=042376678;TN2V=040719479;TN3M=040308350;

10.2.5 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 1 st alarm input (TN1 – TN0)
LN2	Input & telephone No. linking for 2 st alarm input (TN1 – TN0)
LN3	Input & telephone No. linking for 3 st alarm input (TN1 – TN0)
LN4	Input & telephone No. linking for 4 st 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**

ZEUS4-MC 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;

10.2.6 MAIN and BATT parameter

ZEUS4-MC 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.

ZEUS4-MC 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 ZEUS4-MC sends an SMS message with the following text: “Low Battery restored”.

NOTE

The “Low battery” event is send when the ZEUS4-MC operates only with a backup battery and it is not connected on the Main Power Supply.

Parameter MAIN determinates time out control after which the ZEUS4-MC will send “Main Power Lost alarm”. Time can be set between 1 and 9999 seconds.

Parameter BATT determinates time out control after which the ZEUS4-MC 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

ZEUS4-MC 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;

10.2.7 OS parameters

ZEUS4-MC 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 1 st output
OS2	Control for the 2 nd output
OS3	Control for the 3 rd output
OS4	Control for the 4 th output

Table 15: OS parameters

Example:

◆ Direct programming on the SIM card

ZEUS4-VD PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
OS1	1	1 st Output – Bistable toggle mode
OS4	14	4 th 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;

10.2.8 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
OD5	Telephone line failure
OD6	GSM network error
OD7	System tamper
OD8	System ON/OFF
OD9	Unauthorized call/SMS
OD11	CID transfer error

Table 17: OD parameters

Example:

◆ **Direct programming on the SIM card**

ZEUS4-MC 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;

10.2.9 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 triggered in **IT** time

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

Table of parameters:

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

ZEUS4-MC 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 ZEUS4-MC resets bypass function.

10.2.10 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;

10.2.11 DTMF REMOTE COMMANDS

When ZEUS4-MC enters VOICE call in alarm report function 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.

REMOTE COMMAND	ACTION DESCRIPTION
*	Does not call this telephone number again
#	Complete interruption of the dialing procedure

Table 22: ZEUS4-MC DTMF commands

10.3 ADVANCED CLIP FUNCTION

ZEUS4-MC support advanced CLIP (Calling Line Identification Presentation) function with confirmation. Benefit of this CLIP function is that it that the user can control the different function on ZEUS4-MC 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.

10.3.1 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 ZEUS4-MC 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 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**

ZEUS4-MC PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
TC1	3	1 st CLIP activates the Output 3
TC2	5	2 nd CLIP switches system OFF/ON
TC3	6	3 rd CLIP calls back from device to user

Table 24: TC parameters example

◆ Remote programming by SMS`;TC1=3;TC2=5;TC3=6;`

10.4 CLIP FUNCTION

The second CLIP function that ZEUS4-MC supports is simple CLIP (Calling Line Identification Presentation) 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 ZEUS4-MC.

NOTE

To activate simple CLIP function just call ZEUS4-MC device. The device will automatically disconnect the call and control the output.

10.4.1 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 ZEUS4-MC

10.4.2 CLPOU parameter

Parameter is used to define which output should ZEUS4-MC trigger if the number called the device is on the CLP list

- ⇒ Trigger one of the ZEUS4-MC Outputs (parameter 1-4)

10.4.3 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 ZEUS4-MC Inputs (parameter 1-4), with 0 this precondition is disabled.

10.4.4 CLP1 to CLP10 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
.	.
.	.
.	.
CLP10	CLIP Telephone number for 10. user

Table 25: CLIP parameters

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

ZEUS4-MC 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: Example CLIP parameters

- ◆ **Remote programming by SMS**
;CLPEN=1;CLPOU=2;CLP1=042340880;CLP3=040340880;

10.5 PREPAID CARD CREDIT AND VALIDITY INFORMATION

ZEUS4-MC can be used with prepaid SIM cards and its limitations. To be able to overcome this limitation of the prepaid SIM cards, ZEUS4-MC offers the possibility of automatic checking mechanism for credit and time expiration.

NOTE

ZEUS4-MC 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.

10.5.1 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 ZEUS4-MC 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.

10.5.2 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 Italian TIM mobile provider
- ⇒ CC3 - This method is dedicated to Italian Vodafone mobile provider

10.5.3 CREF, CTIM, CVODA parameters

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

- ⇒ CREF - Pars string for the replays received from CC1 number
- ⇒ CVODA - Pars string for the replays received from CC2 number
- ⇒ 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 parameter

Example:

◆ Direct programming on the SIM card

ZEUS4-MC PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
CC1	*448#	Si.mobil
CC2	4916	TIM Italy
CC3	404	Vodafone Italy
LCV	4	Low credit message will be send bellow 4

Table 28: Credit checking example

◆ Remote programming by SMS

;CC1=*448#;CC2=4916;CC3=404;LCV=4;

10.6 SET-UP PARAMETERS

Different parameters are used to support versatile functionality of ZEUS4-MC.

10.6.1 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.

10.6.2 UDC parameter

Parameter is used to synchronise ZEUS4-MC clock to GSM network clock. User must enter here the number of the ZEUS4-MC SIM card (Telephone number of ZEUS4-MC device).

10.6.3 HTN parameter

Hidden telephone number. This function (“0” value) is used in order to conceal the telephone number of the ZEUS4-MC device. Value “1” means that the number is displayed.

10.6.4 TST parameter

A test SMS is sent periodically. ZEUS4-MC 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.

10.6.5 TSTT parameter

TSTT parameter is used to define reference point for sending test message. If this parameter is set than after restart of the ZEUS4-MC 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

10.6.6 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

10.6.7 AUD parameter

AUD parameter enables you to change between different audio modes on ZEUS4-MC device.

- ⇒ AUD = 0 - Optimized for “voice data” transfer
- ⇒ AUD = 1 - Optimized for plain audio call

10.6.8 MIC1 parameter

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

10.6.9 SPK parameter

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

10.6.10 RTN parameter

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

10.6.11 LOT parameter

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

10.6.12 ARST parameter

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

10.6.13 LNG parameter

LNG parameter switches between the preprogrammed languages:

- ⇒ 0 - English
- ⇒ 1 - Italian
- ⇒ 2 - Slovenian
- ⇒ 3 - Croatian
- ⇒ 4 - Dutch
- ⇒ 5 - German
- ⇒ 6 - Spanish

10.6.14 LED parameter

LED parameter enables you to turn indication LEDs on ZEUS4-MC ON or OFF (0 – led OFF, 1 – led ON)

10.6.15 BIDI parameter

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

10.6.16 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.

10.6.17 SPO parameter

SPO parameter is used to define the starting point for storage of ZEUS4-MC 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.

10.6.18 REG parameter

REG parameter is used to define time out (in seconds) for how long may ZEUS4-MC 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	ZEUS4-MC 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 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**

ZEUS4-MC PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
CRE	2	Number of dialing attempts - 2
HTN	0	Hidden telephone number of the ZEUS4-MC
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 ZEUS4-MC is 60s out of the GSM registration.

Table 30: Set-up parameters example

◆ **Remote programming by SMS**

;CRE=2;HTN=0;MNF=29340;LNG=1;MIC1=15;SPK=8;
TST=24;TSTT=14;REG=60;

10.7 CONTACT ID EVENT REPORTING

ZEUS4-MC is capable to send all of its events in Contact ID form to CMS. Next parameters are used to support this function.

10.7.1 CID parameter

CID parameter is used to enable/disable this function.

10.7.2 CIN parameter

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

10.7.3 COUT parameter

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

10.7.4 TN11 parameter

TN11 parameter represents primary telephone number for CID reporting.

10.7.5 TN12 parameter

TN12 parameter represents secondary telephone number for CID reporting.

Table of parameters:

Name	Comment
CID	CID function enable/disable parameter
CIN	CID incoming 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**

ZEUS4-MC 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;

10.8 EVENT LOG PARAMETERS

ZEUS4-MC has a small set of parameters to manage log memory.

10.8.1 LOGN parameter

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

10.8.2 LOGI parameter

LOGN parameter is used to enable and define ZEUS4-MC log storage.

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

10.8.3 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**

ZEUS4-MC PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
LOGI	1	Use internal ZEUS4-MC 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;

10.9 LINE INTERFACE CONFIGURATION

ZEUS4-MC support some special function related to its POTS interface.

10.9.1 LAN parameter

With LAN parameter user can automatically add additional numbers before the telephone number it had dialed. If the number that the user has dialed starts with 0 and the LAN value is not empty, than this LAN value will be placed before the dialed number before ZEUS4-MC will place a call.

10.9.2 CLI parameter

ZEUS4-MC with additional external resistor can support CLI function on Ta/Tb connection points. CLI parameter is used to enable this function on software level.

NOTE

ZEUS4-MC supports DTMF CLI representation(ETSI).

10.9.3 GPR parameter

ZEUS4-MC is always checking the status of POST line interface connected. Device will automatically divert to GSM interface if POTS line is lost. In addition the user has the option to

request this divert manually with the use one of the input on ZEUS4-MC device. Input is selected with the GPR parameter.

10.9.4 OPR parameter

OPR parameter is used if you use ZEUS4-MC as a part of PABX system and you need to place additional number before the number to call out. OPR value is set to this additional number and the ZEUS4-MC will automatically cut off this number before making a call.

10.9.5 DRC parameter

With this parameters used can enable full DTMF control support.

NOTE Not advisable when using ZEUS4-MC as a transparent voice system.

Table of parameters:

Name	Comment
LAN	Automatically placing numbers before the dialed number
CLI	CID incoming volume setting
GPR	GSM priority input
OPR	Remove call out number in PABX network
DRC	Control of DTMF support

Table 35: Line interface parameters

Example:

◆ Direct programming on the SIM card

ZEUS4-MC 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 36: Line interface parameters example

◆ Remote programming by SMS ;CID=1;CIN=12;TN11=042340880;

11 PRINT-OUT OF THE PARAMETERS

11.1 RECEIVE ALL PARAMETERS (PALL)

By sending this command to ZEUS4-MC you receive messages with all parameters that are currently programmed in the unit:

;PALL;

11.2 RECEIVE LINE INTERFACE CONFIGURATION (PMC)

By sending this command to ZEUS4-MC you receive SMS message with line interface configuration like LAN, OPR ...:

;PMC;

11.3 RECEIVE TELEPHONE NUMBERS (PTN)

By sending this command to ZEUS4-MC you receive SMS message with all currently programmed telephone numbers (TN1 – TN0):

;PTN;

11.4 RECEIVE LINKS (PLN)

By sending this command to ZEUS4-MC you receive SMS message with all currently programmed links (LN1 – LN11):

;PLN;

11.5 RECEIVE INPUT PARAMETERS (PIN)

By sending this command to ZEUS4-MC you receive SMS message with all currently programmed Input parameters (IN1 – IN4):

;PIN;

11.6 RECEIVE INPUT FILTER VALUE (PID)

By sending this command to ZEUS4-MC you receive SMS message with all currently programmed Input filters (ID1 – ID4 and ION):

;PID;

11.7 RECEIVE DELAY BEFORE DIAL VALUE (PDD)

By sending this command to ZEUS4-MC you receive SMS message with all currently programmed Input filters (DD1 – DD4 and DON):

;PDD;

11.8 RECEIVE INPUT FILTER PARAMETERS (PIF)

By sending this command to ZEUS4-MC you receive SMS message with all currently programmed filters parameters (IT1 – IT4, AR1 – AR4, IB1 – IB4):

;PIF;

11.9 RECEIVE CREDIT CHECK NUMBERS (PCN)

By sending this command to ZEUS4-MC you receive SMS message with all currently programmed credit check parameters (CC1, CC2 and CC3):

;PCN;

11.10 RECEIVE CREDIT CHECK PARSE STRING PARAMATERS (PCREF)

By sending this command to ZEUS4-MC you receive SMS message with all currently programmed credit parse string parameters (CREF, CTIM and CVODA):

;PCREF;

11.11 RECEIVE CREDIT STATUS FOR CC1 (PCC1)

By sending this command to ZEUS4-MC you receive SMS message with current credit status and SMS received from the GSM provider:

;PCC1;

11.12 RECEIVE CREDIT STATUS FOR CC2 (PCC2)

By sending this command to ZEUS4-MC you receive SMS message with current credit status and SMS received from the GSM provider:

;PCC2;

11.13 RECEIVE CREDIT STATUS FOR CC3 (PCC3)

By sending this command to ZEUS4-MC you receive SMS message with current credit status and SMS received from the GSM provider:

;PCC3;

11.14 RECEIVE CLIP IDENTIFICATION FUNCTIONS (PTC)

By sending this command to ZEUS4-MC you receive SMS message with all currently programmed CLIP function to dedicated telephone number (TC1 – TC0)

;PTC;

11.15 RECEIVE ACCESS TELEPHONE NUMBERS (PSL)

By sending this command to ZEUS4-MC you receive SMS message with programmed SL level:

;PSL;

11.16 RECEIVE OUTPUT PARAMETERS (POS)

By sending this command to ZEUS4-MC you receive SMS message with all currently programmed Outputs parameters (OS1 – OS4):

;POS;

11.17 RECEIVE LINK FOR LOCAL ALARM OUTPUT (POD)

By sending this command to ZEUS4-MC you receive SMS message with all currently programmed direct output alarm links (OD1 – OD11):

;POD;

11.18 RECEIVE ALL PROGRAMMED SMS MESSAGES (P#)

By sending this command to ZEUS4-MC you receive SMS message with all currently programmed alarm SMS messages (#0 - #4):

;P#;

11.19 RECEIVE THE POWER LEVEL ON THE UNIT (PPWR)

By sending this command to ZEUS4-MC you receive SMS message with current main power level in volts or current battery voltage when the unit runs on the backup battery:

;PPWR;

11.20 RECEIVE SET-UP PARAMETERS VALUE (PPA)

By sending this command to ZEUS4-MC you receive SMS message with all currently programmed Setup parameters (CRE, MNF, MAIN...):

;PPA;

11.21 STATE OF THE CREDIT FOR THE PREPAID CARD

By sending this command to ZEUS4-MC you receive SMS message with Credit amount on your prepaid SIM card:

;PCCX;

Where X is the number of programmed prepaid card provider.

11.22 RECEIVE CID PARAMETERS (PCID)

By sending this command to ZEUS4-MC you receive SMS message with CID configuration.

;PCID;

11.23 RECEIVE SIMPLE CLIP PARAMETERS (PCLP)

By sending this command to ZEUS4-MC you receive SMS message with simple CLIP configuration.

;PCLP;

11.24 RECEIVE LOG PARAMETERS AND EVENTS (PLOG)

By sending this command to ZEUS4-MC you receive SMS messages with log parameters and log events.

;PLOG;

NOTE

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

11.25 STATE OF THE OUTPUTS (PORC)

By sending this command to ZEUS4-MC you receive SMS message with current outputs state.

;PORC;

11.26 STATE OF THE INPUTS (INS)

By sending this command to ZEUS4-MC you receive SMS message with current input state.
;PINS;

11.27 RECEIVE SYSTEM STATUS (PSYS)

By sending this command to ZEUS4-MC you receive SMS message system current time and up time.
;PSYS;

12 SYSTEM COMMANDS

Next system commands are used to help the user to control the operation of ZEUS4-MC device.

12.1 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 ZEUS4-MC will be loaded with factory default settings (Paragraph 23).

;SDCLR**;**

12.2 GSM MODULE RESTART (MRES)

MRES command is used to restart GSM module.

;MRES**;**

12.3 SYSTEM RESTART (SSRES)

SSRES command is used to restart ZEUS4-MC.

;SSRES**;**

12.4 LOG MEMORY CLEAR (LCLR)

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

;LCLR**;**

12.5 REMOVE ALL CLP USER (CLPCL)

CLPCL command is used to delete all CLIP users (CLP1 – CLP10).

;CLPCL**;**

13 CHECKING AND CHANGING SYSTEM STATUS (ON/OFF)

13.1 CHECKING SYSTEM STATUS BY SMS COMMAND

By sending this command to ZEUS4-MC you receive SMS message with state of the system:
;SYS;

Return SMS can be:

- ⇒ **;SYS= ON;** System is ON (active inputs)
- ⇒ **;SYS= OFF;** System is OFF (inputs are not active)

13.2 CHANGING SYSTEM STATUS TO ON (SYSTEM ON)

By sending this command to ZEUS4-MC it switches the system ON.
;SYS=1; or **;SYS=ON;**

13.3 CHANGING SYSTEM STATUS TO OFF (SYSTEM OFF)

By sending this command to ZEUS4-MC it switches the system OFF.
;SYS=0; or **;SYS=OFF;**

14 CHECKING THE INPUT STATUS

User can check input status with the use of SMS command

14.1 CHECKING INPUT STATUS BY SMS COMMAND

By sending this command to ZEUS4-MC 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

15 CHECKING AND CHANGING OUTPUTS

User can manage outputs with the use of SMS command

15.1 CHECKING OUTPUT STATUS BY SMS COMMAND

By sending this command to ZEUS4-MC 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.

15.2 OUTPUT REMOTE CONTROL BY SMS COMMAND

By sending this command to ZEUS4-MC the output X is switched ON:
;ORCx=1; or **;ORCx=ON;**

For x please choose one of the output numbers from 1 to 4.

By sending this command to ZEUS4-MC the output X is switched OFF:
;ORCx=0; or **;ORCx=OFF;**

For x please choose one of the output numbers from 1 to 4.

16 CHANGING PARAMETERS USING THE SMS COMMAND

All programming parameters for ZEUS4-MC 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 ZEUS4-MC 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 ZEUS4-MC you can use the following example:

;TN0=040713470;TN1=+38643364850;TN2=041255630;TN3=0;TN4=0;TN5=0;TN6=0;TN7=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;TN7=0;TN8=0;TN9=0;

Return SMS from ZEUS4-MC is:

;TN0=040713470;TN1=+38643364850;TN2=041255630;TN3=0;TN4=0;TN5=0;TN6=0;TN7=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 ZEUS4-MC telephone number and in a few seconds you receive SMS message from ZEUS4-MC. The sentence of the SMS must be the same as the one you have sent to ZEUS4-MC before.

17 CONFIGURATION EXAMPLES

Here are listed few simple configuration examples.

17.1 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).

17.2 CID EVENT REPORTING

This example represents how to enable CID function for ZEUS4-MC event reporting. The data will be sending to 1 CMS.

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

18 GPRS-TCP/IP CONNECTION – BASICS

This information is used to provide the user with compact description how to make a GPRS-TCP/IP connection for event reporting and remote programming/status pooling. The ZEUS4-MC is the CLIENT side of the connection. On the receiving side (CMS) you can use your own GPRS-TCP/IP server or you can use provided server application (for example Kronos.NET).

The ZEUS4-MC is used as simple control panel which is using for event reporting GPRS-TCP/IP connection.

In addition ZEUS4-MC supports all events reporting functions, beside that it can be used to transmit all events from the alarm control panel to the server. The alarm control panel is connected to the ZEUS4-MC device via TIP/RING terminals. ZEUS4-MC device supports all Alarm Control Panels with Ademco Contact ID protocol.

19 GPRS-TCP/IP CONFIGURATION

To start the GPRS-TCP/IP connection user must set just a few parameters. They are described below.

19.1 IPEN

This parameter is used to enable GPRS-TCP/IP connection.

Possible values:

- 0 – GPRS-TCP/IP connection is disabled
- 1 – GPRS-TCP/IP connection is enabled

19.2 IPCID

This parameter is used to enable sending local events (built in CID) and events received as Ademco Contact ID format from the alarm control panel.

Possible values:

- 0 – Event sending over GPRS-TCP/IP connection is disabled
- 1 – Event sending over GPRS-TCP/IP connection is enabled

19.3 IPAPN

This is an Access Point Name for GPRS-TCP/IP connection.

Example:

;IPAPN=internet.simobil.si; ... setting for Si.mobil Slovenia (MCC/MNC code: 29340)

NOTE

If this parameter is not set the device will not try to initiate GPRS-TCP/IP connection.

19.4 IPUSR

This is a user name for GPRS-TCP/IP connection.

Example:

;IPUSR=simobil; ... setting for Si.mobil Slovenia (MCC/MNC code: 29340)

19.5 IPPSW

This is a user password for GPRS-TCP/IP connection.

Example:

;IPPSW=internet; ... setting for Si.mobil Slovenia(MCC/MNC code: 29340)

19.6 IPADD1

This is a primary IP address of the GPRS-TCP/IP server. Initially the ZEUS4-MC will connect to primary IP address. If the connection fails the ZEUS4-MC will try to connect to the IP address number 2. If the connection to IP address number 2 is not successful the ZEUS4-MC will try to reconnect to IP address number 1 after 1 min time out. This cycling will be done indefinitely or until the ZEUS4-MC reaches the connection and sends out events in the memory.

Example:

```
IPADD1=192.168.1.1;
```

19.7 IPADD2

This is a secondary IP address of the GPRS-TCP/IP server.

Example:

```
IPADD2=192.168.1.2;
```

NOTE

At least one parameter must be set (IPADD1 or IPADD2) for the device to try to initiate IP connection.

19.8 IPPORT

This is a port number on the TCP server.

NOTE

If this parameter is not set the device will not try to initiate IP connection.

19.9 IPDNS1

This is a primary address of DNS server. This is optional parameter usually not needed

19.10 IPDNS2

This is a secondary address of the DNS server. This is optional parameter and usually client does not need to set it.

19.11 IPMOD

This parameter is used to define connection mode. Device supports two possible modes of connection. First mode is used to connect to the server only when is needed (when reporting events) this is a preferred mode, because it limits the traffic load on the server side. Second mode is used when “all the time” connection is needed, the device keeps the connection alive all the time (ZEUS S-Lite-GPRS automatically reconnects in case of errors).

Possible values:

- 0 – Connection established when needed
- 1 – Permanent connection.

19.12 IPPR

This parameter is used so to select connection protocol for event reporting.

NOTE

Contact your sales office for detail information about different options!

19.13 IPCRE

This parameter is used to define number of resending attempts in case of sending errors. If value defined is reached all current events, which were not send, are skipped.

Possible values:

- 0 – resending limit is disabled
- >0 – resending limit is defined

NOTE

In case resending limit is disable this may cause countless connection attempts.

19.14 PIP

This is print command used to check the IP settings of the on device.

Example:

```
;PIP;
```

With special syntax the user can check the stage of IP connection. The status is returned it text form describing the status of the GPRS-TCP/IP connection.

Example:

```
;PIP=?;
```

20 GPRS-TCP/IP CONNECTION

To start GPRS-TCP/IP connection for the first time the user must first send SMS with the GPRS-TCP/IP parameters (check **19.GPRS-TCP/IP CONFIGURATION**). The user can send all parameters in one SMS message (Do not exceed 160 characters!).

20.1 GENERAL CONFIGURATION

To start/enable GPRS-TCP/IP connection next parameter are **MANDATORY**.

Mandatory GPRS-TCP/IP settings	
;IPEN=1;	Default, no need for sending.
;IPAPN=value;	Set appropriate APN string.
;IPADD1=value;	Set appropriate server IP address.
;IPPORT=value;	Set appropriate server IP port.

Table 37: Mandatory GPRS-TCP/IP connection parameters

To start/enable GPRS-TCP/IP connection next parameter are **USUALLY NEEDED**.

Usually needed GPRS-TCP/IP settings	
;IPUSR =value;	Set appropriate GPRS user name.
;IPPSW=value;	Set appropriate GPRS password.

Table 38: Usually needed GPRS-TCP/IP connection parameters

NOTE

Device can't merge data from 2 consecutive SMS messages.

20.2 EVENT REPORTING

To enable event reporting over the GPRS-TCP/IP interface next parameters are in use

Event reporting GPRS-TCP/IP setting	
;IPCID=1;	Default, no need for sending.

Table 39: Event reporting parameters

NOTE

To define the ID of the ZEUS S-LITE-GPRS device use #0 parameter
 Example:
 ;#0OBJECT=1111; 1111 is the object code of the ZEUS S-LITE-GPRS device

To define Contact ID for different inputs please use #0 ... #1
 Example:
 ;#1Input1=130; Input1 is Burglary

20.1 IP MANAGEMENT

With the IP support the user can manage ZEUS4-MC devices from the server side (programming and status polling).

There are 2 possible ways to conduct this procedure

1. If permanent connection is enabled (IPMOD=1) then the user can manage the ZEUS S-LITE-GPRS devices directly from the server with no prior needed action to conduct.
2. If the IPMOD=0 then the user must first establish a GPRS-TCP/IP connection before management is possible. To start GPRS-TCP/IP connection ;IPSTART; SMS must be send and to finish management mode ;IPEND; command must be send. In addition there is a timeout installed in the application that disconnects the GPRS-TCP/IP management connection if it lasts more than 10 minutes.

When using IPSTART command the connection is made to server IPADD1.

Management GPRS-TCP/IP setting	
;IPSTART;	Start of the IP management connection
;IPEND;	End of the IP management connection

Table 40: IP Management parameters

NOTE

When using ;IPSTART; command the connection is made to server with defined with IPADD1.
If needed to connect to server defined under the IPADD2 send command ;IPSTART=2;

21 GPRS-TCP/IP EXAMPLE

This example is used to show how to define the parameters for sending events to the demo server available for evaluating the ZEUS4-MC functionality.

All events generated on the ZEUS4-MC device and all events generated on control panel connected to the ZEUS4-MC device will be sending to the receiving server.

NOTE

GPRS setting are used for Si.Mobil Slovenia (MCC/MNC code: 29340). For your test please use the GPRS setting from your GSM provider.

Use SMS to send this configuration to ZEUS4-MC device.

```
;IPAPN=internet.simobil.si;IPUSR=simobil;IPPSW=internet;IPADD1=193.77.158.153;  
;IPOINT=2020;#0Objekt=1234;
```

After this configuration is send the ZEUS4-MC device is ready to send out events.

22 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	118 × 170 × 60 mm
Unit dimensions - IP56 box	155 × 220 × 82 mm
Antenna SMA	1
Weight (without battery)	550g
Alarm inputs	4
GSM Priority input	1
Alarm outputs (open collector)	4
ON/OFF input	1
12V DC Power Supply output	Y
Backup battery input	Y
Telephone line interface	Y
No. of alarm SMS per unit	4
No. of prerecorded messages	0
Programmed telephone numbers	10
Anti-tamper protection	Y
CLIP numbers	10
Event log buffer	1000

Table 41: ZEUS4-MC - Technical specifications

23 DEFAULT SETTINGS ON ZEUS4-MC

ZEUS4-MC PROGRAMMING TABLE		
Name	Default Value	Short Description
LAN	Empty	PSTN local area prefix
CLI	0	CLI function control
GPR	4	GSM priority
OPR	Empty	Exit number from PABX
DRC	0	Enable DTMF in MC mode
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	4	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
OD5	1	Telephone line failure direct output link
OD6	2	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	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

ZEUS4-MC PROGRAMMING TABLE		
Name	Default Value	Short Description
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
DD1	0	Input 1 delay before dialing
DD2	0	Input 2 delay before dialing
DD3	0	Input 3 delay before dialing
DD4	15	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

ZEUS4-MC PROGRAMMING TABLE		
Name	Default Value	Short Description
UDC	Empty	Tel. number of ZEUS4 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)
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
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
.	.	
.	.	
.	.	
CLP10	Empty	CLIP number 10
IPCID	1	Enable sending local events (built in CID) over IP conn.
IPAPN	Empty	Access Point Name for GPRS connection
IPADD1	Empty	Primary IP address of the server
IPADD2	Empty	Secondary IP address of the server
IPPORT	2020	Port number on the TCP/IP server

ZEUS4-MC PROGRAMMING TABLE		
Name	Default Value	Short Description
IPUSR	Empty	User name for GPRS connection
IPPSW	Empty	User password for GPRS connection
IPDNS1	Empty	Primary address of DNS server
IPDNS2	Empty	Secondary address of DNS server
IPPR	0	Connection protocol for event reporting
IPMOD	0	Connection mode
IPCRE	0	Number of resending attempts in case of sending errors

Table 42: ZEUS4-MC Default settings

24 CONTACTS

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