Controller GV15

USER MANUAL

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This document describes controller GV15, its use, features, operation and setting of operation parameters.

Controller GV15 is a remote control device for electro-technical equipment (gate opening or rising, premises heating or ventilation, lawn or greenhouse irrigation, pump, boiler, transporter and other system control). Control commands are transmitted via GSM. After a call made to the number of the inserted SIM card, the controller checks the caller number, under the set operation mode rejects the call and switches relay contacts. There is a possibility to switch controller relay contacts using SMS message or DTMF commands.

Key features:

- 2 Relays for equipment control;
- 2 inputs, e.g. for the circuit of mounting case lock or gate limit sensor;
- 8 administrators and 1000 user names and their phone numbers;
- Import and export of user phone numbers and user names;
- Customising the preferred switching period of relay contacts;
- Comprehensive controller operation light indication;
- Exceptionally easy to install and run.

SMS messages:

- Sending SMS messages on entry events;
- Entry event description by individual text;
- Sending SMS confirmations on control command execution;
- Sending the comprehensive periodic test message;
- SMS message distribution to administrators based on controller event types;
- All operation parameter setting by SMS messages;
- SMS commands to receive the lists of administrators and users;
- Controller remote reset;
- Unauthorized call and SMS denial

Three dial control operation modes:

- All – controller relay contacts may be switched by any caller;
- Users and Administrators – controller relay contacts may be switched by the caller, whose phone number is either on the user or administrator phone number list;
- Administrators only – controller relay contacts may be switched by the caller, whose phone number is on the administrator phone number list.

Safety requirements

Get familiar with this manual prior to the controller usage.

Installation and maintenance of the controller shall be subject to qualified specialists having knowledge on GSM equipment performance and relevant safety requirements.

External power supply during controller installation works must be switched off!

The controller shall be installed in the premises at restricted access zones and safe distance from sensitive electronic devices. The controller is not resistant to vibration, other mechanical impact, moisture and aggressive chemical environment. The controller complies with the requirements of Standard EN 50131 applied to environmental impact resistance Class II.

Warranty and liability limitations

The product installed and operated in accordance with the interface user's manual and electrical equipment installation procedure shall be provided with 24-months warranty by manufacturer. Warranty shall be effective as of product purchase-sales transaction, i.e. invoice or cash receipt issue date.

Warranty may be terminated prematurely in the following cases:

- The controller was repaired or attempted to repair by an unauthorized person;
- The controller was used not for its intended purpose;
- The controller was stored and/or installed in inadequate premises with inappropriate climate conditions, aggressive chemical environment;
- The controller was mechanically broken and/or deliberately damaged;
- The controller damage was caused by *force-majeure* (lightning discharge etc.).

The manufacturer shall not be liable for the following:

- The controller failures when controller is installed or used inconsistent with its user manual;
- The controller failures if occurred due to disturbed, lost GSM/GPRS/Internet connection or any troubles in operator's networks;
- Termination or restriction of GSM/GPRS/Internet communication services to the controller buyer or controller user, and shall not reimburse the controller buyer or controller user for property or non-property losses incurred;
- Termination or restriction of electrical power supply to the controller buyer or control panel user, and shall not reimburse the controller buyer or control panel user for property or non-property losses incurred;

Contents

1 Technical parameters

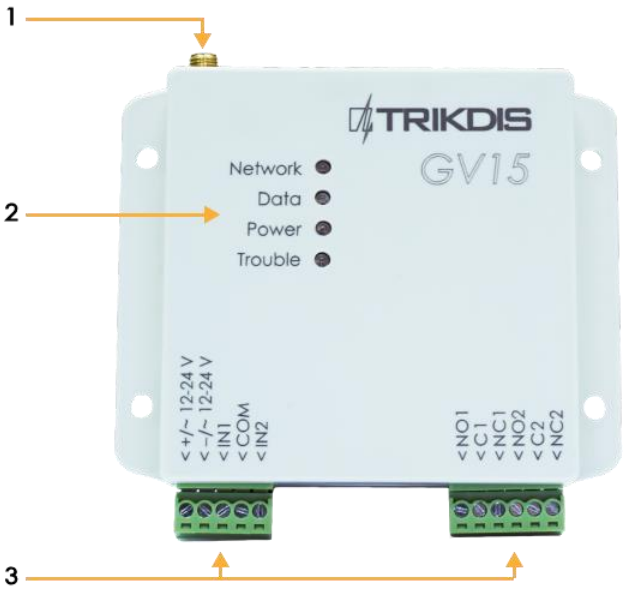
Parameter	Description
GSM modem frequencies	850 / 900 / 1800 / 1900 MHz
Power supply	12-36 V DC or 12-24 V AC
Current usage	Standby – 50 mA While sending SMS – instantly up to 0,25 A
Number of relays	2
Relay commutated	DC or AC up to 24 V, current up to 1 A
Relay control command	By phone call, SMS or DTMF tones
Switching relay contacts	**Pulse** – control command commutates relays for 1-60 sec. **Level** – control command commutates relays until the next control command, e.g., until the next call.
Memory	Up to 8 administrator names and their phone numbers Up to 1000 user names and their phone numbers
Inputs	2 (IN1 and IN2), Set for NO ($R \leq 10$ kΩ) or NC ($R \geq 0,5$ kΩ)type circuits
Operating environment	Air temperature from -20 °C to +50 °C, at humidity up to 93% (without condensation)
Parameter setting	a) Software "TrikdisConfig" via USB; b) Special syntax SMS messages
Controller dimensions and weight	100.6 x 80.7 x 23.5 mm , up to 110g

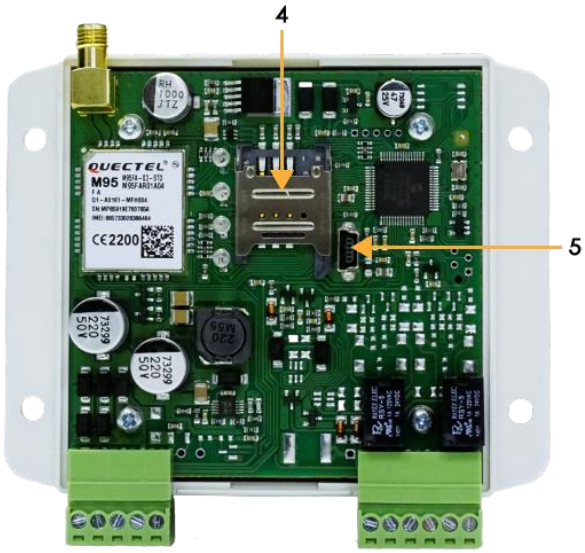
2 Package contains

Controller GV15	1 pc.
Adhesive mounting tape (7cm)	1 pc.
GSM antenna ANT04 (2,5 m with stick-on pad)	1 pc.

Note: USB cable (Mini-B type) designed for controller programming is not included.

3 Controller components





1. GSM antenna SMA port
2. Light indicators
3. Removable external contact connector
4. SIM card slot
5. USB Mini-B connector for controller programming

3.1 Purpose of terminals

Name	Description
+/~ 12-24 V	Power supply + terminal or alternating supply voltage terminal
-/~ 12-24 V	Power supply - terminal or alternating supply voltage terminal
IN1	1st input IN1 terminal
COM	Common ground terminal for inputs IN1 and IN2
IN2	2nd input IN1 terminal
NO1	1st relay NO terminal
C1	1st relay common terminal
NC1	1st relay NC terminal
NO2	2nd relay NO terminal
C2	2nd relay common terminal
NC2	2nd relay NC terminal

3.2 Light indication

Indicator	Status		Description
Network	Off		Controller is turned off or GV15 initiation in progress
	Blinking		Registration to GSM network in progress
	Lighting for 5 sec. + N flashes		N - relative GSM signal level 3 flashes – minimum sufficient level (30%), 10 flashes – maximum (100%)
Data	Off		No operations
	On		Data processing (receiving a call or receiving/sending SMS/programming in progress)
Power	Off		Too low supply voltage or no power supply
	Lighting		Normal power supply
Trouble	Off		Non troubles
	Lighting for 5 sec. + N flashes:	1 flash	Insufficient supply voltage
		2 flashes	No SIM card
		3 flashes	PIN code error
		4 flashes	Registration to GSM network within 60 seconds failed
		5 flashes	Operation mode setting error *
		6 flashes	Threshold GSM signal level (~ 30%)**
		7 flashes	Critical error in the parameters structure
		8 flashes	Error in the user phone number list structure

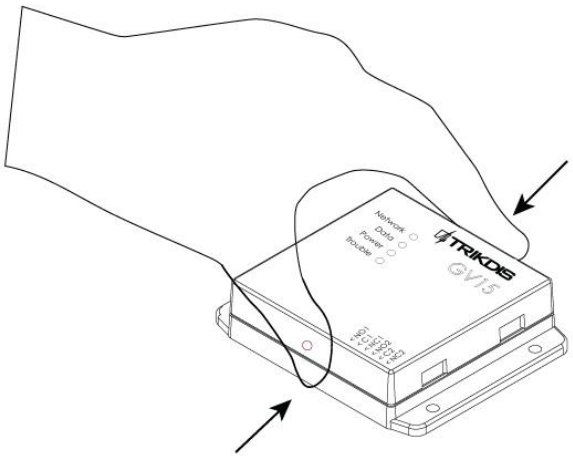
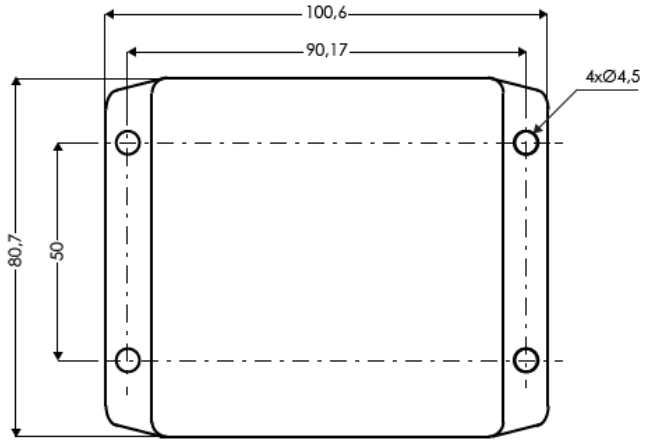
Notes:

* - not a single administrator phone number is entered and the user list is prohibited.

** - use a portable GSM antenna with a cable and fit it to the exterior of the case if a controller is mounted into the metal case of automatics.

4 Controller installation

Controller factory settings provide that any user calling to the number of the inserted SIM card can control the first relay. The user of Administrator level can control both relays by sending a message of respective content. In order to have dial control from authorized users or change factory settings, after installation procedure see 6 “Controller operation and configuration with “TrikdisConfig”.

Opening of the controller case	Controller mounting dimensions
	
To open the case push pointed locations as shown on a diagram and lift the case cover.	Dimensions are expressed in millimetres

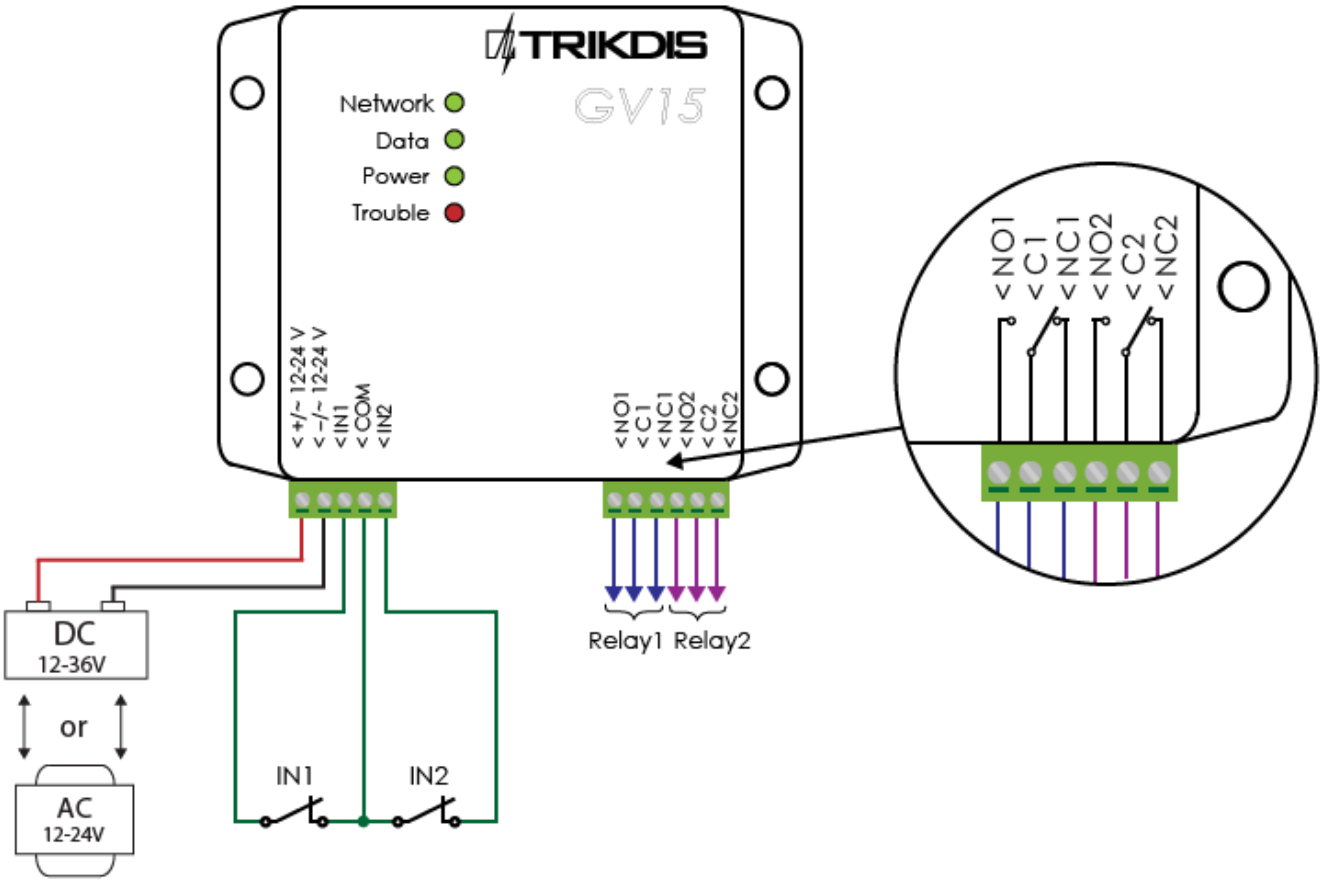
4.1 Installation procedure

1) Open the controller case and insert the SIM card into the controller. SIM card must be already registered in GSM network. Prior inserting the card, ensure that PIN code request function is disabled.
2) Embed the controller into the automatics mounting case.
3) Connect GSM antenna.
4) Connect controller power supply and automatics control circuits to the controller contacts according to the scheme below.
5) Turn on power supply of the whole system.
6) Wait for the controller to start operating. Monitor the light indication of the controller operation:
   - **Network** LED lights up for 5 seconds and flashes at least 3 times;
   - **Trouble** LED does not light up;
   - **Power** LED lights up in green.

   If the indication differs from the above listed, see 3.2 “Light indication".
7) Check if the automatics can be controlled by a call – call to the SIM card number of the controller.
8) Send these two SMS messages to the controller SIM card number in order to gain the administrator status and change the default password of SMS commands:
   - "**123456 SETAP APNR1:+NNNNNNNNNNN**" (Administrator phone number adding command. +NNNNNNNNNNN – administrator phone number).
   - **"123456 PSW XXXXXX"** (New SMS password setting command. Instead of XXXXXX enter your six digit code and remember it).

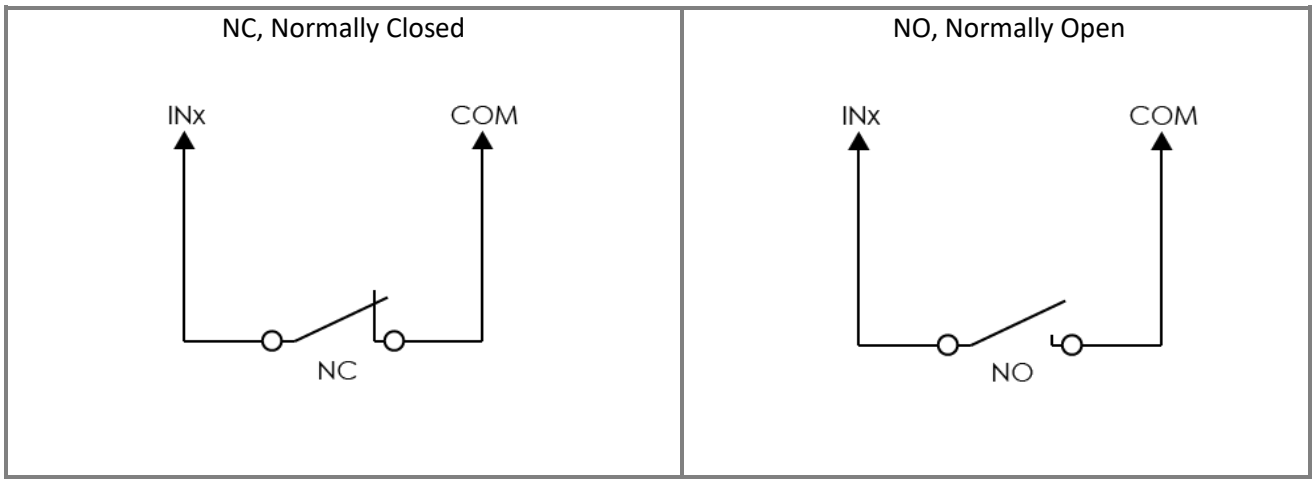
If you wish your system to be controlled by authorized persons only, it must be configured using SMS messages or software **TrikdisConfig**. For more details read sections 6 **“**Controller operation and configuration with “TrikdisConfig” and 7 “Configuration and control by SMS messages“.

5 Wiring diagrams



5.1 Inputs connection

The controller contains two input terminals (IN1 and IN2) for connection of sensor circuits. For setting the input connection type and reports on activations see. 6.4 “Input “.



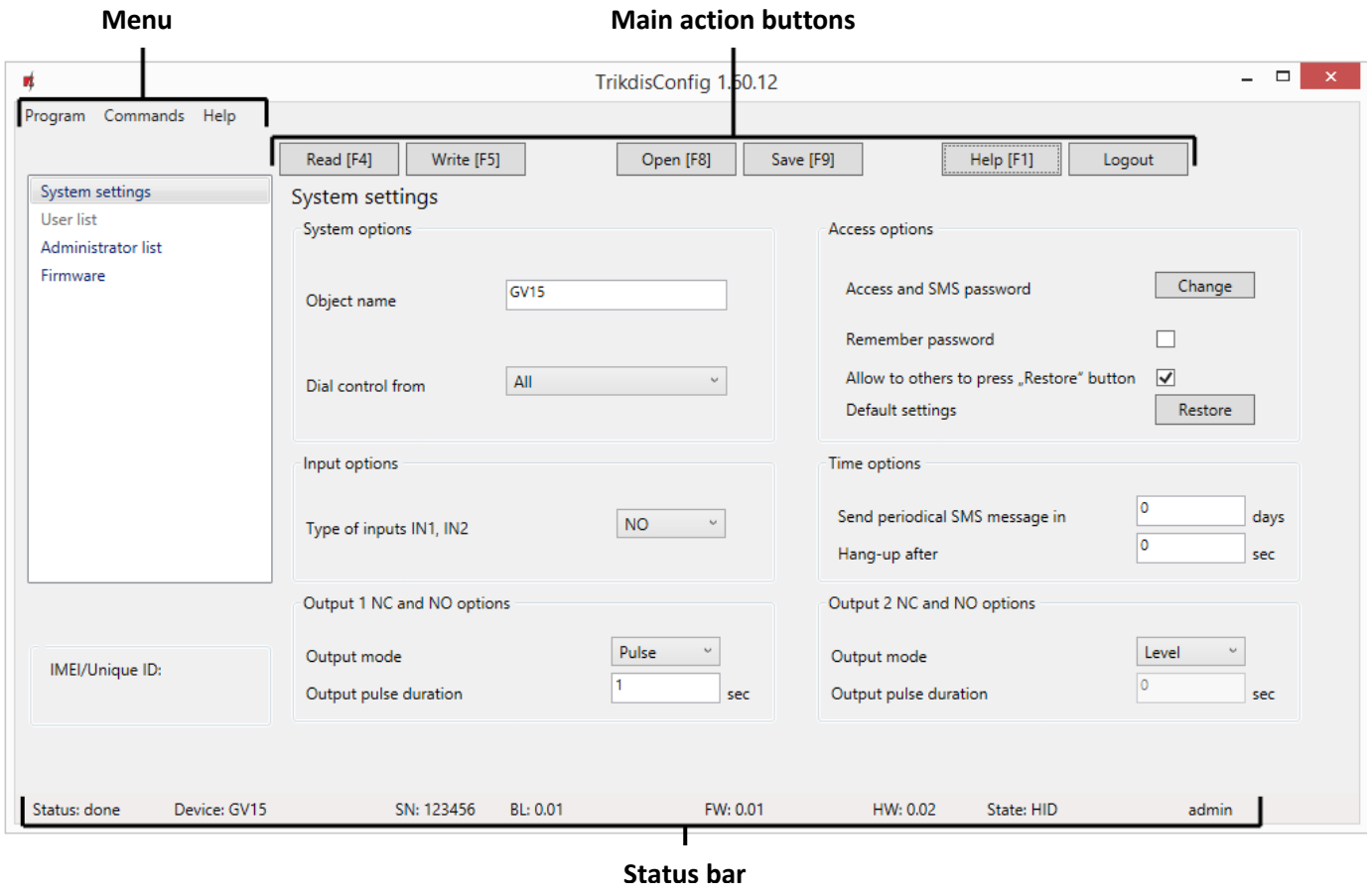
6 Controller operation and configuration with “TrikdisConfig”

6.1 Connection via USB cable to TrikdisConfig

1) Parameter setting software **TrikdisConfig** should be installed. Software available at www.trikdis.lt, page about controller.
2) After the software is installed, connect the controller and computer with USB cable. Power supply via USB port is sufficient to set the controller operation parameters, so additional supply is not necessary.
3) Run the parameter setting software "**TrikdisConfig**“. The firmware shall automatically recognize the connected device and open a new window for programming.

6.2 General software operation

1) To read the parameters entered in the controller, click the button **Read [F4]** and enter Access and SMS password in the pop-up window (Window requesting password will not appear if the password is set to default). When the controller operation parameters are read for the first time, the software will show default parameters.
2) After changing the parameters, click the button **Write [F5]** to enter the changes in the controller memory.
3) The controller configuration may be saved in the computer. Click the button **Save [F9]** and create the controller configuration file. When needed, open the file by clicking the button **Open [F8].**
4) When the configuration is complete, unplug the USB cable from the controller USB port. Disconnect from the product in the software by clicking the button **Logout.**



Menu

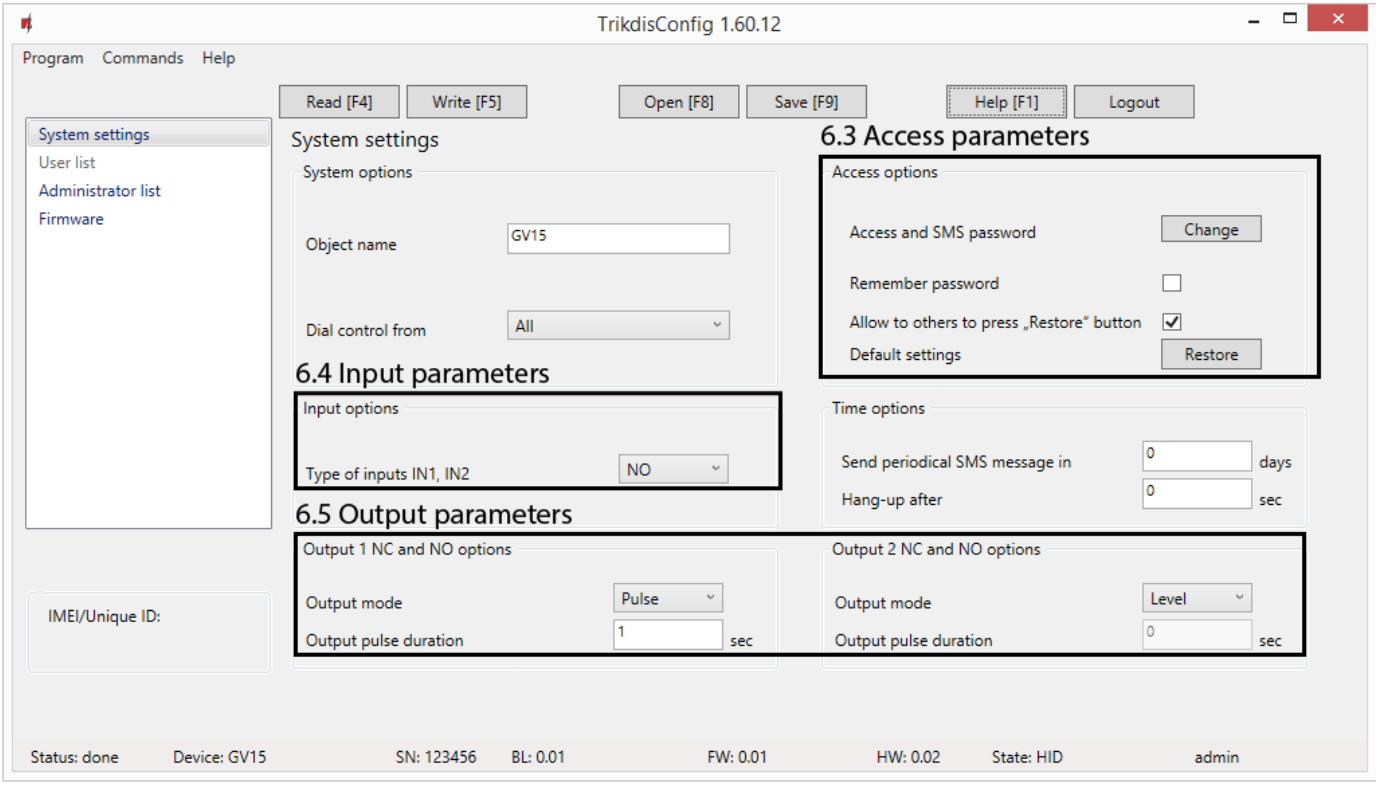
Name	Description
Program	Program language selection section.
Commands	Program control actions.
Help	Auxiliary information about the module and software.

Main action buttons

Name	Button meaning
Read [F4]	Read the controller parameters
Write [F5]	Write the controller parameters into the module.
Open [F8]	Open the saved file of parameters.
Save [F9]	Save the file of parameters.
Help [F1]	Open the selected help text.
Disconnect	User logout.

Status bar

Name	Description
Status	Action status
Device	Device type
SN	Serial number
BL	Bootloader version
FW	Controller firmware version
HW	Hardware version
Status	Logon status
Admin	Access level



6.3 Access parameters

6.3.1 Changing Access and SMS password

Logon and SMS password is designated for authorized user recognition. By entering the password, the user will be able to change the controller operation parameters via "TrikdisConfig" or SMS messages. The factory default Access and SMS password is **123456**.

To change the password, go to the program menu **System settings,** field **Access options**, and click the button **Change** next the **Access and SMS password**. Enter the new password for two times in the pop-out window.

Note: password shall consist of six symbols, digits and Latin letters only.

For the program to remember the password and not to prompt entering it when writing and reading the parameters, mark the checkbox next to **Remember Password**.

6.3.2 Restore of default settings

To reset the controller default settings, go to the program menu **System settings**, field **Access options**, and click the button **Restore** next to **Default Settings**.

Note: **Access and SMS password** is reset along with the factory settings. It is recommended to change the password.

Default settings may be reset even without being logged in to the controller with password. However, in order to do so, the checkbox shall be marked next to **Allow to others to press “Restore” button**. In such a case, having the equipment connected via the USB cable to the computer, it is not necessary to read its parameters, the button **Restore** will be active.

6.4 Input parameters

The controller has two inputs, upon their activation messages will be generated and reported to the administrator level users (if set so).

6.4.1 Input type selection

To select input connection type, go to the program menu **System settings**, field **Input options**, and choose one of two available connection type (NO, NC) next to **Type of inputs IN1, IN2**.

6.4.2 Message sending after inputs actuation/restoration

Message sending is enabled for each administrator separately. This can be done in the program menu **Administrator List**, section **Administrators**, by marking the checkbox of required input in the columns **IN1** and **IN2** in the row of the preferred administrator. SMS message text may be changed, for more details see 6.7.1 “Message text parameters“.

6.5 Relay parameters

The controller has two relays which can be subject to dial control or SMS message control. Relay enabling/disabling can be reported to the users by SMS message, see 6.7 “Administrator parameters“.

6.5.1 Operation modes

Each relay can be set to operate in one of selected modes:

a) Level – relay contacts status is switched to the opposite, once controller receives a control command.
b) Pulse – relay contacts status is switched to the opposite to the set pulse duration, once controller receives control command. Pulse duration 1-60 seconds.

Relay operation modes are selected in the program menu **System settings**: for the first relay – in **Output 1 NC and NO options** field, for the second relay – in **Output 2 NC and NO options** field. Mode type (Level, pulse) shall be checked next to **Output Mode**. If pulse mode is checked, the pulse duration must be indicated at **Output pulse duration**.

6.5.2 Control types

Relay may be controlled by:

1) SMS messages – both relays may be controlled by sending SMS command of respective content. This can only be performed by the users of administrator level. For more details, see 7 “Configuration and control by SMS messages“.
2) Call – having selected the preferred mode, the first relay or both relays may be controlled, for dial control selection see 6.5.2.1 Dial control modes. The users can control the first relay by dial control, and the administrators - optionally the first, second or both. For Administrator control selections, see 6.7 “Administrator parameters“. Having the dial control, the controller can reject a call without answering or reject after the set time. This can be done in the program menu **System settings**, field **Time options**, by indicating the time in seconds (if "0" is indicated, call will be rejected without pick up) next to **Hang-up after**.
3) Call (DTMF tones) – both relays may be controlled by calling to the inserted SIM card number or dialling the code of respective content. This can only be performed by the users of administrator level. For more details, see 9.2 “By DTMF tone phone call“.

6.5.2.1 Dial control modes

To select dial control mode, go to the program menu **System settings**, field **System Options**, next to **Dial control from** indicate one out of three modes:

a) All – will be controlled by anyone calling to the controller SIM card number. The only first relay is controlled.
b) Users and Administrators – the users from "User list" will control the only first relay, see 6.6 User list parameters. The users from "Administrator list" can control the selected relays, see 6.7 Administrator parameters. DTMF tones control type is additionally available to the administrators.
c) Only Administrators - only the users from "Administrator list" can control the selected relays, see 6.7 Administrator parameters. DTMF tones control type is additionally available to the administrators.

6.6 User list parameters

To form a list of users authorized for dial control of the first relay, go to the program menu **User List**. The dial control mode - **Users and Administrators** - must be selected.

User data shall be entered in the table **Dial list**. Enter the user name in the row **Dial user name** and enter user phone number in the row **Phone No**.

Note
Numbers must be entered in international format using prefix “+”! (Up to 16 digits).

It is necessary to enter the user name the length of which must be no longer than 13 symbols.

Use Latin language alphabet to write the name.

6.6.1 User list importing/exporting

When administrating the long list of user phone numbers, it can be imported and exported. The list can be saved, moved to a new product or modified in more convenient way.

Click the button **Export** to download the list. After this step a file of CSV type is formed. When opening the file with the preferred program, please note, that the user name of 1-13 symbols must be entered, the phone number must be started with prefix "+" , and completed with symbol ";". Click the button **Import** to load the list.

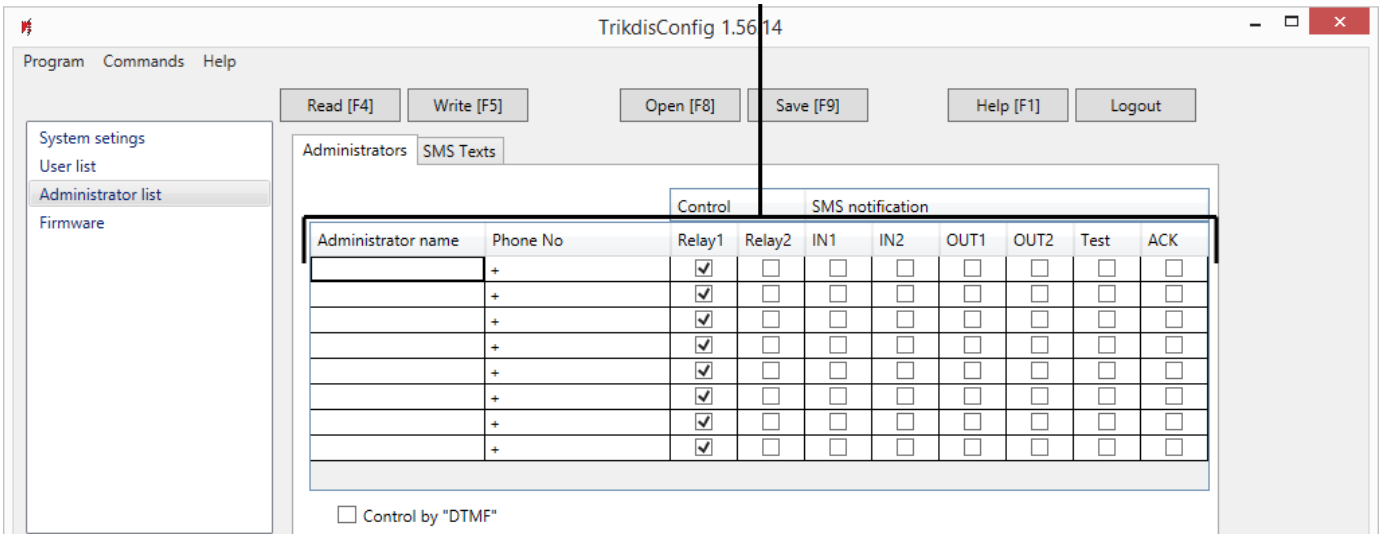
6.7 Administrator parameters

To form a list of administrators authorized for dial control or SMS sending to control both relays, go to the program menu **Administrator list**, section **Administrators**. It should be also indicated in the section which relay will be controlled by call and which events will be reported to the administrator by receiving SMS. For SMS message text changing, see 6.7.1 Message text parameters.

The administrator may control the relays just with a call indicating the relay to be controlled, or by call using "DTMF" tones. During "DTMF" tones dial control, after a call was made the command must be entered and preferred relay for control must be selected. This function is enabled by marking the checkbox next to **DTMF tones control**. For "DTMF" tones call commands, see 9.2 “By DTMF tone phone call“.

Note. "DTMF" tones dial control is not possible, if dial control mode **All** was selected.

Administrator parameters



Administrator parameters

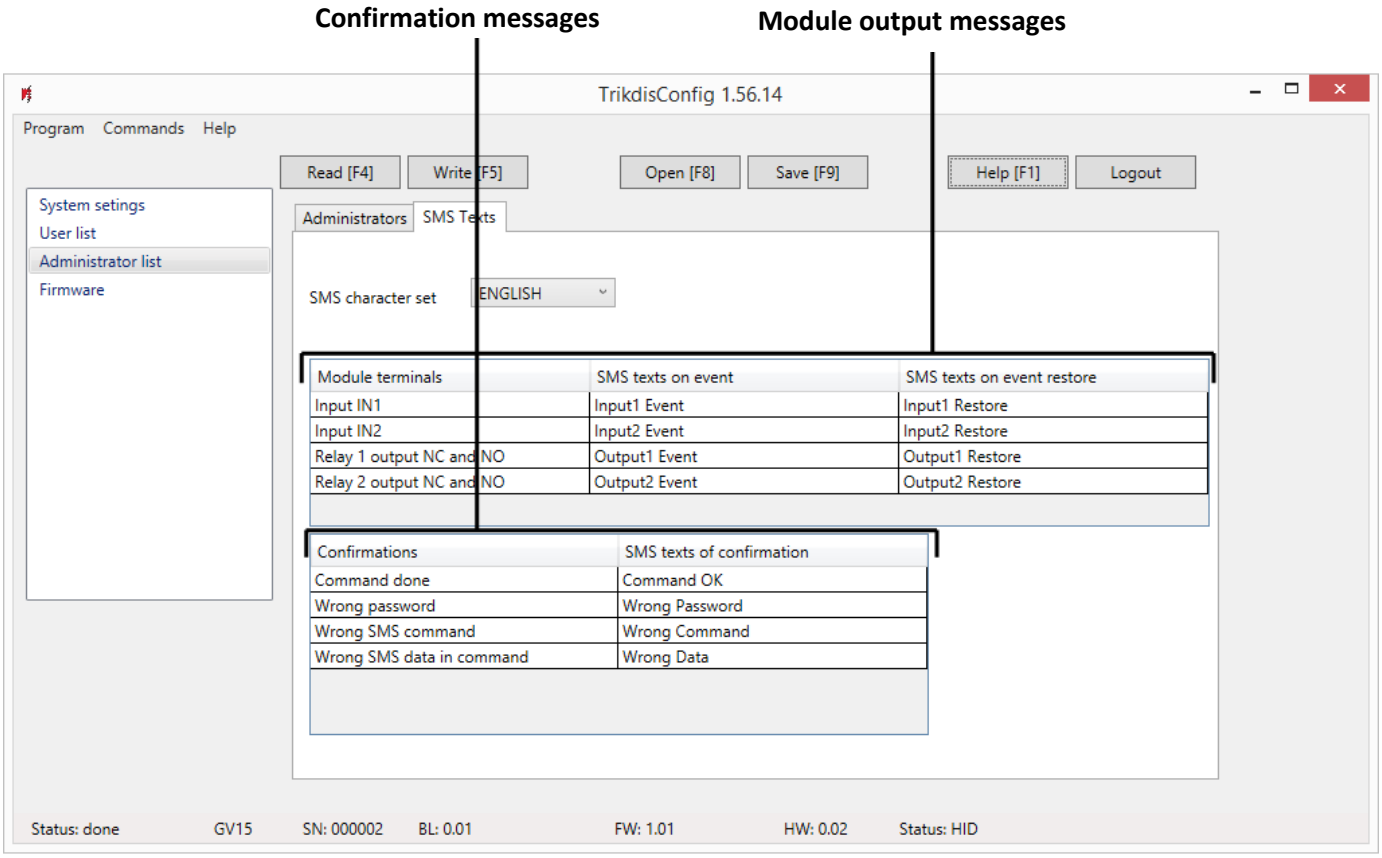
Name	Description
Administrator name	Administrator name
Phone No.	Administrator phone number must be entered in international format using prefix "+".
Relay 1	Dial control of Relay 1 will be enabled when checked.
Relay 2	Dial control of Relay 2 will be enabled when checked.
IN1	SMS message sending after input IN1 actuation will be enabled when checked.
IN2	SMS message sending after input IN2 actuation will be enabled when checked.
OUT1	SMS message sending after Relay 1 actuation will be enabled when checked.
OUT2	SMS message sending after Relay 2 actuation will be enabled when checked.
Test	Periodic test report sending will be enabled when checked. For more details, see 6.8 “Periodical “.
ACK	Sending replies to SMS command requests will be enabled when checked.

Note. The controller will not operate and control by persons specified in User list will be disabled unless every single administrator name (not exceeding 28 symbols) and phone number (not exceeding 16 digits) is properly entered.

6.7.1 Message text parameters

SMS texts sent by the controller may be changed. They can be changed in the program menu **Administrator list,** section **SMS Texts**.

SMS message encoding may be changed in the field **SMS character set**. Options available: English, Estonian, Latvian, Lithuanian, Russian.



Confirmation messages

Name	Description
Confirmations	Replies confirming a received message.
SMS text of confirmation	Reply SMS texts

Module output messages

Name	Description
Module terminals	Names of output to be reported by message
SMS texts on event	SMS message texts after output mode changed.
SMS texts on event restore	SMS message texts after output mode restored.

6.8 Periodical test messages

The controller may send test messages on periodic basis. To select the period, go to the program menu **System settings**, field **Time options**, and enter the number of days, the frequency for report sending next to **Sending periodical SMS messages in**. Message sending time is calculated since the controller turn on time. Only the administrators do receive periodic test messages.

6.9 Controller operation firmware updating

The controller firmware version can be updated (changed) in the program menu **Firmware**.

To do so:

1) Connect the controller to the computer via the USB cable.
2) Run software "TrikdisConfig".
3) Select the menu branch **Firmware**.
4) Click the button **Select** and choose the required operation firmware file.
5) Click the button **Update [F12]**.
6) Wait for the prompt about the update complete to appear.
7) Click the button **OK** in the window opened. After the update all the previous controller operation parameters will remain the same.

7 Configuration and control by SMS messages

Controller GV15 parameters may be set and changed by sending SMS messages from a phone number, which is on Administrator list. In case there are not any entered administrator phone numbers in the controller, become an administrator by sending the following SMS message to the controlled SIM card number: **123456 SETAP APNR1:+NNNNNNN**.

Structure of command SMS message:

PASSWORD SPACE **COMMAND** SPACE **PARAMETERS**

E.g. 123456 SPACE SETAP SPACE APNR1:+NNNNNNNNNNN

Description: 123456 – password, SETAP – command, APNR1:+NNNNNNNNNNN – parameters.

Notes

The phone number of the first administrator cannot be deleted but edited only.

The controller will not operate and control by persons specified in User list will be disabled unless every single administrator name (not exceeding 28 symbols) and phone number (not exceeding 16 digits) is properly entered.

Commands sent by SMS message

Item No.	Command	Content	Note
1	RESET		Controller GV15 reset E. g.: **123456 RESET**
2	INFO		Inquiry about controller status. E. g.: **123456 INFO**
3	PSW	New password	Controller GV15 password changing. E. g.: **123456 PSW 654321**
4	SETC	 ALL LIST DISABLE	Permission for dial control: All callers (default) Only those on User and Administrator lists; Only those on Administrator list. E. g.: **123456 SETC LIST**
5	SETD	 ON OFF	Permission for DTMF code control: Control by DTMF codes available; Control by DTMF codes impossible (default). E. g.: **123456 SETD ON**
6	SETI	 NC NO	Setting input IN1, IN2 type: Normally Closed; Normally Open; E. g.: **123456 SETI NO**
7	SETO1	 00 05	1st relay operation: Switching level mode; Specified impulse duration from 1 to 60 seconds E. g.: **123456 SETO1 05**
8	SETO2	 00 05	2nd relay operation: Switching level mode; Specified impulse duration from 1 to 60 seconds E. g.: **123456 SETO2 05**
8	SETT	 00 30	Test message sending period: Do not send test message; Send test message in specified period (1-30 days); E. g.: **123456 SETT 30**
9	SETH	 00 10	Answering phone call: Reject without answering (default); Answer a phone call and hold for specified time in seconds (1-10 sec.); E. g.: **123456 SETH 05**
10	SETL	 ENG LIT RUS	Setting the communication language: English (default); Lithuanian; Russian; E. g.: **123456 ENG**
11	SETAP	 APNR1:+xxxxxxxxx APNR2:+xxxxxxxxx APNR3:+xxxxxxxxx APNR4:+xxxxxxxxx APNR5:+xxxxxxxxx APNR6:+xxxxxxxxx APNR7:+xxxxxxxxx APNR8:+xxxxxxxxx	Entering the administrator phone numbers (up to 16 digits): 1st phone number; 2nd phone number; 3rd phone number; 4th phone number; 5th phone number; 6th phone number; 7th phone number; 8th phone number; E. g.: **123456 SETAP APNR1:+370654321**

			Deleting the administrator phone numbers;
		APNR2:DEL	2nd phone number;
		APNR3:DEL	3rd phone number;
		APNR4:DEL	4th phone number;
		APNR5:DEL	5th phone number;
		APNR6:DEL	6th phone number;
		APNR7:DEL	7th phone number;
			E. g.: **123456 SETAP APNR2:DEL**
12	SETAE		Allocation of messages to administrators:
		IN1	Sending IN1 input events;
		IN2	Sending IN2 input events;
		OUT1	Sending 1st relay events;
		OUT2	Sending 2nd relay events;
		TEST	Sending test message;
		ACK	Sending reply to command SMS
		REL1	1st relay operated (if DTMF commands disabled)
		REL2	2nd relay operated (if DTMF commands disabled)
			E. g.: **123456 SETAE APNR1:IN1-ON,IN2-ON,OUT1-ON,TEST-OFF,ACK-ON, REL1-ON**
13	SETAN		Administrator's name entering (1-28 symbols)
		APNR1:Name	1st administrator name;
		APNR2: Name	2nd administrator name;
		APNR3: Name	3rd administrator name;
		APNR4: Name	4th administrator name;
		APNR5: Name	5th administrator name;
		APNR6: Name	6th administrator name;
		APNR7: Name	7th administrator name;
		APNR8: Name	8th administrator name;
			E. g.: **123456 SETAN APNR2:name**
			Deleting administrator name:
		APNR2:	2nd administrator name deleting;
		APNR3:	3rd administrator name deleting;
		APNR4:	4th administrator name deleting;
		APNR5:	5th administrator name deleting;
		APNR6:	6th administrator name deleting;
		APNR7:	7th administrator name deleting;
		APNR8:	8th administrator name deleting;
			E. g.: **123456 SETAN APNR2:**
14	TXTA		Object name entering:
		<Object name>	E. g.: **123456 TXTA Object name**
15	TXTE		Entering the event message text:
		IN1:<Text>	IN1 input event;
		IN2:<Text>	IN2 input event;
		OUT1:<Text>	1st relay event;
		OUT2:<Text>	2nd relay event;
			E. g.: **123456 TXTE IN1: 1st input actuation**
16	TXTR		Entering the restoration event message text:
		IN1:<Text>	IN1 input restoration;
		IN2:<Text>	IN2 input restoration;
		OUT1:<Text>	1st relay restoration;
		OUT2:<Text>	2nd relay restoration;
			E. g.: **123456 TXTR IN2:2nd input restoration**

17	SETP	+370xxxxxx,<Name>	Entering user name and phone number: User phone number (up to 16 digits) and name (1-13 symbols). E. g.: **123456 SETP +370654321,Name**
18	DELP	+370xxxxxx <Name>	Deleting user phone number: User phone number; User name. E. g.: **123456 DELP +370654321** E. g.: **123456 DELP Name**
19	OUT1	ON OFF	Changing 1st relay status: 1st relay status changing into "On" 1st relay status changing into "Off" E. g.: **123456 OUT1 OFF**
20	OUT2	ON OFF	Changing 2nd relay status: 2nd relay status changing into "On" 2nd relay status changing into "Off" E. g.: **123456 OUT2 ON**
21	LISTA		Administrator list request. SMS messages with phone numbers and administrator names enlisted will be generated and sent. E. g.: **123456 LISTA**
22	LISTU		User list request. SMS messages with phone numbers and user names enlisted will be generated and sent. E. g.: **123456 LISTU**

7.1 Access and SMS password recovery

The forgotten Access/SMS password can be reset by SMS messages receiving a temporary password and using the temporary password to create a new one. Perform two SMS commands:

1. Temporary password request – "000000 Recovery Password". The controller will send a reply with temporary password "Temporary Password: XXXXXX ".
2. Password changing command – "XXXXXX PSW YYYYYY" (XXXXXX – temporary password, YYYYYY – new password).

Notes

Messages must be sent from the 1st administrator phone only.

Temporary password is valid only for one time. Having send a false password changing message (or other command) it is necessary to repeat the recovery operation.

8 Controller SMS messages

In case of the controller event or controller received SMS control command, the controller will send SMS messages to administrators. Their list is provided below.

1. During the periodic test, the test SMS message shall be sent to administrators:

Text	Value	Description
		To enter the object name go to the program menu **System settings**, field **System options**, in the box next to **Object name**.
Dev:	**GV15**	Device name.
IMEI:	**863071014319393**	GSM modem IMEI code
SN:	**000002**	Controller serial number
FW:	**0.02**	Controller firmware version
	LITHUANIAN	SMS message text encoding
Power:	**24,5V**	Supply voltage, V
Signal:	**90%**	Signal level, %
IN1:		IN1 input status;
	OK	• normal state (circuit intact)
	Event	• event state (circuit broken)
IN2:		IN2 input status;
	OK	• normal state (circuit intact)
	Event	• event state (circuit broken)
OUT:		Relay status:
	ON	• ON
	OFF	• OFF
Used Phone:		
Admin:	**x/8**	x phone numbers out of 8 possible entered
User:	**x/1000**	x phone numbers out of 1000 possible entered
	Fatal ERROR!!!	Controller ignoring the phone number list due to errors detected

2. Example of SMS message response to SMS inquiry:

Text	Meaning	Description
GV15	Object name	Object name specified during the configuration is displayed in the message
Input1 Event	Event in IN1 circuit	Controller event SMS text specified during the configuration is displayed in the message

3. Example of SMS message which is sent by the controller to administrators when its relay OUT event occurs:

Text	Meaning	Description
GV15	Object name	Object name specified during the configuration is displayed in the message
Output Event	Relay OUT event	Controller relay event SMS text specified during the configuration is displayed in the message
Name	User name	User name and its phone number, during the configuration entered in the user and administrator lists who has called to the controller, is displayed in the message.
+370654321	User phone number	

9 Automatics control

9.1 By phone call

If DTMF code control mode is disabled:

1. Call to the number of SIM card inserted in the controller GV15.
2. Control command will be completed after your call is rejected by the controller.

9.2 By DTMF tone phone call

If DTMF code control mode is enabled:

1. Call to the number of SIM card inserted in the controller GV15.
2. Using DTMF tone codes send the control command (e.g: **1*0#**). Command timeout no longer than 20 seconds.

Command structure

R * C #

R – controlled relay number (1 - 1st -relay, 2 - 2nd relay, 3 – both relays together);

C – control command (0 – turn off, 1 –turn on).

E. g.: **1*0#**

Value: 1 – 1st relay;

* - "*" symbol in a phone keypad;

0 – command to "turn off";

- "#" symbol in a phone keypad (the end of command);

3. The control command shall be accomplished when the controller having sent a tone signal of 0.5 sec duration will reject your phone call.

Note:

- Your phone number must be entered in the controller administrator list and the mode **All** (all callers permitted for control) shall not be used;
- The recommendation is to describe each command as a separate contact in a mobile phone memory to facilitate dial control. While entering Controller GV15 SIM card number it is necessary to enter a pause icon (by pressing and holding "*" phone button) and the command. The phone number will look in such a way:

  +xxxxxxxxxxxp1*0# (for Android system)

  +xxxxxxxxxxx,1*0# (for IOs system)

- In case of an error during manual entering of the command, press "#" button (the end of command). After a false command signal (three short tone signals) is heard the command can be re-entered (a new count of 20 sec. command holding time shall be started).

9.3 By SMS message

1. Send SMS message:
   E. g.: **123456 OUT1 OFF** to disable the 1st relay;
   E. g.: **123456 OUT1 ON** to enable the 1st relay.

2. Await for confirmation of command execution (if set by default in configuration):
   Command OK command completed;
   Wrong Password false password;
   Wrong Command false command;
   Wrong Data false parameters;
   Fatal Error error (this response is not described by the user).

Note: Your phone number must be entered into the list of controller administrators.