Compact GSM II

INSTALLATION AND APPLICATION MANUAL

For module version V2.50.2209 and newer

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Table of contents

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
- Automatic power disconnection at low supply voltage

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

1.3 Under Voltage Lock Out (UVLO) function

 The product is provided with built-in automatic power disconnection (Under Voltage Lock Out) function. Depending on the product type, if the supply voltage drops below 8.4…8.2V, the module turns off automatically and it turns back on when the supply voltage is at least 11.2…11.4V.

The minimum supply voltage level required to turn the module on is 11.2…11.4V! After turned on with supply voltage higher than 11.2…11.4V, the module can operate stably even at lower supply voltage, but not lower than 8.4…8.2V.

If the module is powered from a power supply provided with a backup battery and there is no other electrical load on the battery when charging fails (e.g. in case of a power cut), while the battery discharges, the module turns off automatically at 8.4…8.2V voltage level.

Thereafter, if the battery is in good condition, it can regenerate and can reach the terminal voltage of 11.2…11.4V where the module turns back on, then the battery may discharge again below 8.4…8.2V. This may result a continuous switching on and off cycle that lasts until the battery can no longer regenerate to the 11.2…11.4V voltage level. If this phenomenon occurs, the battery is flat and it should be replaced.

1.4 Updating the firmware

TELL always releases its products with the latest firmware version. However, as our products are being continuously improved, new firmware updates may occasionally be released for the products, which may include new features along with bug fixes. Therefore, it is recommended that you always upgrade your product to the latest firmware version available. All released firmware versions are available on the TELL website, including older versions.

ATTENTION! Downgrading to an earlier version is not supported! Always upgrade your product to the latest version, otherwise your settings could get wiped due to differences in functionality between versions.

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. **Power up the module** and connect to USB. 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 7 (32/64bit), Windows 10 (32/64bit).

Copy the programming software from the module to a suitable place on the PC. The software is available in the following folder:
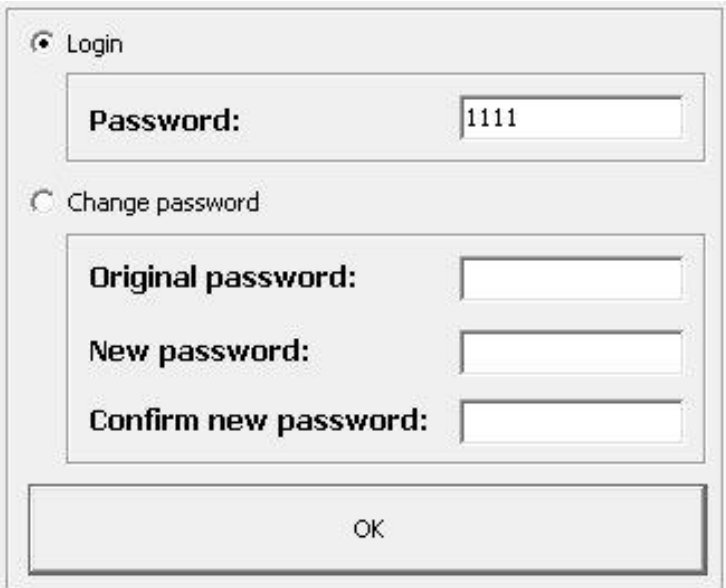"Drive letter"**:\Software\Remoter\Remoter.exe**

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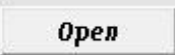
When connecting, the module requests the security password. The default password is: **1111**.

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**" filed, 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**

User phone numbers

		Acknowledgement	
Phone number 1	+36301111111	* = ack., # = Stop	▼
Phone number 2	+36202222222	ack. upon call reject	▼
Phone number 3	+36703333333	no ack., # = Stop	▼
Phone number 4		no ack., # = Stop	▼

☑ Forward incomming SMS to phone number 1

Superuser

▪ **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 the **#** key on the phone stops reporting to the further phone numbers.

- ▪ *** = ack, # = Stop**: the user must confirm the event by pressing the ✱ key on the phone, otherwise the module recalls the number until the user confirms the alarm event. Pressing the **#** key on the phone stops reporting to the further phone numbers and confirms the event at the same time.

- ▪ **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 the **#** 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 code	T1 T2 T3 T4	S1 S2 S3 S4	Mon. stat.	SMS message (max. 160 characters)
01. IN1 Alarm	1130	☑ ☑ ☑ ☑	☑ ☑ ☑ ☑	☑	IN1 Alarm
02. IN1 Restore	3130	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☑	IN1 Restore
03. IN2 Alarm	1130	☑ ☑ ☑ ☑	☑ ☑ ☑ ☑	☑	IN2 Alarm
04. IN2 Restore	3130	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☑	IN2 Restore
05. Min. temperature alarm	1159	☐ ☐ ☐ ☐	☑ ☑ ☑ ☑	☑	Min. temp. alarm
06. Min. temperature restore	3159	☐ ☐ ☐ ☐	☑ ☑ ☑ ☑	☑	Min. temp. restore
07. Max. temperature alarm	1158	☐ ☐ ☐ ☐	☑ ☑ ☑ ☑	☑	Max. temp. alarm
08. Max. temperature restore	3158	☐ ☐ ☐ ☐	☑ ☑ ☑ ☑	☑	Max. temp. restore
09. Temperature sensor error	3158	☐ ☐ ☐ ☐	☑ ☑ ☑ ☑	☑	Temp. sensor disconnected
10. Temperature sensor restore	3158	☐ ☐ ☐ ☐	☑ ☑ ☑ ☑	☑	Temp. sensor reconnected
11. Battery low	1302	☐ ☐ ☐ ☐	☑ ☑ ☐ ☐	☑	Battery low
12. Battery restore	3302	☐ ☐ ☐ ☐	☑ ☑ ☐ ☐	☑	Battery restore
13. Test report	1602		☑ ☐ ☐ ☐	☑	Test report

Low battery voltage threshold (9000-28000 mV): 11500

Voltage restore threshold (9000-28000 mV): 12200

Maximum alarming time (5-25 minutes): 10

Test report frequency (0 - 99 days): 7   Send test report

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 1ºC 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 1ºC 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 1ºC 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 1ºC 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 ºC, 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 ºC, at what temperature value the module should generate "*Max. temperature alarm*" and "*Max. temperature restore*" event.

- **Inputs**

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**

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.

▪ **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 1ºC 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 ºC.

  ▪ **Max. temperature threshold**: the maximum temperature threshold for relay control can be set between -16 and +60 ºC.

  ▪ **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:	+3619999999
User ID:	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**	=	*phone number*	#
	Phone number 1	**PH1**	=	*phone number*,∗ (with ack.)	#
	Phone number 2	**PH2**	=	*phone number*,A (ack. upon call reject)	#
	Phone number 3	**PH3**	=	*phone number* (without ack.)	#
	Phone number 4	**PH4**	=	(to erase the phone number, leave it blank)	#
	SMS forwarding to phone number 1	**SFWEN**	=	1 enable/disable (1/0)	#
	IN1 Alarm	**IN1A**	=		#
	IN2 Alarm	**IN2A**	=	**CID1130,T1011,S1001,C1,SMS:***text*	#
	IN1 Restore	**IN1R**	=		#
	IN2 Restore	**IN2R**	=	**Configuring parameters:**	#
	Min. temperature alarm	**TLA**	=	**CID**: 4-digit Contact ID code	#
	Min. temperature restore	**TLR**	=	**T**: T1 T2 T3 T4 enable/disable (1/0)	#
	Max. temperature alarm	**THA**	=	**S**: S1 S2 S3 S4 enable/disable (1/0) **C**: report to mon.stat.enable/disable (1/0)	#
	Max. temperature restore	**THR**	=	**SMS:** message text	#
	Temperature sensor error	**TSA**	=		#
	Temperature sensor restore	**TSR**	=	(any parameter+value which should not be modified can be omitted)	#
	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 ºC, but TMPH≥TMPL+4ºC)	#
?	Maximum temperature threshold	**TMPH**	=	**23** (-16...60 ºC, but TMPH≥TMPL+4ºC)	#
?	IN1 input mode	**IN1**	=	**NO**: normally open	#
?	IN2 input mode	**IN2**	=	**NO** **NC**: normally closed **CA**: car alarm adaptation	#
?	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 bistable: **BI**	**#**
	Relay 2 control mode	**REL2**	**=**		**#**
	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) **RSMS**: enable response SMS (omit this parameter to disable this option)	**#**
	Relay 2 controlled by incoming call	**REL2C2**	**=**		**#**
	Relay 1 controlled by temperature event	**REL1C3**	**=**	*XX,YY,Z* **Configuring parameters*:*** *XX*: min. temperature　(-20...56 ºC, but YY≥XX+4ºC) *YY*: max. temperature　(-16...60 ºC, but YY≥XX+4ºC)	**#**
	Relay 2 controlled by temperature event	**REL2C3**	**=**	*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	**#**
	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=+36202222222#

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 20ºC minimum and 26ºC 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, according to the table below. The acceptable value is 2 or 3 blinks.

| No. of LED blinks	GSM signal (0-31 scale)	GSM signal (%)	Classification
0	0-5	0-16	insufficient!!
1	6-15	17-48	weak!!
2	16-24	49-77	adequate
3	25-31	78-100	good

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.
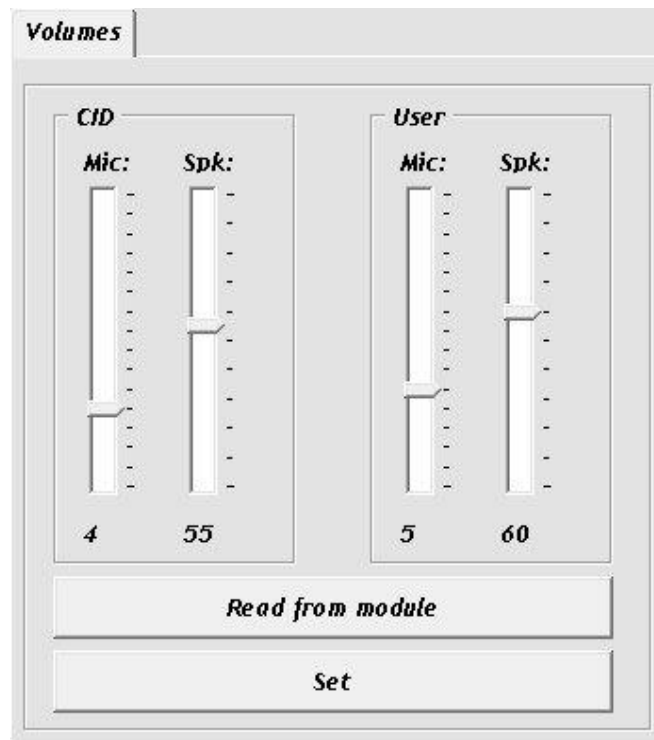
Using the software:

- 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)

IN1   IN2   REL1   REL2

N.O.

N.C.

+
9-30V DC
−

N.O.   N.O.

Max. output load:
1A@24VAC/DC
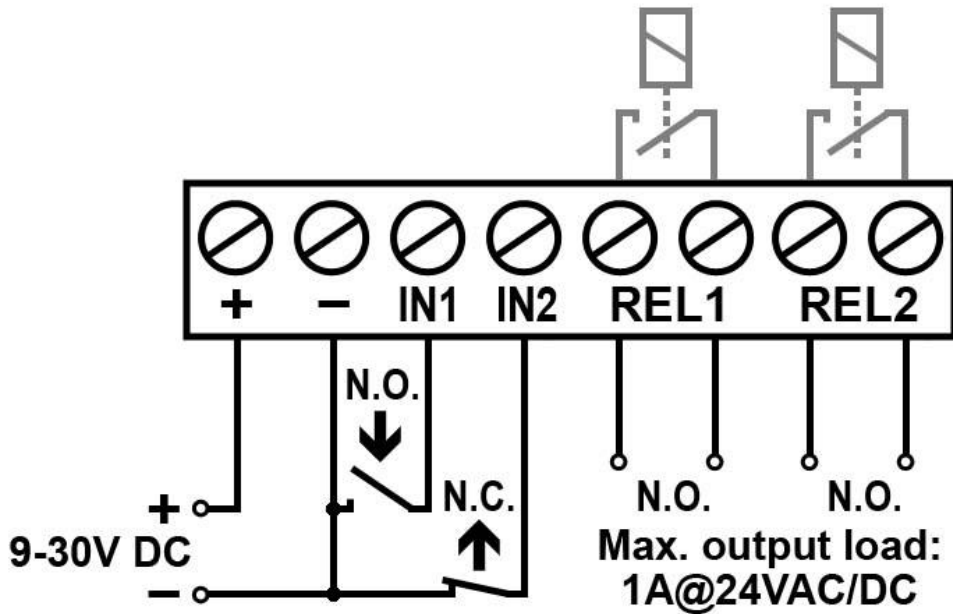
- Connecting the temperature sensor:

IN1   IN2   REL1   REL2

Green

White   easyTEMP

+
9-30V DC
−   Brown
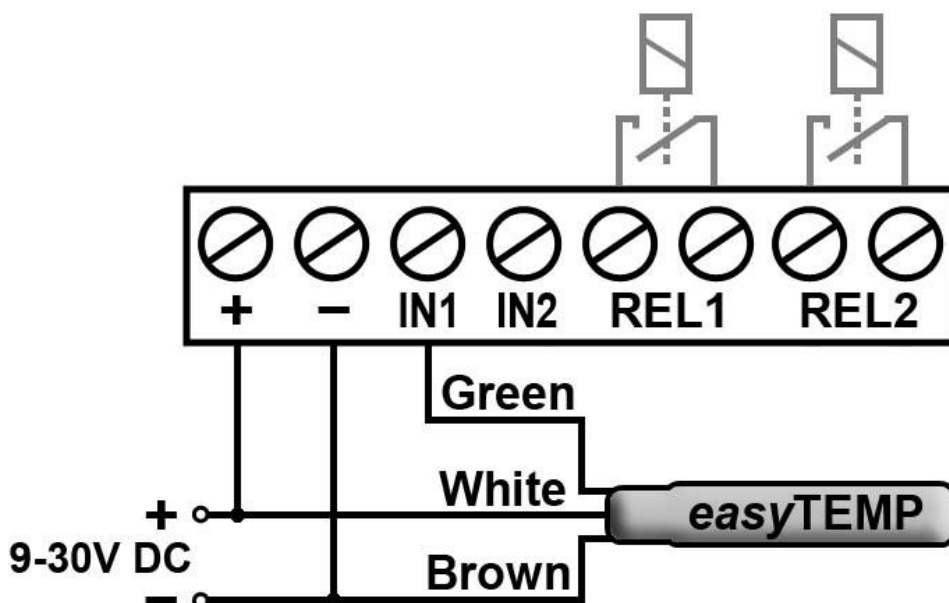
6 Installation guide

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.
- ***The minimum supply voltage level required to turn the module on is 11.2…11.4V! After turned on with supply voltage higher than 11.2…11.4V, the module can operate stably even at lower supply voltage, but not lower than 8.4…8.2V.***

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:	-20ºC - +70ºC
Transmission frequency:	GSM 900/1800, 850/1900 MHz
GSM phone type:	Simcom SIM800F
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