

Compact GSM II

INSTALLATION AND APPLICATION MANUAL

For module version V2.26.2066 and up

Document version: 1.8 10.03.2014



Table of contents

1	Module operation.....	3
1.1	Functions	3
1.2	Features.....	3
2	Settings	3
2.1	Configuring using the software, through USB connection.....	4
2.2	Configuring using the software, through modem connection	4
2.3	Settings and parameters.....	5
2.4	Configuring by SMS commands.....	13
2.5	Control of outputs by SMS	16
2.6	Status query.....	16
2.7	Recording voice messages	17
2.8	Call and SMS restriction	17
2.9	Functions of the program button	17
2.10	Restoring factory default settings.....	17
2.11	Volume adjusting application	18
3	Module overview	19
4	LED signals	19
5	Wiring diagram	20
6	Installation guide	21
6.1	Mounting	21
6.2	Putting into operation	21
7	Technical details.....	21
7.1	Technical specification.....	21
7.2	Contents of the package	21

1 Module operation

Application area:

- Optional GSM communicator for alarm control panels
- Individual GSM communicator with 2 inputs
- Temperature monitoring and intervention using the 2 relay outputs
- Simple GSM controller for gates
- Other remote controlling applications

1.1 Functions

- GSM voice call to 4 user phone numbers with recordable voice message or siren tone, on input activation
- Sends SMS about each event with customizable message
- Report to monitoring station with Contact-ID protocol about each event
- Temperature measuring and event generating at min./max. thresholds (optional)
- Relay remote control with free phone call
- Control of the relays by input or temperature event (optional)
- Car alarm adaptation (monitoring of rhythmical regular impulses)
- Programming: through USB or modem connection using software, or by SMS

1.2 Features

- 4 user phone numbers for GSM calls and SMS sending
- Forwards incoming SMS messages to the first user phone number
- 1 monitoring station phone number for reporting
- 2 NO/NC inputs
- 2 NO relay outputs
- Possibility to connect temperature sensor

2 Settings

The module can be configured using its programming software, through USB or modem connection, or by sending commands in SMS to the module's phone number, according to the instructions found in "*Configuring by SMS commands*" chapter. The programming software is available on the module's USB drive. After connecting the module to a PC through USB, it will be recognized as a new drive and it creates a new USB HID device as well.

The programming software runs on the following operating systems:

- **Windows XP SP2**
- **Windows 7**

Copy the programming software from the module to a suitable place on the PC. The software is available in the following folder:

"Drive letter":\Software\Remoter\Remoter.exe

- **Establishing the connection**

When connecting, the module requests the security password. The default password is: **1111**.

To log in, select “**Login**” option, enter the current password, then press “**OK**” or Enter key.

To change the password, select “**Change password**” option, enter the current password, the new password twice, then press “**OK**” or Enter key.



- **Function buttons of the programming software**



- **Read:** read settings from the connected module
- **Write:** write settings to the connected module
- **Open:** load settings from file
- **Save:** save settings to file

2.1 Configuring using the software, through USB connection

Start the programming software, then power up the module and connect to USB. The software connects automatically to the module. After the connection is established, the “**Read**” and “**Write**” options become available on the “**Settings**” page, and module status information on the “**Status**” page. Configure the settings, then load to the module using “**Write**” button.

2.2 Configuring using the software, through modem connection

To establish modem connection, it is necessary to have GSM data call (CSD) service enabled on both SIM cards, the one placed in the modem, and the one in the module.



- Start the programming software and select “**Modem**” tab. By switching to this tab, the software loads the available serial ports.
- Connect the GSM modem to the PC and select the serial port to which the modem is connected. If you don’t know the port number, then disconnect the modem, click on a different tab and then back on the “**Modem**” tab to reload the available ports. Open the “**Serial port**” drop-down menu and note the available port numbers. Reconnect the modem, reload the ports again by switching to another tab and back, then select the newly created port number, which was not in the list previously.

- Enter the module's phone number in the "**Phone number**" field, then click on "**Connect**" button. You can follow the connection status in the "**Modem communication details**" window. When connection is established successfully, "**CONNECT 9600**" message is displayed and the password request window pops up.
- After the connection is established, the "**Read**" and "**Write**" options become available on the "**Settings**" page, and module status information on the "**Status**" page.
- Configure the settings, then load to the module using "**Write**" button, then close the connection by pressing "**Disconnect**" button.

2.3 Settings and parameters

- **User phone numbers**

<i>User phone numbers</i>		<i>Acknowledgement</i>
<i>Phone number 1</i>	<input type="text" value="+36301111111"/>	<input type="text" value="* = ack., # = Stop"/>
<i>Phone number 2</i>	<input type="text" value="+36202222222"/>	<input type="text" value="ack. upon call reject"/>
<i>Phone number 3</i>	<input type="text" value="+36703333333"/>	<input type="text" value="no ack., # = Stop"/>
<i>Phone number 4</i>	<input type="text"/>	<input type="text" value="no ack., # = Stop"/>
<input checked="" type="checkbox"/> <i>Forward incoming SMS to phone number 1</i>		
<i>Superuser</i>	<input type="text"/>	

- **Phone number 1..4:** the module is able to report the events up to 4 user phone numbers by voice call (siren tone or recorded message) and by SMS. The maximum length of the phone numbers is 16 characters.
- **Acknowledgement:** confirmation of alarms sent to user phone numbers (by GSM voice call) may be necessary. If acknowledgement is set, the module recalls the number until the user confirms the alarm event. Available confirmation modes:
 - **no ack, # = Stop:** accepting the call confirms the alarm event automatically; by pressing # key on the phone stops reporting to the further phone numbers.
 - *** = ack, # = Stop:** the user must confirm the event by pressing * key on the phone, otherwise the module recalls the number until the user confirms the alarm event. Pressing # key on the phone stops reporting to the further phone numbers.
 - **ack. upon call reject:** the alarm event can be confirmed by rejecting the call. In case of accepting the call, this also confirms the event automatically and reporting to the further phone numbers can be stopped by pressing # key on the phone.
- **Forward incoming SMS to phone number 1:** if this option is enabled, the module forward the incoming SMS messages to the first user phone number, then deletes the message from the SIM card. The module has a built-in restriction, which allows forwarding of max. 5 SMS messages per day. In case of receiving more than 5 messages a day, then those above 5 will be deleted without forwarding. If this option is disabled, the module deletes all incoming SMS messages without forwarding them. Forwarded message format:

SMS forward(+3630...the sender's number):received message

Attention! The module does not forward SMS messages received from the superuser or user phone numbers!

▪ **Superuser:** it is possible to configure the module by sending commands in SMS to the module's phone number. When not in program mode, the module accepts SMS commands only from the Superuser phone number. You can enter here the superuser phone number, or can register it by SMS.

- **Notifications**

Notifications

	Contact-ID				Mon.				SMS message (max. 160 characters)		
	code	T1	T2	T3	T4	S1	S2	S3		S4	stat.
01. IN1 Alarm	1130	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IN1 Alarm
02. IN1 Restore	3130	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	IN1 Restore
03. IN2 Alarm	1130	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IN2 Alarm
04. IN2 Restore	3130	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	IN2 Restore
05. Min. temperature alarm	1159	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Min. temp. alarm
06. Min. temperature restore	3159	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Min. temp. restore
07. Max. temperature alarm	1158	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Max. temp. alarm
08. Max. temperature restore	3158	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Max. temp. restore
09. Temperature sensor error	3158	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Temp. sensor disconnected
10. Temperature sensor restore	3158	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Temp. sensor reconnected
11. Battery low	1302	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Battery low
12. Battery restore	3302	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Battery restore
13. Test report	1602					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Test report

Low battery voltage threshold (9000-28000 mV):

Voltage restore threshold (9000-28000 mV):

Maximum alarming time (5-25 minutes):

Test report frequency (0 - 99 days):

Temperature

Min. temperature threshold: 0° C

Max. temperature threshold: 40° C

You can configure in the “Notifications” section which event to be reported to which user phone number by voice call (**T1-T4**) and/or SMS (**S1-S4**), and which event to be reported to monitoring station using Contact-ID protocol (**Mon. stat.**).

- **IN1...IN2 Alarm:** alarm event generated by external contact on input IN1 and IN2, according to the input settings (alarms).
- **IN1...IN2 Restore:** restoration of the alarm event generated by restoration of the contact on input IN1 and IN2, according to the input settings (alarm restoration).

- **Min. temperature alarm:** this event is generated when the temperature measured by the connected optional temperature sensor drops with 1°C below the configured minimum temperature threshold for at least 30 seconds.
 - **Min. temperature restore:** this event is generated when the temperature measured by the connected optional temperature sensor increases with 1°C above the configured minimum temperature threshold for at least 30 seconds.
 - **Max. temperature alarm:** this event is generated when the temperature measured by the connected optional temperature sensor increases with 1°C above the configured maximum temperature threshold for at least 30 seconds.
 - **Max. temperature restore:** this event is generated when the temperature measured by the connected optional temperature sensor drops with 1°C below the configured maximum temperature threshold for at least 30 seconds.
 - **Temperature sensor error:** this event is generated if no data is received from the optional temperature sensor for at least 60 seconds, or the input is shorted for at least 60 seconds. The temperature sensor sends data to the module once per second. This event is only generated if the “*Temperature sensor*” option is enabled at input IN1 settings.
 - **Temperature sensor restore:** this event is generated if data is received again from the optional temperature sensor for at least 60 seconds after a sensor error event. This event is only generated if the “*Temperature sensor*” option is enabled at input IN1 settings.
 - **Battery low:** this event is generated if the module’s supply voltage drops below the configured low battery voltage threshold for at least 30 seconds.
 - **Battery restore:** this event is generated if the module’s supply voltage restores above the configured voltage restore threshold for at least 30 seconds.
 - **Test report:** the periodic test report to be sent by the configured frequency. The test report sending time of day can be set by pressing “Send test report” button, or by sending **TTIME=1#** command in SMS to the module’s phone number.
-
- **Contact-ID code:** 4-digit event code, consisting of 0..9,A,B,C,D,E,F characters for reporting to monitoring station.
 - **T1...T4:** clicking in the checkboxes you can enable the given event to initiate voice call to the configured (1-4) phone numbers.
 - **S1...S4:** clicking in the checkboxes you can enable the given event to send SMS message to the configured (1-4) phone numbers.
 - **Mon. stat.:** enable to report the given event to monitoring station.
 - **SMS message:** you can enter the text of the SMS message to be sent to the enabled (1-4) phone numbers when the given event is generated. By entering **\$T** characters anywhere in the message, the module substitutes this with the actual temperature measured by the optional temperature sensor (e.g.: 23 C). By entering **\$V** characters anywhere in the message, the module substitutes this with the actual value of the supply voltage in millivolts (e.g.: 12830 mV). By entering **\$S** characters anywhere in the message, the module substitutes this with the content of the status SMS message (see chapter “*Status query*” for details). The maximum length of the message should not exceed 160 characters, which is considered together with the length of the substitutions. **Attention! Accented characters should not be used** in the message!

- **Low battery voltage threshold:** the module is able to monitor the supply voltage. You can set a threshold in millivolts between 9000 and 28000 (9V...28V), at which the module generates “**Battery low**” event. The event is generated if the supply voltage is continuously at or below the set level for at least 30 seconds.

- **Voltage restore threshold:** You can set a threshold in millivolts between 9000 and 28000 (9V...28V), at which the module generates “**Battery restore**” event. The event is generated if the supply voltage is continuously at or above the set level for at least 30 seconds after a low battery event.

- **Maximum alarming time:** it can be set between 5 and 25 minutes, how long the module should try to report an event through GSM. If there still are calls and SMS messages in progress for the given event when this time expires, the module stops the reporting process and will not make any more attempts to report that event. This only refers to that specific event, calls and SMS messages initiated by other new events will continue to be reported.

Attention! Each event is reported to user phone numbers by separate call/SMS! If a power loss occurs, the module stores all events in progress which are still unreported and restarts reporting these events when the supply voltage restores!

- **Test report frequency:** it can be set between 0 and 99 days, how often the module should send test report. In case of setting 0, the module will not send test report.

- **Send test report:** you can set the test report sending time of day by pressing this button. When pressed, the module sends a test report, then the further test reports are send with the configured frequency.

- **Min. temperature threshold:** it can be set between -20 and +56 °C, at what temperature value the module should generate “**Min. temperature alarm**” and “**Min. temperature restore**” event.

- **Max. temperature threshold:** it can be set between -16 and +60 °C, at what temperature value the module should generate “**Max. temperature alarm**” and “**Max. temperature restore**” event.

- **Inputs**

Inputs

IN1	IN2	
<input checked="" type="radio"/>	<input checked="" type="radio"/>	Normally open
<input type="radio"/>	<input type="radio"/>	Normally closed
<input type="radio"/>	<input type="radio"/>	Car alarm adaptation (Activation on impulses received in a regular rhythm)
<input checked="" type="checkbox"/>		Temperature sensor
		Signal interval minimum period of time (seconds): 5
IN1 input sensitivity (msec.):		100
IN2 input sensitivity (msec.):		100

The module has 2 contact inputs: IN1 and IN2. The external contact is considered between the input and the negative terminal of the supply voltage input (“-” terminal).

Input settings:

- **Normally open:** the input has to be shorted to “-” terminal to generate an alarm event.
- **Normally closed:** the input has to be shorted to “-” terminal by default, and alarm event is generated when opening this contact.
- **Car alarm adaptation:** the module can monitor impulses on the input which are received in a regular rhythm (e.g. the contact series of a car alarm) and can generate alarm event from this signal. The signal length to be monitored can be set below.
 - **Signal interval minimum period of time:** it can be set in seconds between 1 and 99, the minimum length of the regular rhythm contact series necessary to generate an alarm event. Restoration of the alarm event is generated if no more impulses are received on the input after an alarm for at least the time interval set here.
- **Temperature sensor:** an optional TELL easyTEMP temperature sensor can be connected to input IN1. Enable this option in case of connecting a temperature sensor. When using a temperature sensor, the “**Normally open**” input mode can be used at the same time, taking in consideration that the module is unable to receive temperature data from the sensor when the input is shorted (in alarm state), therefore these two functions are recommended to be used together only when having short alarm impulse. When using a temperature sensor, the “**Normally closed**” and “**Car alarm adaptation**” modes of the input IN1 cannot be used.
- **IN1, IN2 input sensitivity:** the input sensitivity can be set in milliseconds between 10 and 600000. Shorter state changes on the given input are ignored by the module.
Attention! When using a temperature sensor, the maximum value to be set for IN1 input sensitivity is **3000 msec.**! Entering a higher value in this case results faulty operation of the input.

- Relay outputs

Relay outputs

Relay 1

Bistable (deactivation event requested)
 Timed (1-9999 sec):

Relay control

On alarm event

<p><i>Activation event</i></p> <input checked="" type="checkbox"/> <i>IN1 Alarm</i> <input checked="" type="checkbox"/> <i>IN2 Alarm</i>	<p><i>Deactivation event</i></p> <input type="checkbox"/> <i>IN1 restore</i> <input type="checkbox"/> <i>IN2 restore</i>
---	---

On incoming call

<p><i>Activation</i></p> <input type="checkbox"/> <i>Call from T1 phone number</i> <input type="checkbox"/> <i>Call from T2 phone number</i> <input type="checkbox"/> <i>Call from T3 phone number</i> <input type="checkbox"/> <i>Call from T4 phone number</i> <input type="checkbox"/> <i>Call from unknown phone number</i>	<p><i>Deactivation event</i></p> <input type="checkbox"/> <i>Call from T1 phone number</i> <input type="checkbox"/> <i>Call from T2 phone number</i> <input type="checkbox"/> <i>Call from T3 phone number</i> <input type="checkbox"/> <i>Call from T4 phone number</i> <input type="checkbox"/> <i>Call from unknown phone number</i>
---	---

Send response SMS

On temperature event

<i>Min. temperature threshold:</i>	<input style="width: 100%; border: none;" type="range"/>	0 °C
<i>Max. temperature threshold:</i>	<input style="width: 100%; border: none;" type="range"/>	40 °C

Activate the relay within the temperature range
 Activate the relay out of the temperature range
 Activate above the max. temp. threshold, and deactivate below the min. threshold
 Activate below the min. temp. threshold, and deactivate above the max. threshold

The module has 2 normally open relay outputs which can be controlled by events, by incoming call or by temperature events.

Relay 1 and Relay 2 operation modes:

- **Bistable:** the relay becomes activated by the set activation event and remains activated until deactivated by a deactivation event. If the module restarts due to communication or GSM network failure and the relay is activated, at restart the relay will deactivate for ~1 second, then will return to the activated state.
- **Timed:** it can be set in seconds between 1 and 9999, how long the relay should remain activated after an activation event occurs. If no further activation event occurs, the relay will deactivate automatically when the time expires. If a new activation event occurs, the relay will not deactivate and the activation time restarts. If a deactivation event occurs, the relay will deactivate.

Relay 1 and Relay 2 control settings:

- **On alarm event:** you can configure which IN1...IN2 alarm event should activate, and which IN1...IN2 alarm restoration event should deactivate the relay.
- **On incoming call:** you can configure which incoming calls received from T1...T4 user phone numbers and/or from unknown (any except T1...T4) phone numbers should activate the relay, respectively which incoming calls received from T1...T4 user phone numbers and/or from unknown (any except T1...T4) phone numbers should deactivate the relay. (E.g. if the relay is set to bistable mode and call from T1 is enabled at activation event and at deactivation event as well, the relay will activate when receiving the first call from T1 user phone number and will deactivate upon the second call from the same number). The relay control is done using phone number identification, thus the module rejects the call without responding it after identifying the number and controls the relay (with free call). For this it is necessary to enable caller identification service at your GSM service provider on the SIM card inserted in the module, as well as caller ID sending should be enabled on the phone used to make the call to the module.
 - **Send response SMS:** if enabled, the module sends SMS about the relay control to the caller's phone number (confirmation message, only to user phone numbers T1...T4). The module does not send response SMS when the relay is controlled from unknown phone number.
- **On temperature event:** it is possible to configure the relay to be activated or deactivated between configured min./max. temperature thresholds. The relay control is done when the measured temperature increases above, respectively drops below the configured threshold with 1°C for at least 30 seconds. The temperature event that controls the relay is independent from the temperature alarm event, therefore the thresholds of these events can be set to different values.
 - **Min. temperature threshold:** the minimum temperature threshold for relay control can be set between -20 and +56 °C.
 - **Max. temperature threshold:** the maximum temperature threshold for relay control can be set between -16 and +60 °C.
 - **Activate the relay within the temperature range:** the relay becomes activated within the configured temperature range, and switches to deactivated state when out of the range.
 - **Activate the relay out of the temperature range:** the relay becomes deactivated within the configured temperature range, and switches to activated state when out of the range.
 - **Activate above the max. temp. threshold, and deactivate below the min. threshold:** the relay becomes activated above the configured maximum temperature threshold, and switches to deactivated state when the temperature drops below the minimum temperature threshold.
 - **Activate below the min. temp. threshold, and deactivate above the max. threshold:** the relay becomes activated below the configured minimum temperature threshold, and switches to deactivated state when the temperature increases above the maximum temperature threshold.

- **Monitoring station**


Monitoring station

Monitoring station phone number:	<input type="text" value="+3619999999"/>
User ID:	<input type="text" value="1234"/>

- **Monitoring station phone number:** the phone number of the remote monitoring station used for reporting in Contact-ID format.
- **User ID:** the 4-digit user identification number consisting of 0..9,A,B,C,D,E,F characters used for Contact ID reporting.

- **Status**

The “Status” page provides information on the module’s actual state.

Settings	Status	Modem
Version information		
Type:	COMPACT V2	
Hardware version:	V02.00.0000	
Firmware version:	V02.00.1499	
System timer		
Uptime:	1597	
GSM status		
GSM signal (0-31):	24	
Lowest GSM signal:	24	
Uptime:	1564	
Power supply		
Supply voltage:	12238 mV	
Min. voltage:	11846 mV	
Temperature		
Current temperature on the external sensor:	25 °C	
Inputs		
IN1:	Active	
IN2:	Inactive	
Relays		
Relay 1:	On	
Relay 2:	Off	

- **Version information:** the type, hardware and firmware version of the connected module.
- **System timer:** the time elapsed from powering up the module.
- **GSM status:** the actual GSM signal strength, the lowest signal measured and the time elapsed from connecting to the GSM network.
- **Power supply:** The actual value of the supply voltage in millivolts and the lowest voltage measured from powering up the module.
- **Temperature:** the actual temperature measured by the connected optional temperature sensor.
- **Inputs:** the actual state of the inputs IN1 and IN2.
- **Relays:** The actual state of the two relay outputs.

2.4 Configuring by SMS commands

The table below contains the commands to be sent in SMS to the module's phone number in order to configure the module. The module accepts SMS commands only from the SUPERUSER phone number, or from any phone number for 3 minutes when in program mode (see "Functions of the program button" chapter). It is possible to send more commands in one SMS, but the message length should not exceed 40 characters, otherwise the module responds with an error message. Each command must end with # character. There is possibility for settings query at some of the commands, these are marked with ? character in the first table column. For settings query send the command in SMS using question mark after the command (e.g. **TMPH?#**). Commands must be always typed with capital letters.

	Command		(Parameter) and Value	
	Superuser registration	SUPERUSER	(registers the sender's phone number)	#
?	Modifying the Superuser	SU	= <i>phone number</i>	#
	Phone number 1	PH1	= <i>phone number,*</i> (with ack.)	#
	Phone number 2	PH2	= <i>phone number</i> (without ack.)	#
	Phone number 3	PH3	= (to erase the phone	#
	Phone number 4	PH4	= number, leave it blank)	#
	SMS forwarding to phone number 1	SFWEN	= 1 enable/disable (1/0)	#
	IN1 Alarm	IN1A	=	#
	IN2 Alarm	IN2A	=	#
	IN1 Restore	IN1R	=	#
	IN2 Restore	IN2R	=	#
	Min. temperature alarm	TLA	=	#
	Min. temperature restore	TLR	=	#
	Max. temperature alarm	THA	=	#
	Max. temperature restore	THR	=	#
	Temperature sensor error	TSA	=	#
	Temperature sensor restore	TSR	=	#
	Battery low	BTA	=	#
	Battery restore	BTR	=	#
	Test report	TSTN	= CID1602,S1001,C1,SMS:text	#
?	Low battery voltage threshold	BTAV	= 11700 (9000...28000 mV)	#
?	Voltage restore threshold	BTRV	= 12200 (9000...28000 mV)	#
?	Maximum alarming time	EVTIM	= 10 (5...25 minutes)	#
?	Test report frequency	TSTFR	= 7 (0...99 days)	#
	Test report sending time of day	TTIME	= 1 (sends a test when the SMS is received, then the further ones with the set frequency)	#
?	Minimum temperature threshold	TMPL	= 18 (-20...56 °C, but $TMPH \geq TMPL + 4^\circ C$)	#
?	Maximum temperature threshold	TMPH	= 23 (-16...60 °C, but $TMPH \geq TMPL + 4^\circ C$)	#
?	IN1 input mode	IN1	=	#
?	IN2 input mode	IN2	=	#
?	Enable temperature sensor on IN1	IN1T	= 1 enable/disable (1/0)	#
	Signal interval minimum period of time	CALS	= 10 (1...99 sec)	#
?	IN1 input sensitivity	IN1S	=	#
?	IN2 input sensitivity	IN2S	= 200 (10...600000 msec)	#

Relay 1 control mode	REL1	=	timed: MONO180 MONO1...9999 sec	#
Relay 2 control mode	REL2	=	bistable: BI	#
Relay 1 controlled by alarm event	REL1C1	=	ACT12,DEACT12 Configuring parameters: ACT: activation event 1=IN1 Alarm 2=IN2 Alarm DEACT: deactivation event 1=IN1 Restore 2=IN2 Restore (enables the events specified by the numbers)	#
Relay 2 controlled by alarm event	REL2C1	=		#
Relay 1 controlled by incoming call	REL1C2	=	ACT12345,DEACT12345,RSMS Configuring parameters: ACT: activation event DEACT: deactivation event 1=call from T1 2=call from T2 3=call from T3 4=call from T4 5=call from unknown phone number (enables the events specified by the numbers)	#
Relay 2 controlled by incoming call	REL2C2	=	RSMS: enable response SMS (omit this parameter to disable this option)	#
Relay 1 controlled by temperature event	REL1C3	=	XX,YY,Z Configuring parameters: XX: min. temperature (-20...56 °C, but YY≥XX+4°C) YY: max. temperature (-16...60 °C, but YY≥XX+4°C) Z: control mode (1...4) 1: activate within the range 2: activate out of the range 3: activate above max. threshold, deactivate below min. threshold 4: activate min. below min. threshold, deactivate above max. threshold	#
Relay 2 controlled by temperature event	REL2C3	=		#
Monitoring station phone number	REMNR	=	phone number	#
? User ID	CUID	=	12E3 (4-digit user ID)	#
Switching to program mode	PROG	=	1 (switches to program mode for 3 minutes for e.g. voice message recording/playback)	#
Restoring factory default settings	RESET	=	1 (the module restarts with factory default settings after 10 seconds)	#
? Contact ID tone (outgoing) volume	GMIC	=	7 (0...15)	#
? Contact ID HSK/ACK (incoming) volume	GSPK	=	54 (0...100)	#
? Status query	INFO	?		#

- **Examples:**

Registering the Superuser phone number:

SUPERUSER#

The module does not send response SMS for this command, it just performs the registration!

Erasing the Superuser phone number:

SU=#

Adding/modifying user phone number 1 with enabled confirmation (ack) request and adding/modifying user phone number 2 with disabled confirmation request:

PH1=+36301111111,*#PH2=+3620222222#

Erasing user phone number 3:

PH3=#

Configuring IN2 Alarm event with Contact ID code 1120, enabled voice call to user phone numbers 1 and 2, enabled SMS sending to user phone number 3, disabled reporting to monitoring station and "*Panic alarm*" SMS message:

IN2A=CID1120,T1100,S0010,C0,SMS:Panic alarm#

Configuring control of relay 1 by temperature event, with 20°C minimum and 26°C maximum temperature threshold, using the third control mode: activate the relay above the maximum temperature threshold and deactivate below the minimum threshold:

REL1C3=20,26,3#

Configuring control of relay 2 with bistable mode, using incoming call from user phone number 1 and 3 as activation events and incoming call from phone numbers 3 and 4 as deactivation events, with disabled response SMS request:

REL2=BI#REL2C2=ACT13,DEACT34#

2.5 Control of outputs by SMS

There is possibility to control the relay outputs by sending commands in SMS to the module's phone number. The commands are specified in the following table. The module accepts the commands only from the configured 4 user phone numbers and from the superuser phone number!

Command	Specification
R1=ON#	Activation of output REL1 (bistable mode)
R1=ON,x#	Timed activation of output REL1 (monostable mode) Substitute „x” with the timing: 1...9999 (seconds)
R1=OFF#	Deactivation of output REL1
R2=ON#	Activation of output REL2 (bistable mode)
R2=ON,x#	Timed activation of output REL2 (monostable mode) Substitute „x” with the timing: 1...9999 (seconds)
R2=OFF#	Deactivation of output REL2

The module sends confirmation in SMS about the execution of the control commands.

Attention! Control by SMS of the relay output is restricted if the control mode of the given output is configured to “*temperature event*”! This option disables control by SMS.

2.6 Status query

There is possibility for status query in SMS. The module accepts the status request command only from the configured 4 user phone numbers and from the superuser phone number. To request module status in SMS, send the following message to the module's phone number:

INFO?#

The module sends as response the status information according to the latest measurements in the following format:

VER=V2.00.1432	(the version of the firmware)
IN1=1	(input IN1 state: 1=open, 0=closed)
IN2=1	(input IN2 state: 1=open, 0=closed)
REL1=0	(Relay 1 state: 0=deactivated/open, 1=activated/closed)
REL2=1	(Relay 2 state: 0=deactivated/open, 1=activated/closed)
TEMP=24 C	(temperature, if temperature sensor is connected)
BATT=12537 mV	(supply voltage in millivolts =12,537V)
GSMP=26/31	(GSM signal strength on 0-31 scale)

2.7 Recording voice messages

By default the module uses siren tone when reporting an event through voice call to the 4 user phone numbers. There is possibility to record 6 seconds long voice messages through voice call for **IN1 Alarm** and **IN2 Alarm** events. To record voice messages you have to switch the module to program mode, then call the module's phone number within 3 minutes.

- **Switching to program mode:**

- keep the button on the side of the module pressed until the LED starts blinking orange (~2-3 seconds)

or

- send the **PROG=1#** command in SMS from the superuser phone number to the module's phone number (when the module receives the SMS, the LED starts blinking orange if switching to program mode is successful)

- **Voice message management:**

After switching to program mode, call the module's phone number within 3 minutes (from any phone number). After the module receives the call, the following commands can be used by pressing your phone's keys:

1* : recording the voice message for *IN1 Alarm* event after the beep

2* : recording the voice message for *IN2 Alarm* event after the beep

3* : playing back the voice message of *IN1 Alarm* event

4* : playing back the voice message of *IN2 Alarm* event

#* : erasing the voice messages recorded for *IN1 Alarm* and *IN2 Alarm* events
(restoring the siren tone)

When recording voice messages, speak loud and close to the phone's microphone!

2.8 Call and SMS restriction

The module has built-in call and SMS restriction function, which allows 50 outgoing calls and sending 50 SMS messages per day.

2.9 Functions of the program button

The program button can be reached through the hole on the left side of the module. The program buttons functions are the following:

- **Switching to program mode:** keep the button pressed until the LED starts blinking orange (~2-3 seconds). After this you have 3 minutes to call the module to configure voice messages, as well as to send command SMS from any phone number.
- **GSM signal query:** after pressing the button shortly (>1sec), the number of green blinks indicate the level of the GSM signal on 3-point scale.

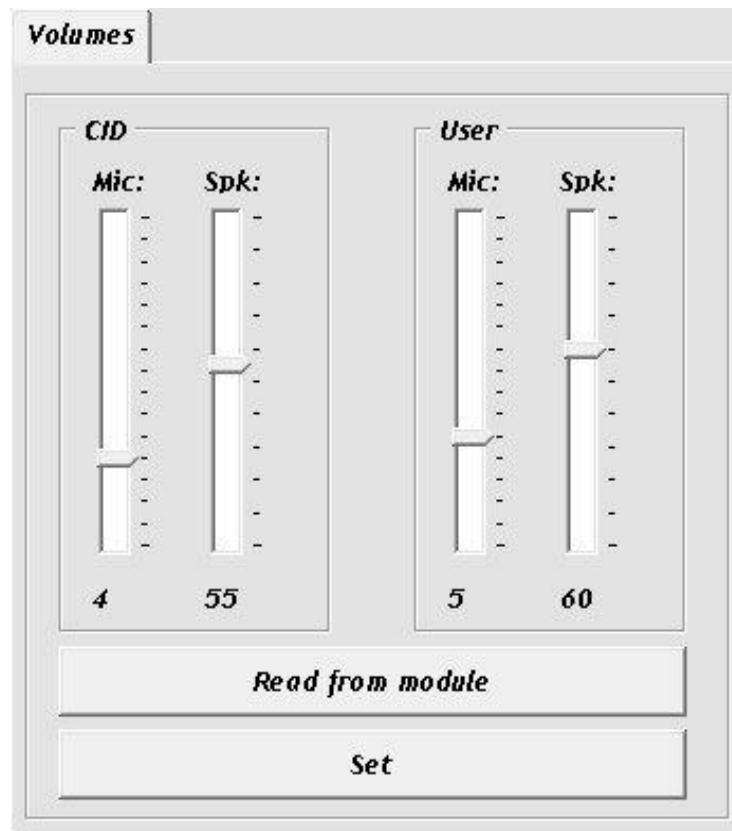
2.10 Restoring factory default settings

Attention! Do not connect the module to USB while performing this operation!

To reset the security password and restore the default settings switch the module to program mode and send the **RESET=1#** command in SMS to the module's phone number within 3 minutes from any phone number. As soon as the module receives the SMS, after 10 seconds the security password and the settings will reset, then the module restarts.

2.11 Volume adjusting application

The volume adjusting application (Mixer.exe) is available on the manufacturer's website (www.tell.hu). You can use this software to adjust the in-call volume levels if necessary and justified. Adjusting may be necessary if voice quality or volume problem is experienced while using the module with the given GSM service provider's SIM card.



Using the software:

- Start the Mixer.exe program.
- Connect the module to USB. The software connects to the module automatically, then "**Read**" and "**Set**" buttons become available.
- Read the actual settings from the module by pressing "**Read from module**" button.
- **CID** setting: adjusts the volume of the communication to monitoring station
 - **Mic** volume: microphone volume (outgoing Contact-ID).
 - **Spk** volume: speaker volume (incoming HSK/ACK).
- **User** setting: adjusts the volume of the voice communication to/from user phone numbers
 - **Mic** volume: microphone volume (outgoing voice message, siren tone).
 - **Spk** volume: speaker volume (incoming voice: voice message recording).
- Set the desired volume level, then write the settings to the module by pressing "**Set**" button.
Attention! Even minor level modifications cause significant changes in the in-call volume!
- The new settings are applied after writing in the very next voice call.

3 Module overview

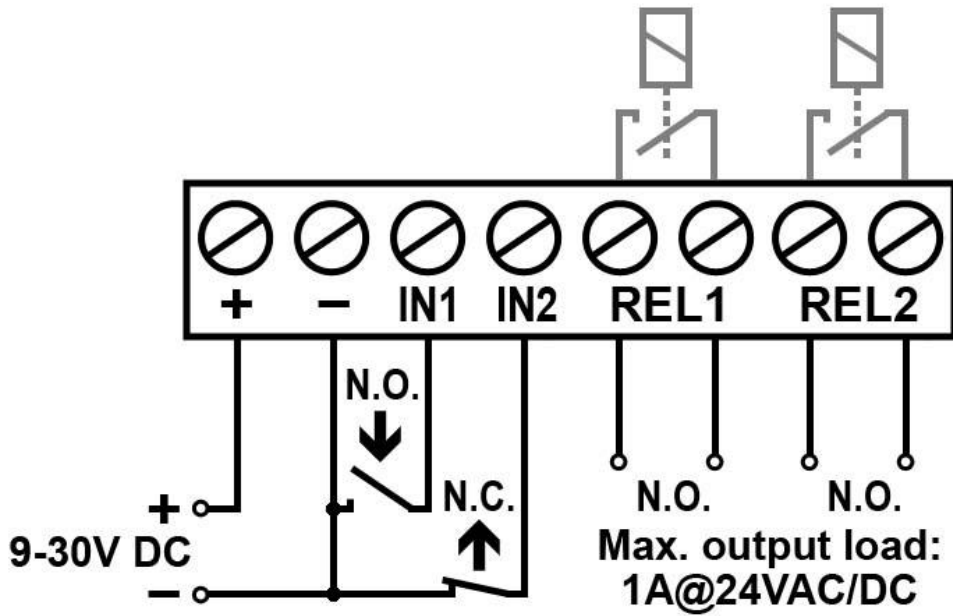


4 LED signals

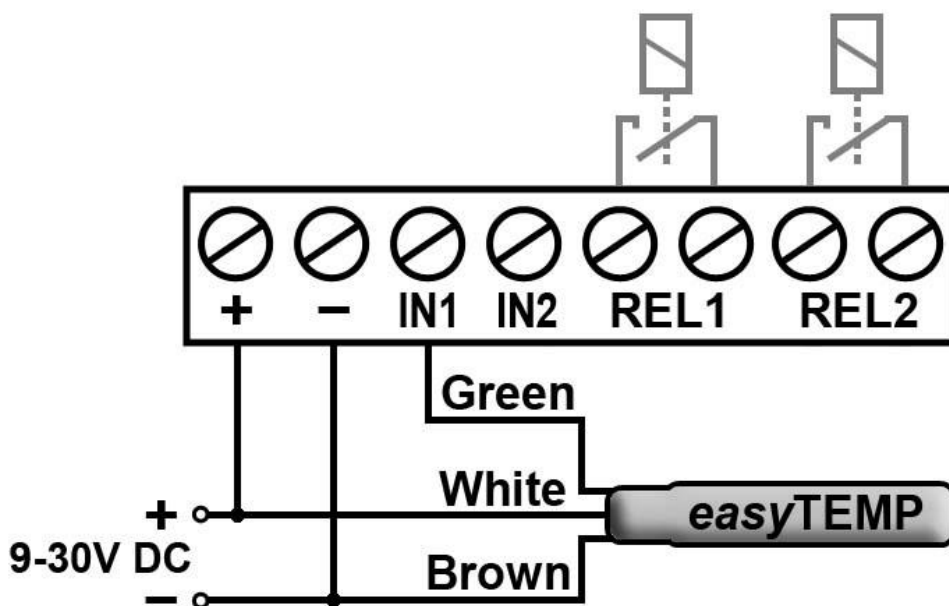
Flashing red	Searching for GSM network
Continuous red	GSM / SIM error
Continuous green	Reporting through GSM in progress
Flashing green	GSM network is available, idle
Green performs a determined number of blinks after pressing the program button	GSM signal query
Flashing orange	Program mode

5 Wiring diagram

- For normally open and normally closed setting:
(REL1 and REL2 outputs are normally open)



- Connecting the temperature sensor:



6 Installation guide

6.1 Mounting

- Test the GSM signal strength with your mobile phone. It may happen that the signal strength is not sufficient in the desired mounting place. In this case the planned installation place can be changed before mounting the device.
- Do not mount the unit in places where it can be affected by strong electromagnetic disturbances (e.g. in the vicinity of electric motors, etc.).
- Do not mount the unit in wet places or places with high degree of humidity.
- Connecting the GSM antenna: the GSM antenna can be fixed in the FME-M socket found on the panel. The antenna supplied with the module provides good transmission under normal reception circumstances. In case of occasionally occurring signal strength problems or/and wave interference (fading), use another (directed) type of antenna or find a more suitable place for the module.

6.2 Putting into operation

- Disable PIN code request, voicemail and notification in SMS about missed calls on the SIM card placed into the module.
- ***Enable caller ID sending and caller identification service on the SIM card at the GSM service provider.***
- Place the SIM card into the SIM slot according to the sticker on the module. If you want to remove the SIM card just push the card again.
- Check the antenna to be fixed properly to the Compact GSM II module.
- Check the wires to be connected as instructed by the wiring diagram.
- The device can be powered up. Make sure that the power supply is sufficient for the load of the module. The quiescent current of the module is 50mA, however it may increase up to 200mA during communication and relay control.

7 Technical details

7.1 Technical specification

Supply voltage:	9-30 VDC	
Nominal current consumption:	50mA @ 12VDC,	27mA @ 24VDC
Maximum current consumption:	200mA @ 12VDC,	100mA @ 24VDC
Operating temperature:	-20°C - +70°C	
Transmission frequency:	GSM 900/1800, 850/1900 MHz	
GSM phone type:	Simcom SIM900	
Maximum relay output load:	1A @ 24VAC/DC	
Dimensions:	100 x 70 x 19mm	
Weight:	80g (packed: 100g)	

7.2 Contents of the package

- Compact GSM II module
- GSM 900MHz / 1800MHz antenna
- Plastic spacer support / snap fasteners
- Manual, warranty card