Cellular communicator G16T_4x1x

Installation manual

February, 2020

Contents

Safety requirements

The communicator should be installed and maintained by qualified personnel.

Prior to installation, please read this manual carefully in order to avoid mistakes that can lead to malfunction or even damage to the equipment.

Disconnect the power supply before making any electrical connections.

Changes, modifications or repairs not authorized by the manufacturer shall void your rights under the warranty.

Please act according to your local rules and do not dispose of your unusable alarm system or its components with other household waste.

1 Description

Cellular communicator **G16T_4x1x** can be connected to any alarm panel that has a landline dialer and supports dialing in Contact ID protocol with DTMF tones.

The communicator can transmit full event information to the security company's monitoring station receiver.

The communicator works with the **Protegus** app. Users can control their alarm system remotely and receive notifications about events. **Protegus** app works with all security alarm panels to which the communicator is connected to, regardless of manufacturer. Communicator can transmit event notifications to the Central Monitoring Station and work with **Protegus** simultaneously.

Cellular communicators **G16T_4x1x** are certified to the highest EN50131 Grade 4 security rating.

Features

Connects to panel's landline dialer:

- Communicator can be connected to control panel's landline dialer with 2 or 4 wires.
- When connected with 4 wires, the landline between the panel and communicator will be monitored.

Sends events to monitoring station receiver:

- Sends events to TRIKDIS software or hardware receivers that work with any monitoring software.
- Can send event messages to SIA DC-09 receivers.
- Can send event messages to SUR-GARD receivers. The annex has a table for converting Contact ID codes to SIA codes.
- Connection supervision by polling to IP receiver every 30 seconds (or by user defined period).
- Backup channel, that will be used if connection with the primary channel is lost.
- Events can be reported to CMS with SMS messages. SMS will be sent even if data connection stops working in the mobile operator network.
- With parallel communication channels events can be sent to two receivers at same time.
- When **Protegus** service is enabled, events are first delivered to CMS, and only then are sent to app users.
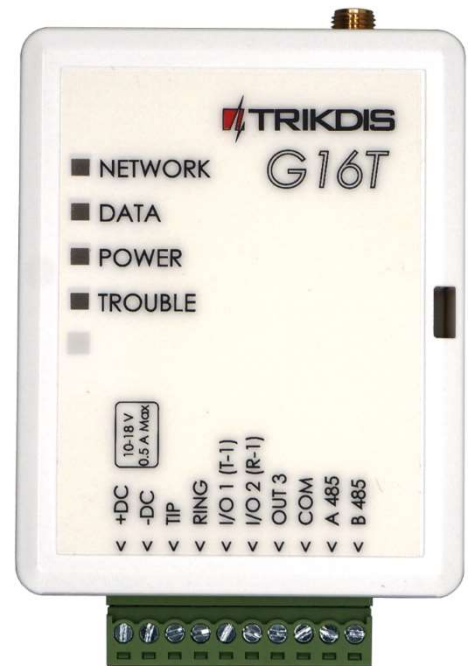
Works with Protegus app:

- "*Push*" and special sound notifications informing about events.
- Remote system Arm/Disarm.
- Remote control of connected devices (lights, gates, ventilation systems, heating, sprinklers, etc.).
- Remote temperature monitoring (with *iO* or *iO-WL* expanders).
- Different user rights for administrator, installer and user.
- Users can also be informed about events with SMS messages and phone calls.

Notifies users:

- Users can be notified about events not only with **Protegus** app, but also with SMS messages and a call.

Controllable outputs and inputs:

- 1 output, controlled via:
  - **Protegus** app.
  - SMS message.

- 2 double I/O terminals that can be set either as input (IN) or controllable output (OUT) terminals
- Add additional inputs and controllable outputs with wired and wireless *iO* expanders.

Quick setup:

- Settings can be saved to file and quickly written to other communicators.
- Two access levels for configuring the device for CMS administrator and for installer.
- Remote configuration and firmware updates.
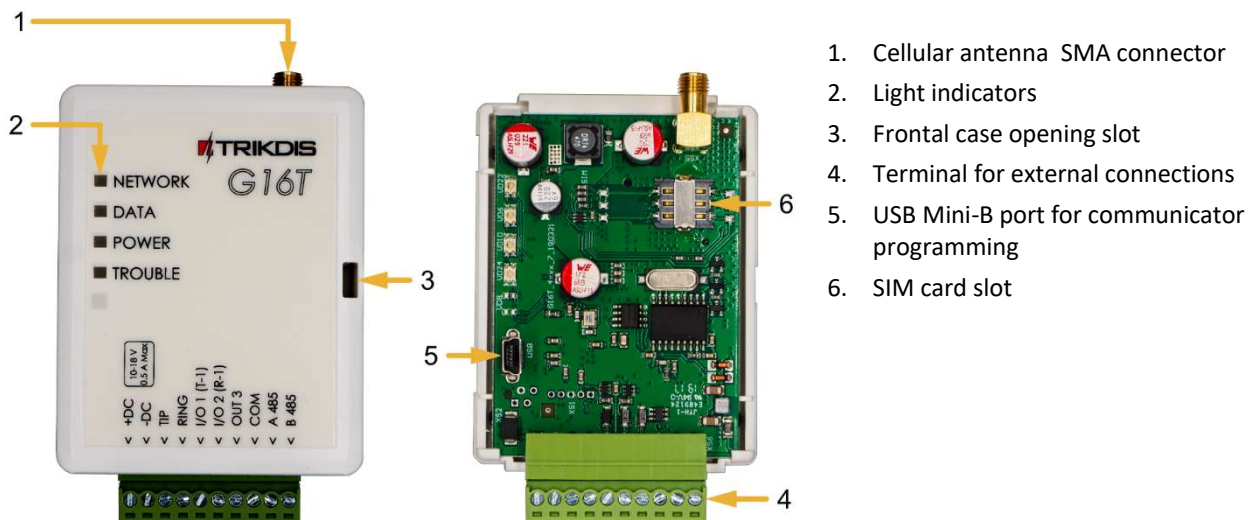
1.1 Communicator model types

This manual applies to these G16T_4x1x models:

- G16T_421x – version 4, 2G modem, 1 SIM
- G16T_431x – version 4, 3G modem, 1 SIM
- G16T_441x – version 4, 4G modem, 1 SIM
- G16_4M10 – version 4, 1 SIM, LTE CatM1 & EGPRS modem.

1.2 Specifications

| Parameter	Description
Connects to panel	Landline dialer (TIP RING contacts)
Dual purpose terminals [IN/OUT]	2, can be set as either NC; NO; NC/EOL; NO/EOL; NC/DEOL; NO/DEOL (10 kΩ) type inputs or open collector (OC) type outputs with current up to 0,15 A, 30 VDC max. Expandable with *iO* series expanders
Output	1, OC type, up to 0,15 A, 30 V max Expandable with *iO* series expanders
2G modem frequencies	850 / 900 / 1800 / 1900 MHz
3G modem frequencies	800 / 850 / 900 / 1900 / 2100 MHz
4G modem frequencies	Depends on region
Power supply voltage	10-18 V DC
Current consumption	60-100 mA (on standby) Up to 250 mA (while sending data)
Transmission protocols	TRK, DC-09_2007, DC-09_2012, TL150
Message encryption	AES 128
Changing settings	With *TrikdisConfig* computer program remotely or locally via USB Mini-B port Remotely with SMS messages
Operating environment	Temperature from -10 °C to 50 °C, relative humidity - up to 80% at +20 °C
Communicator dimensions	92 x 65 x 26 mm
Weight	80 g

1.3 Communicator elements

1. Cellular antenna SMA connector
2. Light indicators
3. Frontal case opening slot
4. Terminal for external connections
5. USB Mini-B port for communicator programming
6. SIM card slot

1.4 Purpose of terminals

Terminal	Description
+DC	+10 V/+18 V power supply
-DC	+10 V/+18 V power supply
TIP	Terminal to connect with security control panel TIP terminal
RING	Terminal to connect with security control panel RING terminal
I/O 1 (T-1)	Terminal for monitoring the telephone line or an 1st input/output terminal (default setting – OFF)
I/O 2 (R-1)	Terminal for monitoring the telephone line or an 2nd input/output terminal (default setting – IN, NO circuit)
OUT 3	Output terminal (OC type), current up to 0,15 A
COM	Common terminal (negative)
A 485	*RS485* bus A contact
B 485	*RS485* bus B contact

1.5 LED indication of operation

| Indicator	Light status	Description
NETWORK	Off	No connection to cellular network.
	Yellow blinking	Connecting to cellular network.
	Green solid with yellow blinking	Communicator is connected to cellular network. Sufficient cellular signal strength for 2G is level 5 (five yellow flashes) and for 3G, 4G network - level 3 (three yellow flashes).
DATA	Off	No unsent events.
	Green solid	Unsent events are stored in buffer.
	Green blinking	*(Configuration mode)* Data is transferred to/from communicator.
POWER	Off	Power supply is off or disconnected.
	Green solid	Power supply is on with sufficient voltage.
	Yellow solid	Power supply voltage is not sufficient (≤11.5V).
	Green solid and yellow blinking	*(Configuration mode)* Communicator is ready for configuration.
	Yellow solid	*(Configuration mode)* No connection with computer.
TROUBLE	OFF	No operation problems.
	1 red blink	SIM card not found.
	2 red blinks	SIM card PIN code problem (incorrect PIN code).
	3 red blinks	Programming problem (No APN).
	4 red blinks	Registration to GSM network problem.
	5 red blinks	Registration to mobile data network problem.
	6 red blinks	No connection with the receiver.
	7 red blinks	Lost connection with control panel.
	Red blinking	*(Configuration mode)* Memory fault.
	Red solid	*(Configuration mode)* Firmware is corrupted.

1.6 Structural schematic with G16T_4x1x usage
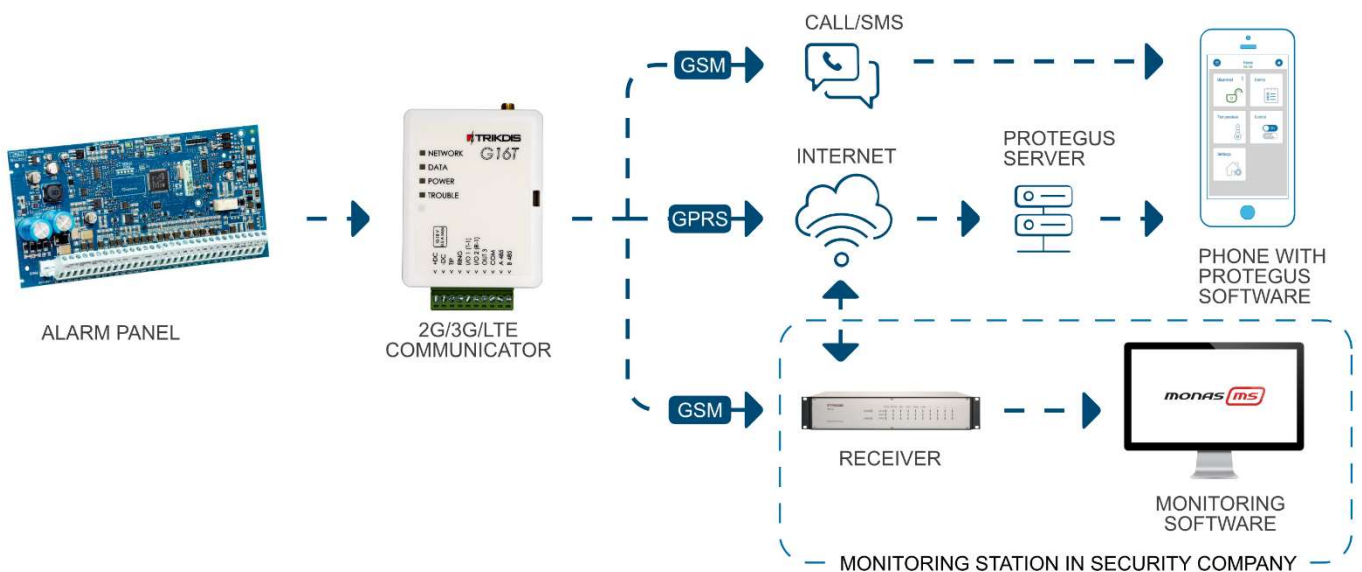
Note:	Before you begin, make sure that you have the necessary:
	1. USB cable (Mini-B type) for configuration.
	2. At least 4-wire cable for connecting communicator to control panel.
	3. Flat-head 2.5mm screwdriver.
	4. Sufficient gain cellular antenna if network coverage in the area is poor.
	5. Activated Nano-SIM card (PIN code request can be turned off).
	6. Particular security control panel`s installation manual.
	Order the necessary components separately from your local distributor.

2   Quick configuration with *TrikdisConfig* software

1. Download configuration software *TrikdisConfig* from www.trikdis.com (type "TrikdisConfig" in the search field) and install it.

2. Open the casing of the *G16T_4x1x* with a flat-head screwdriver as shown below:
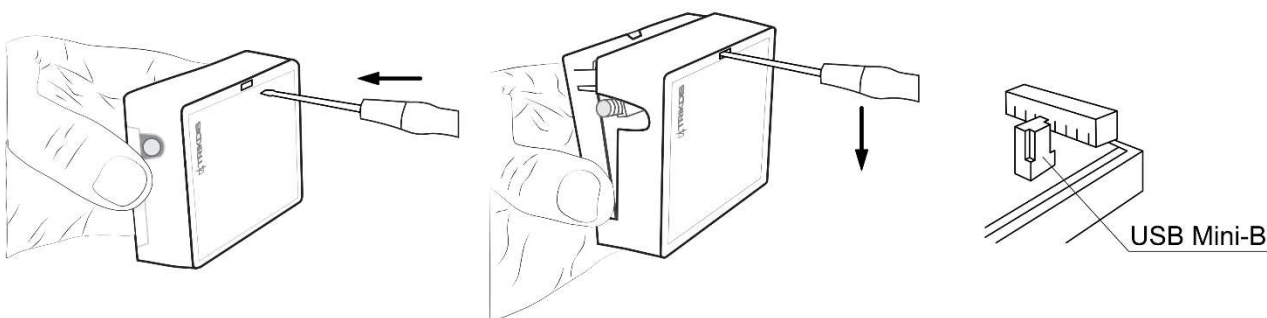
USB Mini-B

3. Using a USB Mini-B cable connect the *G16T_4x1x* to the computer.

4. Run *TrikdisConfig*. The software will automatically recognize the connected communicator and will open a window for configuration.

5. Click **Read [F4]** to read the communicator's settings. If requested, enter the Administrator or Installer 6-digit code in the pop-up window.

Below we describe what settings need to be set for the communicator to begin sending events to the Central Monitoring Station and to allow the security control to be controlled with the *Protegus* app.

2.1 Settings for connection with Protegus app

In "User reporting window" "PROTEGUS Cloud" tab:
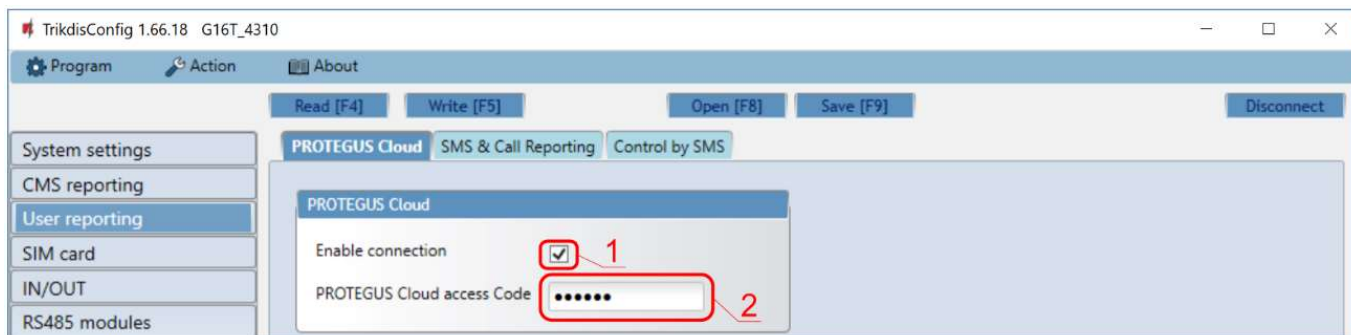
1) Select checkbox **Enable connection** to the PROTEGUS Cloud.

2) You can change the **Cloud access Code** for logging into *Protegus* if you want users to be asked to enter it when adding the system to *Protegus* app (default password - 123456).

In "SIM card" window:

3) Enter **SIM card PIN** code.

4) Change **APN** name. **APN** can be found on the website of the SIM card operator ("internet" is universal and works in many operator networks).
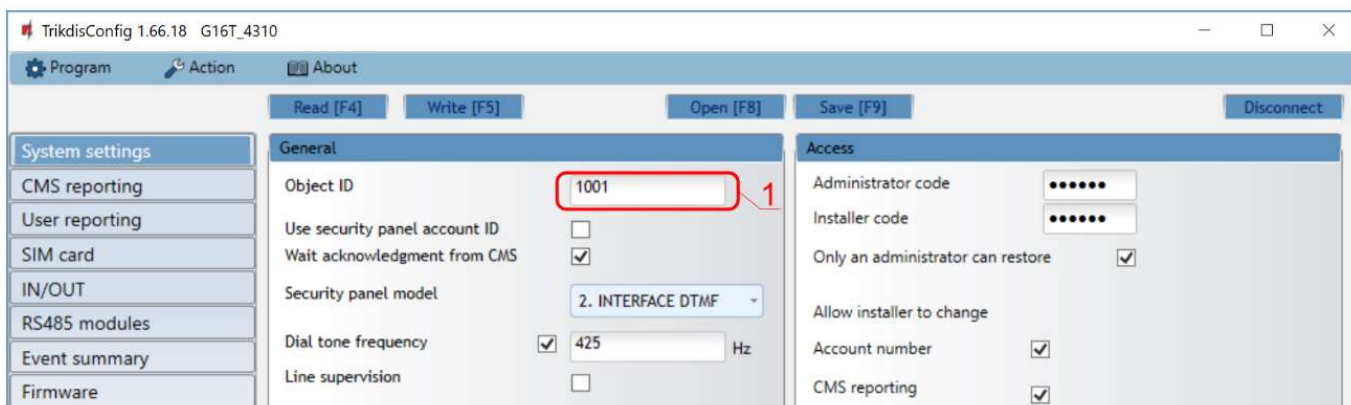
After finishing configuration, click the button **Write [F5]** and disconnect the USB cable.

Note:	For more information about other *G16T_4x1x* settings in *TrikdisConfig*, see chapter 6 „TrikdisConfig window description".

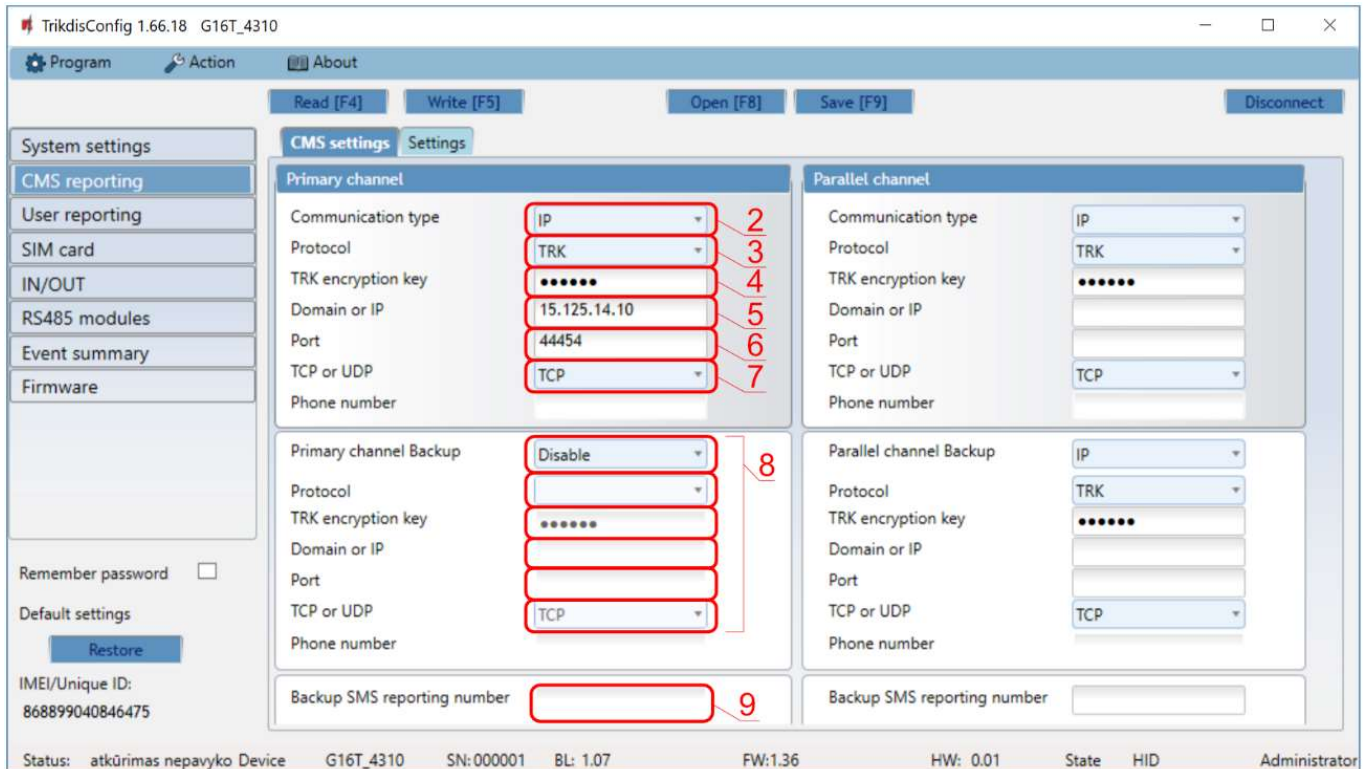|	
Important:	Do not forget to turn on the landline dialer of the alarm panel and set it up correctly, so that the panel would send the events. Alarm panel setup is described in chapter 4 "Programming the control panel".

2.2 Settings for connection with Central Monitoring Station

In "System settings" window:

1) Enter **Object ID** (account) number provided by the Central Monitoring Station (4 characters, 0-9, A-F. **Do not use FFFE, FFFF Object ID**).

In "CMS reporting" window settings for "Primary channel":

2) **Communication type** - select the **IP** connection method (we do not recommend SMS as the primary channel).

3) **Protocol -** select the protocol type for your event messages: **TRK** (to TRIKDIS receivers), **DC-09_2007** or **DC-09_2012** (to universal receivers), **TL150** (to SUR-GARD receivers).

4) **TRK encryption key** - enter the encryption key that is set in the receiver.

5) **Domain or IP -** enter the receiver's Domain or IP address.

6) **Port -** enter receiver's network port number.

7) **TCP or UDP** - choose event transmission protocol (**TCP** or **UDP**) in which events should be sent.

> **Note:** If you want to set communication with CMS via **SMS** messages, you only need to set **Encryption key** and **Phone number.** SMS messages can be received only by TRIKDIS receivers: IP/SMS receiver RL14, multichannel receiver RM14 and SMS receiver GM14.
>
> If you selected the **DC-09** protocol, additionally enter object, line and receiver numbers in the **Settings** tab of the **CMS reporting** window.

8) (Recommended) Configure **Primary channel Backup** settings.

9) (Recommended) Enter **Backup SMS reporting number.**

In "SIM card" window:

10) Enter **SIM card PIN** code.

11) Change the **APN** name. **APN** can be found on the website of the SIM card operator ("internet" is universal and works in many operator networks).

After finishing configuration, click **Write [F5]** and disconnect the USB cable.

Note:	For more information about other **G16T_4x1x** settings in **TrikdisConfig** see chapter 6 "TrikdisConfig window description".

Important:	Do not forget to turn on the landline dialer of the alarm panel and set it up correctly, so that the panel would send the events. Alarm panel setup is described in chapter 4 "Programming the control panel".

# 3 Installation and wiring

3.1 Installation process

1. Remove the top cover and pull out the contact terminal.
2. Remove the PCB board.
3. Fix the bottom part to the suitable place with screws.
4. Place the PCB board back into the case, insert contact terminal.
5. Screw cellular antenna on.
6. Insert nano-SIM card.
7. Close the top cover.
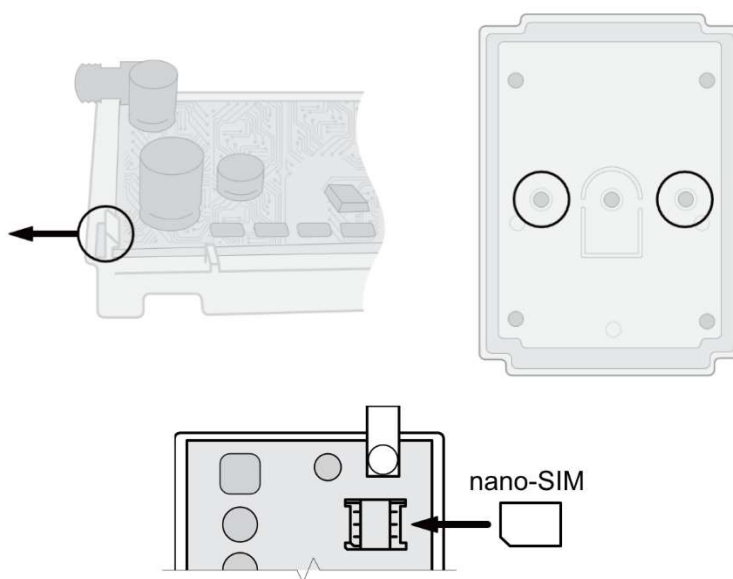
Note:	Ensure that the SIM card is activated.
	Ensure that mobile internet service (mobile data) is enabled if **Protegus** app or IP connection with CMS will be used.
	To avoid entering the PIN code in **TrikdisConfig**, insert the SIM card into your mobile phone and turn off the PIN request function.

3.2 Schematics for wiring the communicator to the security control panel

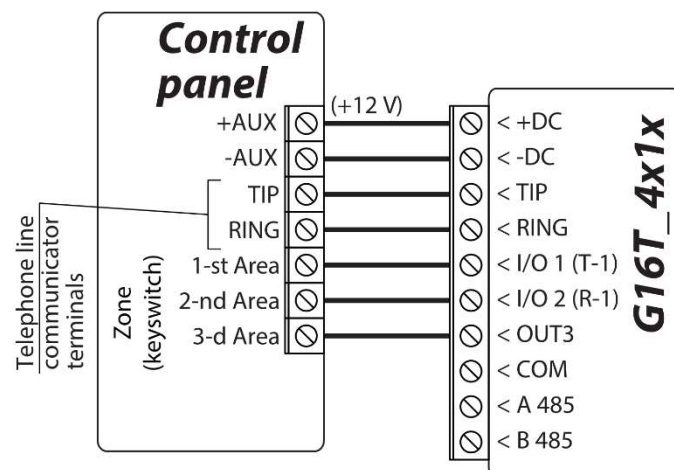Following one of the schematics provided below, wire the communicator to the control panel.
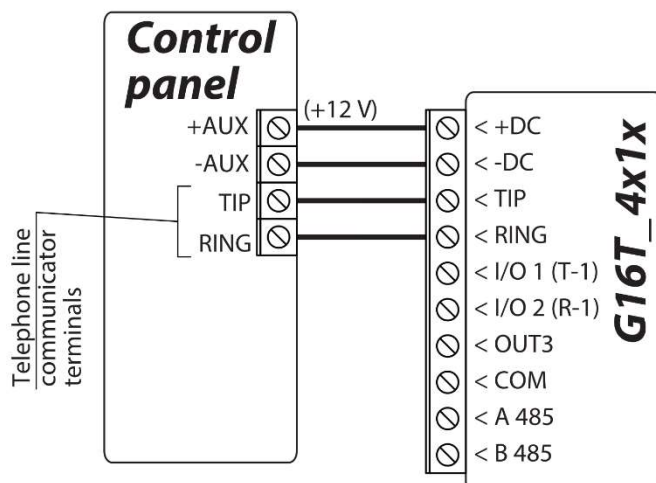
Communicator wiring diagram,
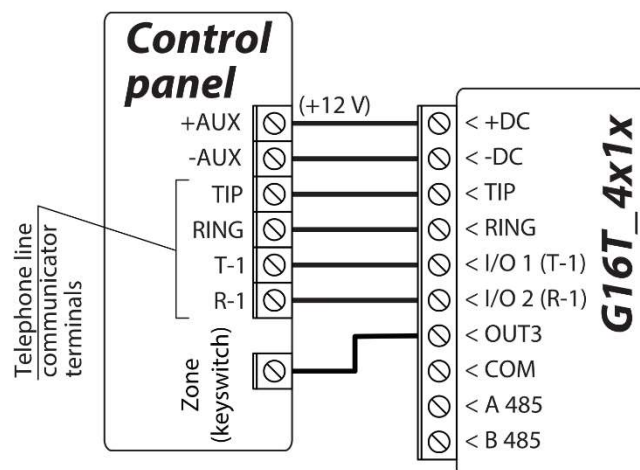when telephone line supervision is not set.
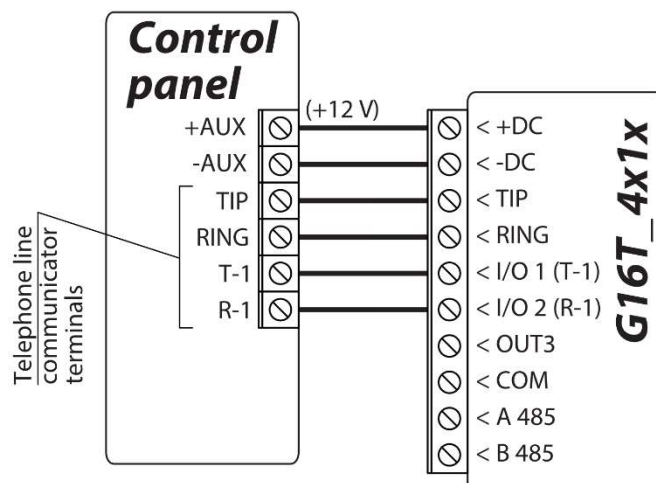
Communicator wiring diagram,
when telephone line supervision is set.

3.3 Schematics for connecting to panel keyswitch zone

Arming/disarming the panel via keyswitch zone,
when telephone line supervision is not set.

Arming/disarming the panel via keyswitch zone,
when telephone line supervision is set.

Follow these schematics if the control panel will be armed/disarmed with the **G16T_4x1x** PGM output turning on/off the panel's keyswitch zone.

Note:	The **G16T_4x1x** communicator has one programmable output OUT (PGM) and 2 universal input/output terminals that can be set to an OUT (PGM) operating mode. The outputs can control three areas of the security system. Area control settings are made in the **Protegus** app.

3.4 Schematics for wiring inputs

The communicator has 2 universal input/output terminals that can be set to input IN mode. NC, NO, NO/EOL, NC/EOL, NO/DEOL, NC/DEOL circuits can be connected to the input terminal. Default **I/O 2** input setting – NO. The input type can be changed in the **TrikdisConfig** window **IN/OUT -> Type.**

Connect the input according to the selected input type (NO, NC, NO/EOL, NC/EOL, NO/DEOL, NC/DEOL), as shown in the schemes below:
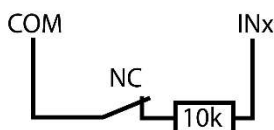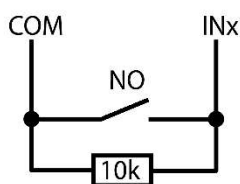
Normally open (NO).
Short - Alarm; Open -
Restore.

COM INx

NO
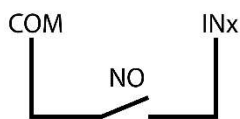
Normally closed (NC).
Short - Restore; Open -
Alarm.

COM INx

NC
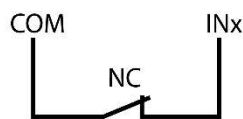
Normally closed with
10k End of line resistor
(NC/EOL).
Short - Alarm; Open -
Alarm; 10k - Restore.

COM INx

NC
10k

Normally open with
10k End of line resistor
(NO/EOL).
Short - Alarm; Open -
Alarm; 10k - Restore.

COM INx

NO
10k

Normally open with 10k End
of line resistor and tamper
recognition (NO/DEOL).
Short - Tamper; Open -
Tamper; 10k - Alarm;
12k-25k - Restore.

COM INx
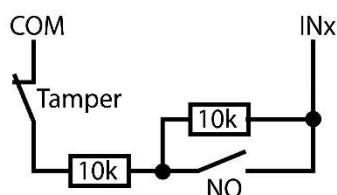
Tamper
10k
10k
NO

Normally closed with 10k End
of line resistor and tamper
recognition (NC/DEOL).
Short - Tamper; Open -
Tamper; 10k - Restore;
15k-25k - Alarm.

COM INx

Tamper
10k
10k
NC
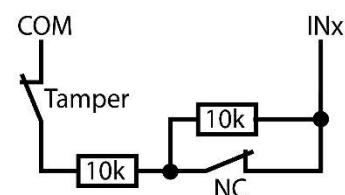
Note: If more inputs or outputs need to be connected to the communicator, or if you want to connect a temperature sensor, connect the TRIKDIS *iO* series wired or wireless output expander.

3.5 Schematics for wiring a relay

G16T_4x1x

Relay

+DC
I/O x

NC
C
NO
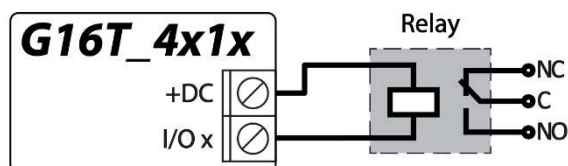
With relay contacts you can control (turn on/off) various electronic appliances. The I/O terminal of the communicator must be set to an output (OUT) mode.

3.6 Schematics for connecting iO series expansion modules

If more inputs or outputs need to be connected to the communicator, or if you want to connect a temperature sensor, connect the TRIKDIS *iO* series wired or wireless output expander.

3.7 Schematic for connecting the *W485* WiFi module

The *W485* module sends messages to the CMS (Central Monitoring Station) and to **Protegus** using a WiFi internet router. When WiFi connectivity is available, the *G16T_4x1x* sends event messages via the *W485* m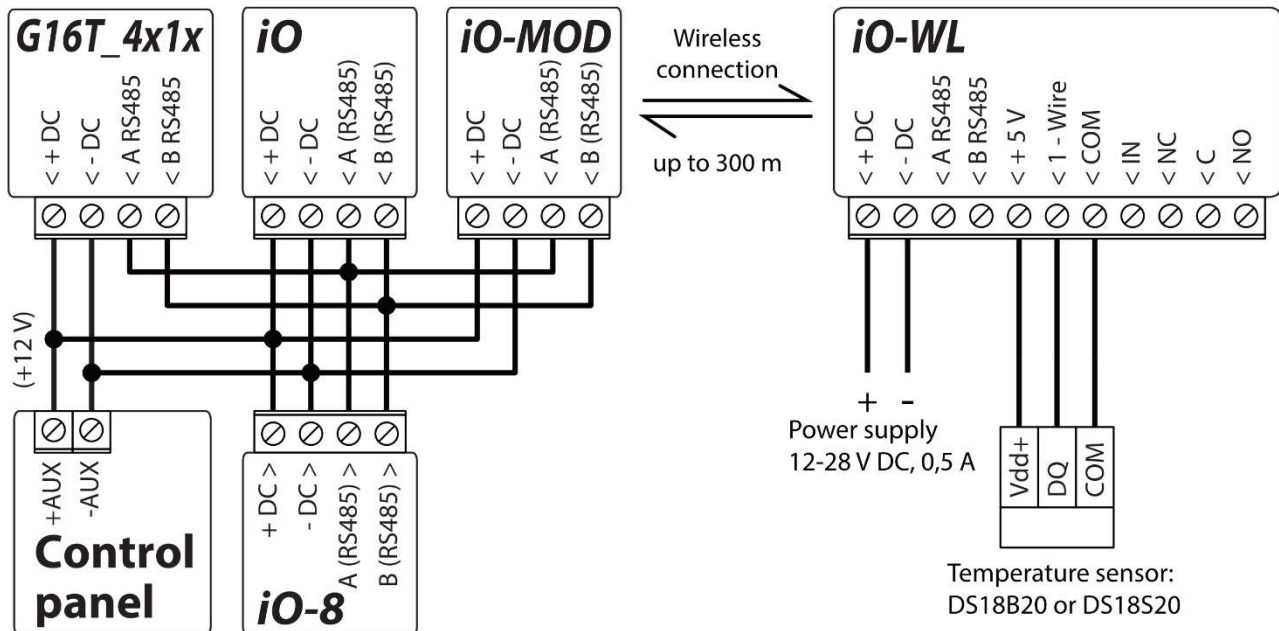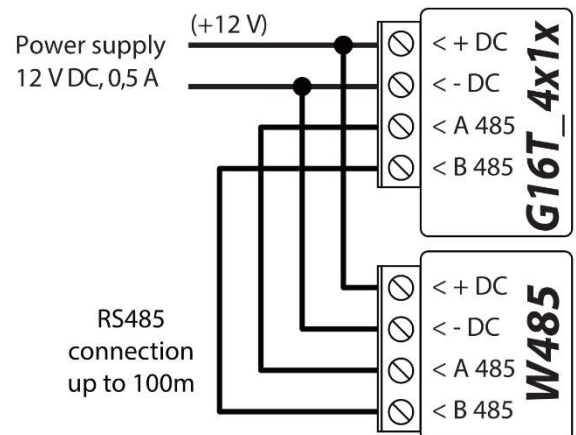odule. When WiFi connectivity is disrupted, the *G16T_4x1x* sends messages via GPRS. When WiFi connectivity is re-established, the *G16T_4x1x* returns to sending messages via *W485*.

Configuration of the *W485* WiFi module to work with the *G16T_4x1x* is described in chapter 6.7. „„RS485 modules" window".

Insert SIM card into the communicator *G16T_4x1x* for *W485* to work.

3.8 Schematic for connecting the E485 „Ethernet" module

The *E485* module sends messages to the CMS (Central Monitoring Station) and to **Protegus** using a wired internet connection. Using the *E485* with *G16T_4x1x*, CSP and *Protegus* messages are sent over wired Internet and mobile Internet is not used. If a wired internet connectivity is disrupted, the *G16T_4x1x* sends messages via the mobile Internet. When the wired Internet connectivity is re-established, *G16T_4x1x* starts sending messages via *E485*.

Configuration of the *E485* WiFi module to work with the *G16T_4x1x* is described in chapter 6.7. „„RS485 modules" window".

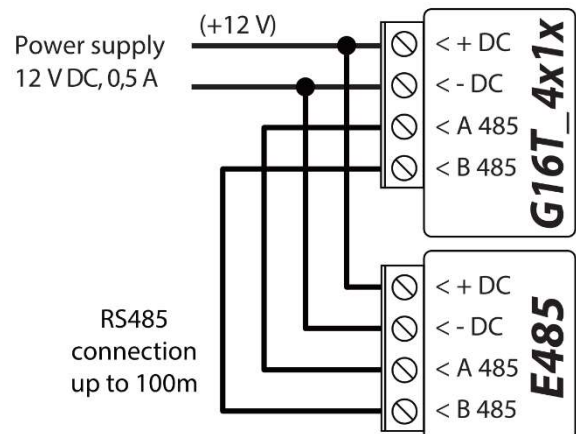**Insert SIM card into the communicator *G16T_4x1x* for *E485* to work.**

3.9 Turn on the communicator

To start the communicator, turn on the security control panel's power supply. This LED indication on the **G16T_4x1x** communicator must show:

- "POWER" LED illuminates green when the power is on;
- "NETWORK" LED illuminates green and blinks yellow when the communicator is registered to the network.

Note:	Sufficient strength of 2G cellular signal is level five (five "NETWORK" indicator flashes in yellow color). Sufficient strength of 3G/4G signal is level three (three "NETWORK" indicator flashes in yellow color).
	If you count less yellow "NETWORK" LED flashes, the network signal strength is insufficient. We recommend to select a different place to install the communicator, or to use a more sensitive cellular antenna.
	If you see a different LED indication, it indicates a certain malfunction. Diagnose it following the LED indication table in chapter 1.5 "LED indication of operation".
	If the **G16T_4x1x** indication does not illuminate at all, check the power supply and connections.

4   Programming the control panel

For the control panel to send events via the landline dialer, it must be turned on and properly set up. Following the panel's programming manual, configure the control panel's landline dialer:

1. Turn on the panel's PSTN landline dialer.
2. Enter the monitoring station receiver's telephone number (you can use any number longer than 2 digits. The **G16T_4x1x** will pick up and answer when the panel calls to any phone number).
3. Choose DTMF mode.
4. Select Contact ID communication protocol.
5. Enter the panel's 4 digit account number.

The control panel zone to which the **G16T_4x1x** output OUT is connected should be set to keyswitch zone for arming/disarming the control panel remotely.

Note:	Keyswitch zone can be momentary (pulse) or level. By default, the **G16T_4x1x** controllable output OUT is set to 3 second pulse mode. You can change the impulse duration or change to level mode in **Protegus** settings. See chapter 5.2 "Additional settings to arm/disarm the alarm system using control panel's keyswitch zone".

4.1 Programming Honeywell Vista landline dialer

Using the control panel's keypad enter these sections and set them as described:

- *41 – enter monitoring station receiver telephone number;
- *43 – enter control panel's account number;
- *47 – set the Tone dial to [1] and enter the number of dial attempts;
- *48 – use default setting, *48 must be set to 77;
- *49 – Split/Dual message. *49 must be set to 5;
- *50 – delay for sending burglary alarm events (optional). Default value is [2,0]. With it the event message transmission will be delayed for 30 seconds. If you want the message to be sent immediately, set [0,0].

4.2 Special settings for Honeywell Vista 48 panel

If you want to use **G16T_4x1x** communicator with Honeywell Vista 48 panel, set the following sections as described:

Section	Data	Section	Data	Section	Data
*41	1111 (receiver telephone number)	*60	1	*69	1
*42	1111	*61	1	*70	1
*43	1234 (panel account number)	*62	1	*71	1
*44	1234	*63	1	*72	1
*45	1111	*64	1	*73	1

*47	1
*48	7
*50	1
*59	0

*65	1
*66	1
*67	1
*68	1

*74	1
*75	1
*76	1

When all required settings are set, it is necessary to exit programming mode. Enter *99 in keypad.

5 Remote control

5.1 Adding the security system to Protegus app

With **Protegus** users will be able to control their alarm system remotely. They will see the status of the system and receive notifications about system events.

1. Download and launch the **Protegus** application or use the browser version: www.protegus.eu/login.

2. Log in with your user name and password or register and create a new account.

Note:	When adding the **G16T_4x1x** to **Protegus** check if:
	1. The inserted SIM card is activated and the PIN code is either entered or disabled;
	2. **Protegus cloud** is enabled. See chapter 6.4 "User reporting" window;
	3. Power supply is connected ("POWER" LED illuminates green);
	4. Registered to the network ("NETWORK" LED illuminates green and flashes yellow);

3. Click **Add new system** and enter the **G16T_4x1x**'s "*IMEI/Unique ID*" number. This number can be found on the device and the packaging sticker. After entering press **Next**.
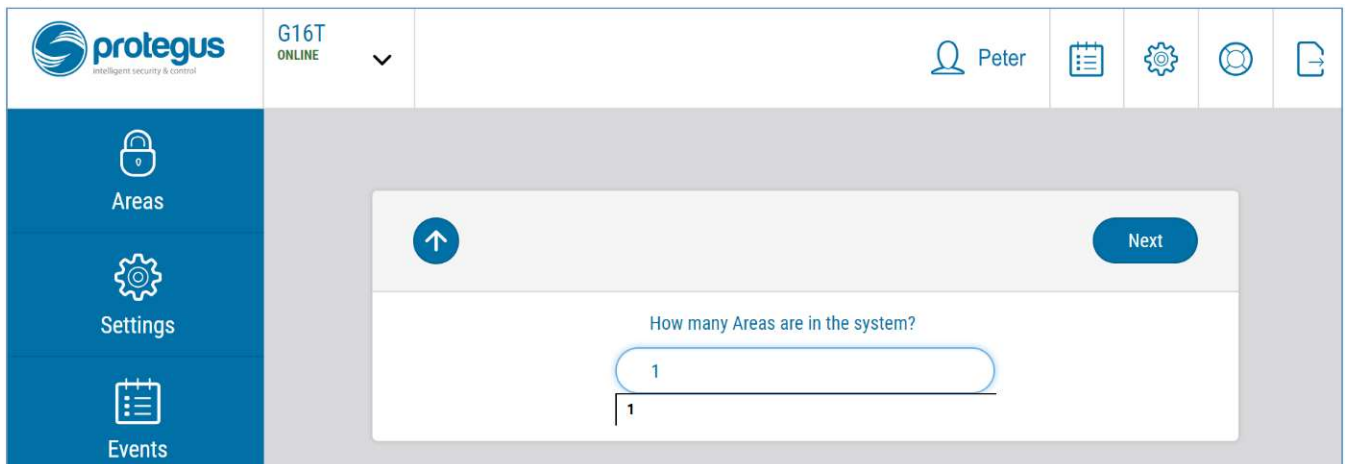

5.2 Additional settings to arm/disarm the alarm system using control panel's keyswitch zone

Important:	The control panel zone to which the **G16T_4x1x** output OUT is connected to has to be set to keyswitch mode.

Follow the instructions below if the security control panel will be controlled with the **G16T_4x1x** output OUT, turning on/off the control panel keyswitch zone.

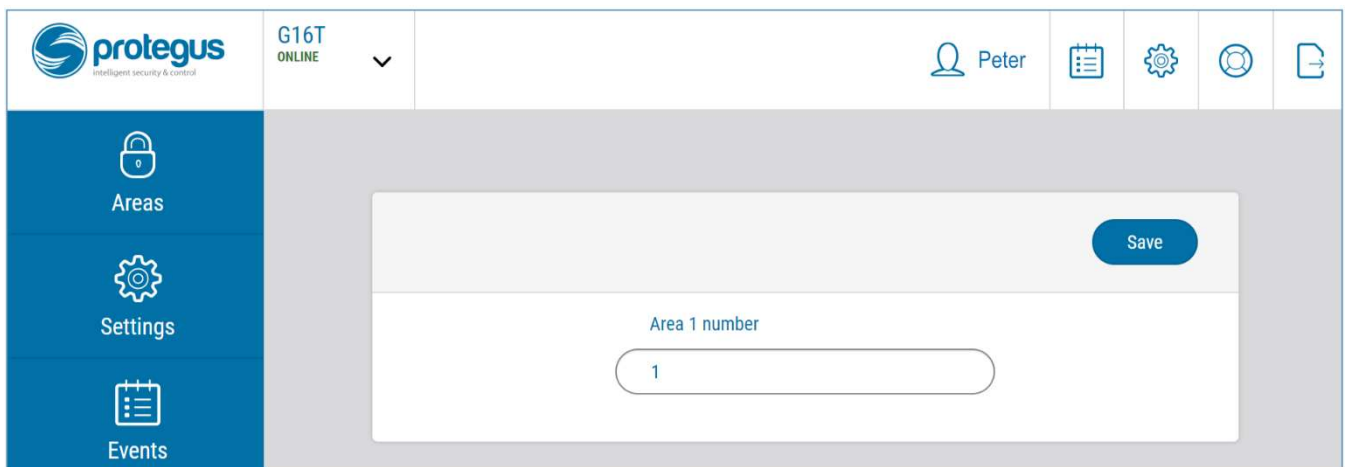1. In the new window, click **Areas** in the side menu. In the next window specify how many alarm system areas are in the system and press **Next**.

2. In the new window, identify what is the number for each of the specified areas in the security system and press **Save**.
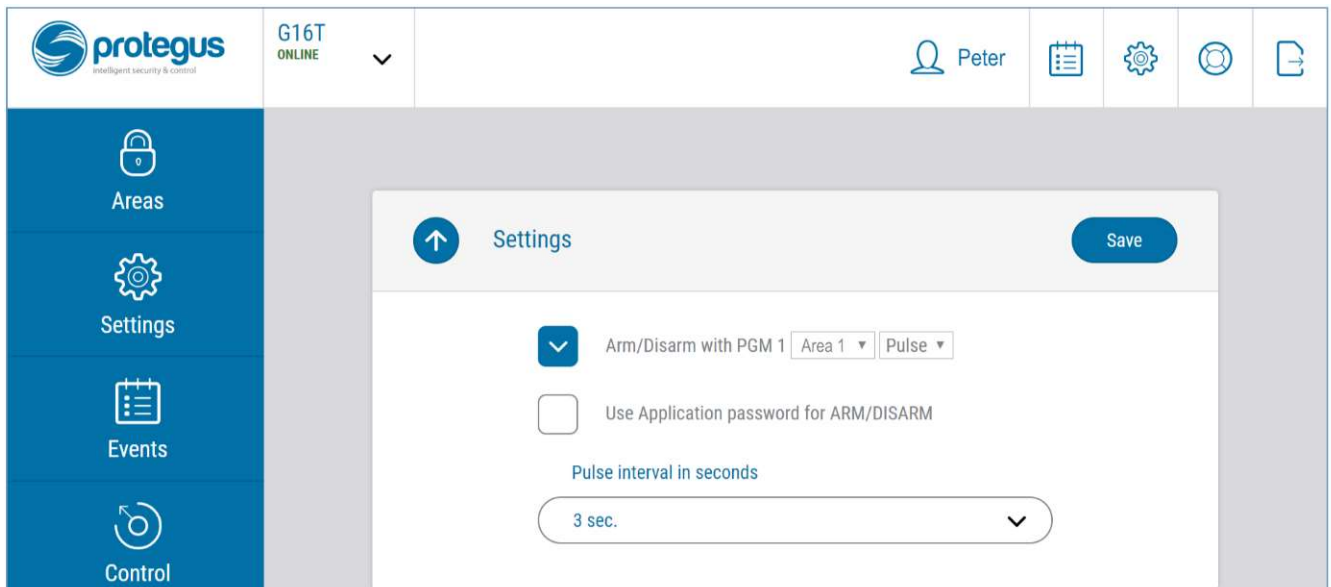

3. In the side menu press **Settings** and in the newly opened window press **Settings**. Select the box **Arm/Disarm with PGM** and specify which area the output will control. One output OUT can control only one area.

4. Select **Level** or **Pulse**, depending on the type of control panel keyswitch zone. You can also change the duration of the pulse interval if it is required for the connected control panel.

5. For additional security, you can select **Use Application password for ARM/DISARM**. Then after pressing the button to arm/disarm the alarm system, a window for entering the app password will open.

5.3 Arming/disarming the alarm system with Protegus

1. To arm/disarm the alarm system, open the *Protegus* window **Areas**.
2. In the **Areas** window press the Area button. In the opened window select the action (to arm or to disarm the alarm system).
3. If asked, enter the user code or *Protegus* password.
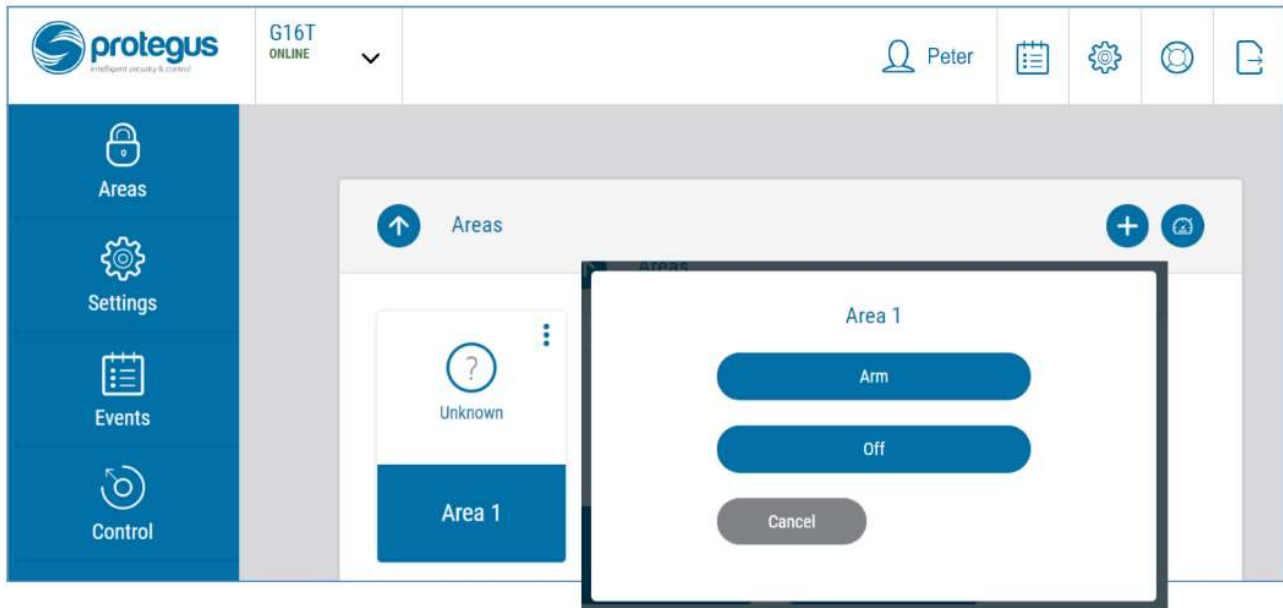
5.4 Configuration and control with SMS messages

You can remotely configure and control the communicator with SMS messages.

Message structure is: Password $_{space}$ Command $_{space}$ Data

For password use the **Administrator code** for *INFO, RESET, OUTPUT1, CONNECT* commands, and **Installer code** for *INFO, RESET, OUTPUT1* commands.

SMS command list

Command	Data	Description
INFO		Request information about the device. Response will be: communicator type, IMEI number, serial number and firmware version. E.g.: ***123456 INFO***
RESET		Restart the device. E.g.: ***123456 RESET***
OUTPUT1	*ON*	Turn on the OUTPUT1. E.g.: ***123456 OUTPUT1 ON***
	OFF	Turn off the OUTPUT1. E.g.: ***123456 OUTPUT1 OFF***
	PULSE=tttt	Turn on the output in impulse mode, for the specified time interval (sec). "tttt" is the time duration of impulse in seconds, described in four digits. E.g.: ***123456 OUTPUT2 PULSE=0002***
CONNECT	*Protegus=ON*	Enable access to Protegus service. E.g.: ***123456 CONNECT PROTEGUS=ON***
	Protegus=OFF	Disable access to Protegus service E.g.: ***123456 CONNECT PROTEGUS=OFF***
	IP=0.0.0.0:8000	Set primary channel IP address and Port number. E.g.: ***123456 CONNECT IP=192.120.120.255:8000***
	ENC=123456	Set TRK encryption key. E.g.: ***123456 CONNECT ENC=123456***
	APN=Internet	Set APN name. E.g.: ***123456 CONNECT APN=INTERNET***
	USER=user	Set APN user. E.g.: ***123456 CONNECT USER=User***

Command	Data	Description
	PASS=password	Set APN password. E.g.: **123456 CONNECT PASS=Password**
	CP=	Disable the landline interface (1 - Disabled; 2 - Enabled). E.g.: **123456 CONNECT CP=2**

You can restrict the phone numbers from which the communicator will accept the commands. See chapter 0 "User reporting" window, "Control by SMS" tab.

6   TrikdisConfig window description
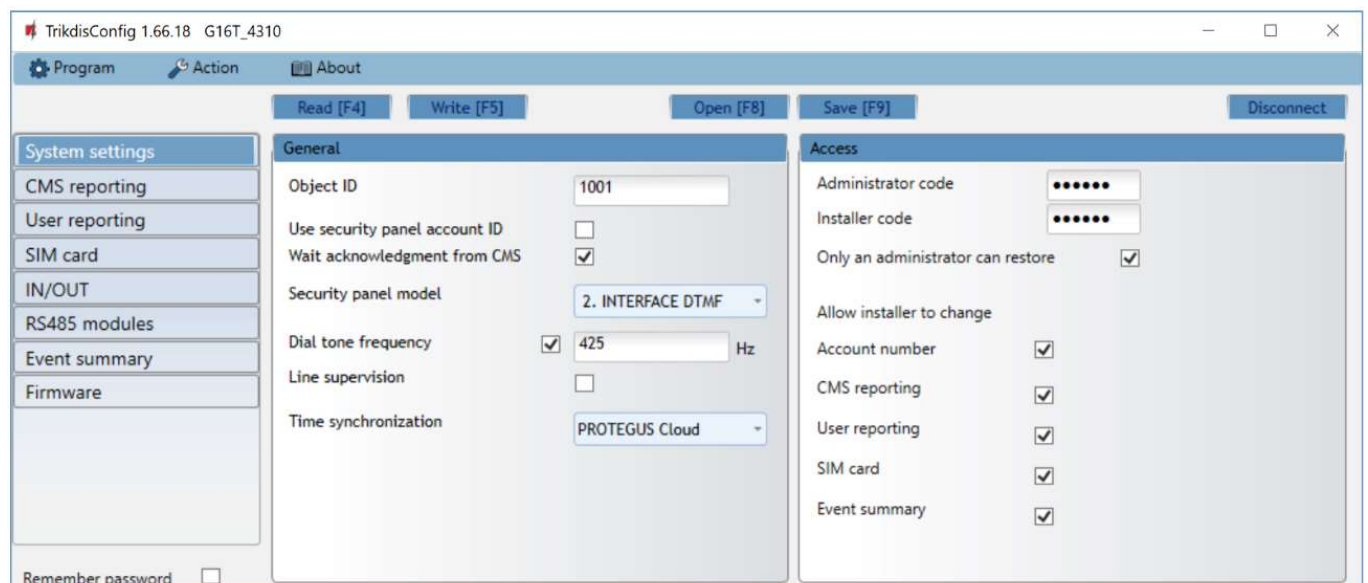
6.1 *TrikdisConfig* status bar description

After connecting the **G16T_4x1x** and clicking **Read [F4],** *TrikdisConfig* will provide information about the connected device in the status bar:

Object	Description
Unique ID	Device IMEI number
Status	Operating condition
Device	Device type (**G16T_4x1x** should be shown)
SN	Device serial number
BL	Browser version
FW	Device firmware version
HW	Device hardware version
Status	Connection to program type (via USB or remote)
Administrator	Access level (shown after access code is approved)

After pressing **Read [F4]**, the program will read and show the settings which are set in the **G16T_4x1x.** Set the necessary settings according to the *TrikdisConfig* window descriptions given below.

6.2   "System settings" window
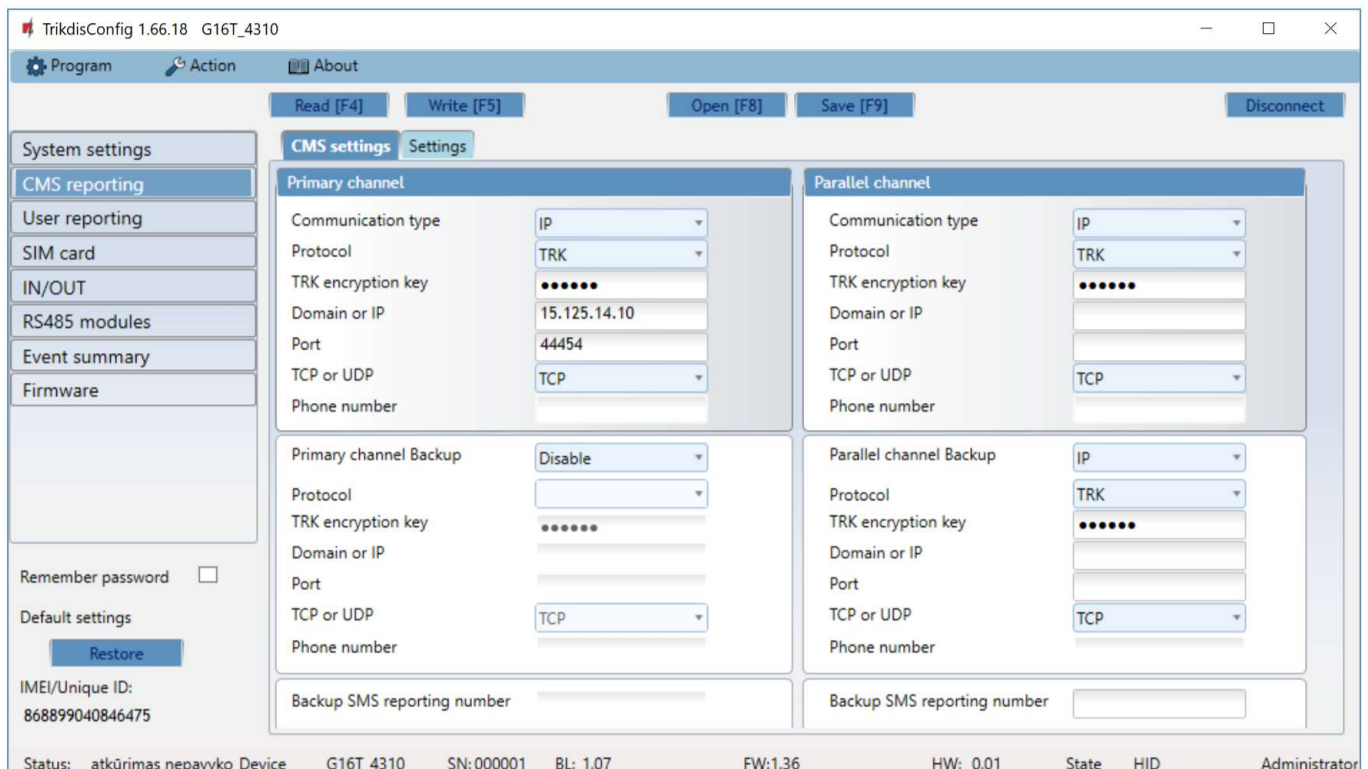
"General" settings group

- **Object ID** – if the events will be sent to the CMS (Central Monitoring Station), enter the account number provided by the CMS (4 characters hexadecimal number, 0-9, A-F. **Do not use FFFE, FFFF Object ID**).

- **Use security panel account ID** – if the checkbox is selected, the communicator will send events with the account ID entered in the panel instead of the value set in the **Object ID** field.

- **Wait acknowledgment from CMS** – if the checkbox is selected, after sending each event the communicator will wait for acknowledgment from the IP receiver indicating that it has successfully received the event message. If the communicator will not receive the acknowledgement signal, it will not form the end-of-communication (kiss-off) signal. After not receiving the kiss-off, the control panel landline dialer will repeatedly transmit the event message.

- **Security panel model** – enable/disable DTMF landline interface on the communicator.

- **Dial tone frequency** – frequency in which the *G16T_4x1x* communicates with the control panel landline dialer.

- **Line supervision** – if this checkbox is selected, landline connection between the communicator and control panel will be monitored. For the supervision to work, the control panel's landline dialer needs to be connected with the *G16T_4x1x* with 4 wires (see chapter 3.2 „Schematics for wiring the communicator to the security control panel").

- **Time synchronization** – select which server to use for time synchronization.

"Access" settings group

- **Administrator code** – allows you to access all configuration fields (default code - 123456).

- **Installer code** – allows to change only those fields that are allowed by the administrator (default code - 654321).

- **Only an administrator can restore** – if this box is selected, factory settings can be restored only by entering the administrator code.

- **Allow installer to change** – the administrator can specify which settings the installer can change.

6.3 "CMS reporting" window

"CMS settings" tab

The communicator sends events to the monitoring station via cellular internet (IP) or with SMS messages.

Events can be sent through several communication channels. The primary and parallel communication channels can operate simultaneously, this way the communicator can send events to two receivers at the same time. Backup channels can be assigned for both primary and parallel channels, which will be used when the connection via the primary or parallel channel is interrupted.

Communication is encoded and password protected. A TRIKDIS receiver is required for receiving and sending event information to the monitoring software:

- For connection over IP – software receiver IPcom Windows/Linux, hardware IP/SMS receiver RL14 or multichannel receiver RM14.
- To receive SMS messages – hardware IP/SMS receiver RL14, multichannel receiver RM14 or SMS receiver GM14.

SMS communication is particularly useful as a backup channel, because it works even when there is no mobile internet connection. We do not recommend SMS as a primary channel.

"Primary channel" settings group

- **Communication type** – select which connection method to monitoring station receiver will be used (IP or SMS).
- **Protocol** – select in which coding the events should be sent: **TRK** (to TRIKDIS receivers), **SIA DC-09** (to receivers, which receive events encoded in SIA DC-09 format), **TL150** (to SUR-GARD receivers).
- **TRK encryption key** – 6-digit message encryption key. The key written to the communicator must match the receiver's key.
- **Domain or IP** – enter the domain or IP address of the receiver.
- **Port** – enter the network port number of the receiver.
- **TCP or UDP** – select in which protocol (TCP or UDP) the events should be sent.
- **Phone number** (only for SMS messages) – enter the telephone number of a TRIKDIS SMS receiver. The telephone number must begin with the country code (e.g., 370xxxxxxxx).

"Primary channel Backup" settings group

Enable the backup channel mode to send events via backup channel if connection via primary channel is lost. Backup channel settings are same as described above.

"Parallel channel" settings group

Through this channel events are transmitted in parallel with the primary channel. When the second channel is enabled, events can be sent simultaneously to two receivers (e.g., local and centralized monitoring stations). Parallel channel settings are the same as described above.

Backup SMS reporting number

Backup SMS messages are sent when events cannot be transmitted via the primary, parallel and backup channels. It is especially useful because it works even when there is no IP connection in the mobile operator network.

This channel is operational only when IP mode is set in primary channel and its backup channel.

SMS notifications will be sent to the Central Monitoring Station SMS receiver: 1) immediately after the first time when communicator starts operating; and 2) if the TCP/IP or UDP/IP connection is interrupted in the first channel and its backup channel.

- **Backup SMS reporting number** - enter the phone number for TRIKDIS SMS receiver. Phone number must begin with the country code (e.g., 370xxxxxxxx).

"Settings" tab
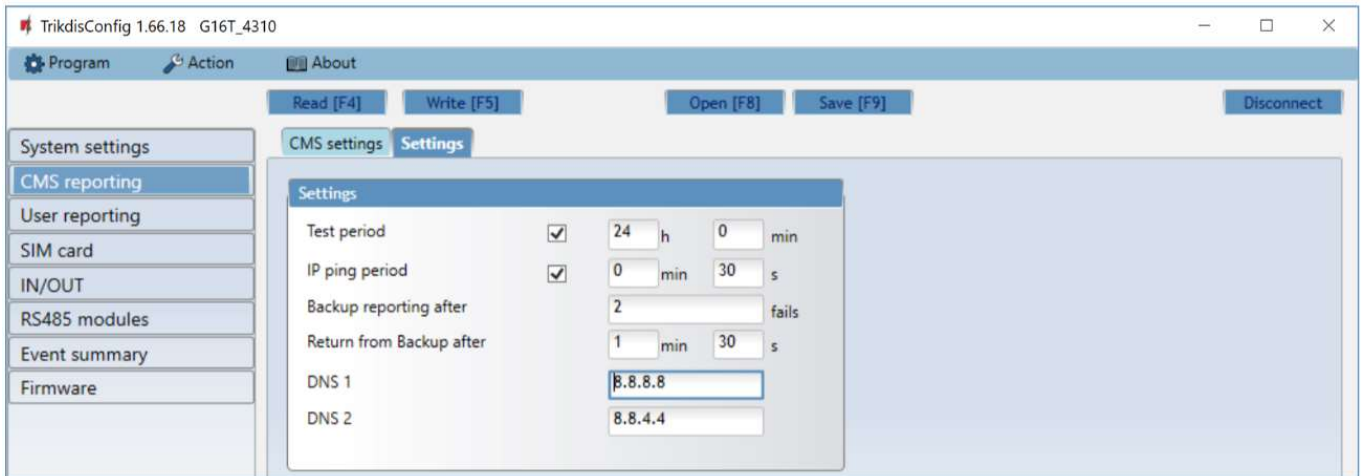
"Settings" settings group

- **Test period** - TEST event period for testing the connection. Test events are sent as Contact ID messages and forwarded to the monitoring software.

- **IP ping period** – period for sending internal PING heartbeats. These messages are only sent via IP channel. The receiver will not forward PING messages to the monitoring software to avoid overloading it. Notifications will only be sent to the monitoring software if the receiver fails to receive PING messages from the device within the set time.

  By default, the receiver will send a "*Connection lost*" notification to the monitoring software if the PING message is not received over a time period three times longer than set in the communicator. E.g. if the PING period is set for 3 minutes, the receiver will send the *"Connection lost"* notification if PING message is not received within 9 minutes.

  PING heartbeats keep the active communication session between the device and the receiver. An active session is required to be able to remotely configure and control the communicator. We recommend setting the PING period for no more than 5 minutes.

- **Backup reporting after** - indicates the number of unsuccessful attempts to send the message via Primary channel. If device fails to transmit specified number of times, it will connect to transmit the messages via Backup channel.

- **Return from backup after** - time after which *G16T_4x1x* will attempt to reconnect and transmit messages via Primary channel.

- **DNS1, DNS2** - (Domain Name System) server that specifies the IP address of the domain. Used when domain is set in the communication channel **Domain or IP** field (not IP address). Google DNS server is set by default.
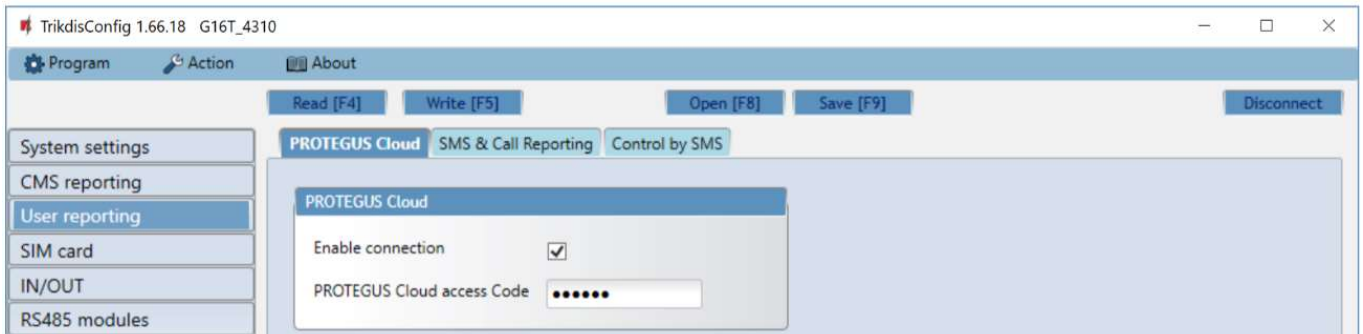
"DC-09 parameters" settings group

The settings are displayed when the **DC-09_2007** or **DC-09_2012** protocol is set in the communication channel **Protocol** field for sending events.

- **DC-09 obj. No.** - enter the object number. The object number entered in this field will be used if DC-09 encoding is selected. Hexadecimal number from 3 to 16 characters can be entered. This number is provided by the Central Monitoring Station.

- **DC-09-line No**. - enter line number of the receiver.

- **DC-09 receiver No.** - enter the receiver number.
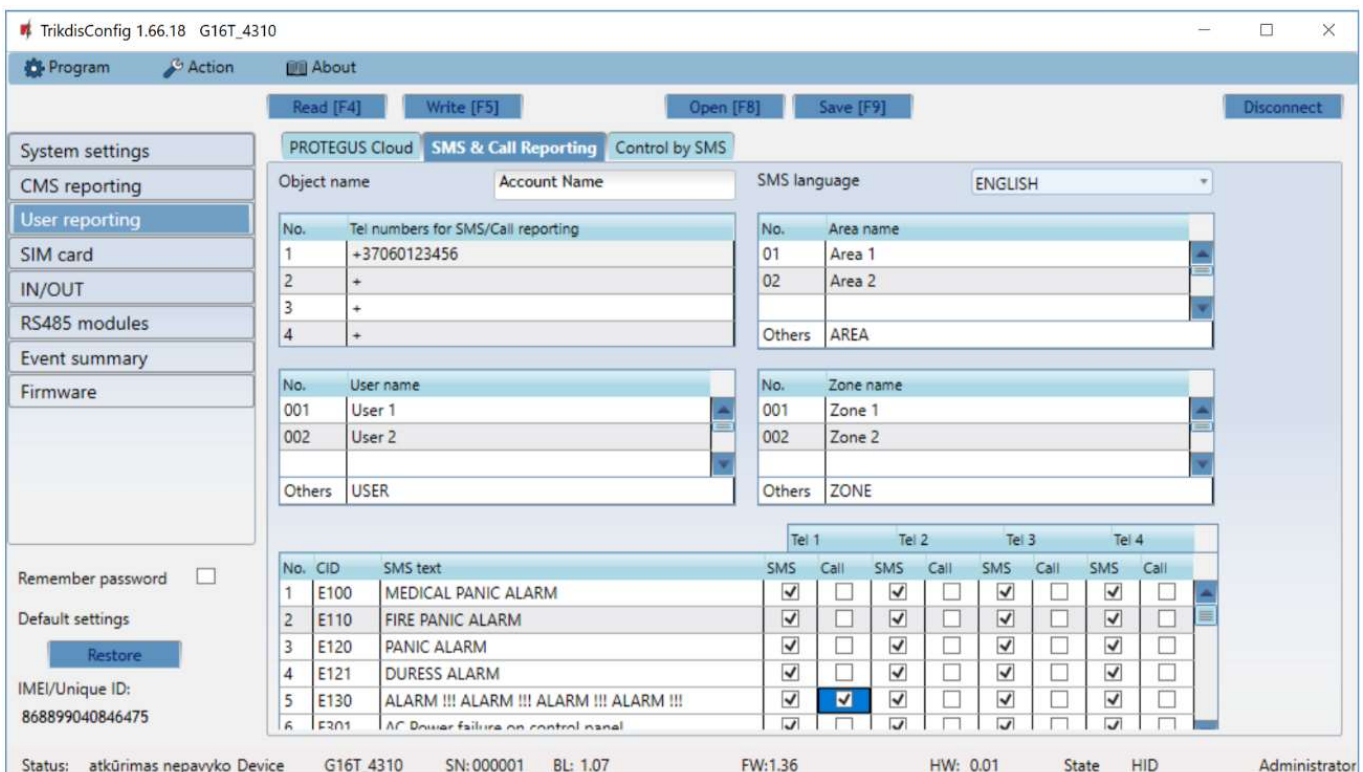
6.4 "User reporting" window

"PROTEGUS cloud" tab

Protegus service allows users to remotely monitor and control the communicator. For more information about *Protegus* service, visit www.protegus.eu.

"Protegus Cloud" settings group

- **Enable connection** - enable *Protegus* service, *G16T_4x1x* will be able to exchange data with *Protegus* app and to be remotely configured via *TrikdisConfig*.
- **Cloud access Code** - 6-digit code for connecting to the *Protegus* app (default - 123456).

"SMS & Call Reporting" tab

Notifications about system events can be transmitted to users' mobile phones via SMS messages or phone calls.

- **Object name** – name the system to which the communicator is connected. Every SMS notification will include the name of the object.
- **SMS language** – choose the language for SMS messages (SMS messages can be sent with language-specific characters).
- **Tel numbers for SMS/Call reporting table** – enter up to 4 user phone numbers that will receive event SMS messages or calls. Phone numbers must begin with the country code, for example +370xxxxxxxx, 00370xxxxxxxx or 370xxxxxxxx.
- **Area name, User name, Zone name tables** – each area, user and zone may have a name that will be used in SMS event messages. Enter the area, user or zone number in the appropriate table and enter the name next to the number.

- **CID event table** – you can change which phone numbers receive SMS messages or phone calls notifying about the events on the list.

You can change the texts for SMS messages of default events, change the contact ID (CID) codes and enter new events with descriptions.

"Control by SMS" tab

You can send SMS commands to the communicator that will control the output or change settings. Find the control commands in chapter 5.4 Configuration and control with SMS messages.

- **Reply text** – SMS text that the user receives after sending an SMS command. SMS text can be edited.
- **Tel numbers for remote control by SMS** – you can enter phone numbers from which the communicator will accept commands.

> **Note:** If no phone number is entered, the device will accept commands from any phone number. In any case, security is guaranteed by the requirement to enter administrator or installer password in the SMS command.

6.5 "SIM card" window
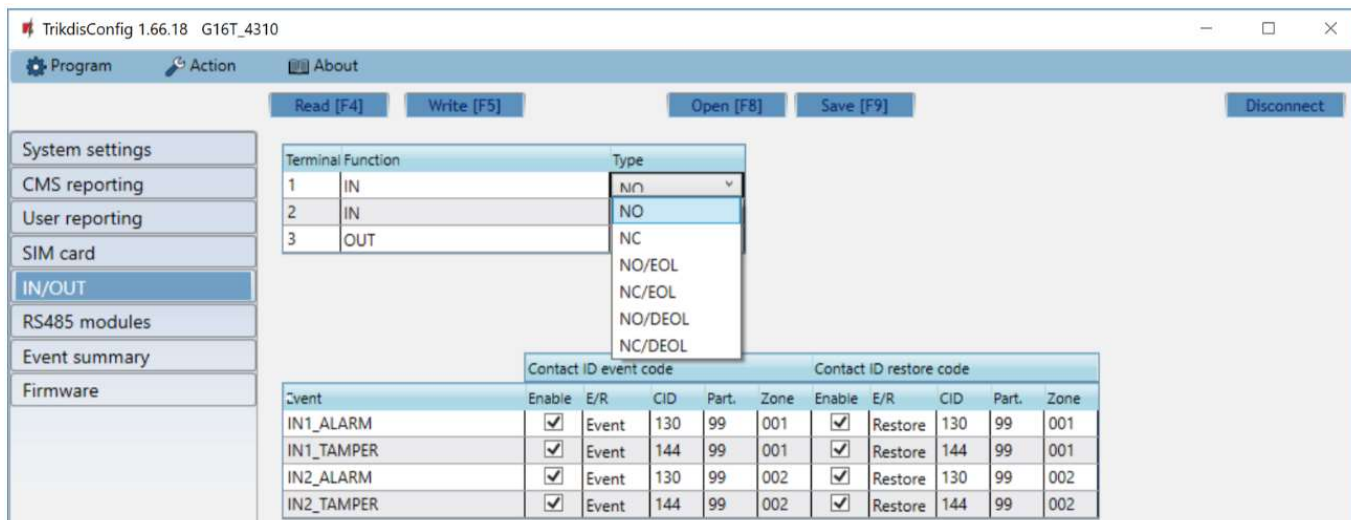
> **Important:** 1. Ensure that the SIM card is activated and working before using it.
> 2. If mobile internet connection will be used for sending events via IP channel to the monitoring station receiver or to **Protegus**, ensure that mobile data service is enabled.

"SIM card" settings group

- **SIM card PIN** - enter the SIM card PIN code. This code can be disabled by inserting the SIM card into a mobile phone and disabling the request. If you disabled the SIM card PIN request, leave the default value in this field.
- **APN** - enter APN (Access Point Name). It is required for connecting the communicator to the internet. APN can be found on the website of SIM card operator ("internet" is universal and works in the networks of many operators).
- **Login, Password** - if required, enter the user name (login) and password for connection to the internet.
- **Forbid connection when roaming detected** - you can use this function when the security system is installed near the country border. This function prevents the communicator from operating in the other country's mobile network.

6.6 „IN/OUT" window

The communicator has 2 universal (input / output) terminals. The table can set the terminal operating mode (Off, IN, OUT). The input must specify the type of circuit to be connected NC, NO, NO / EOL, NC / EOL, NO / DEOL, NC / DEOL.
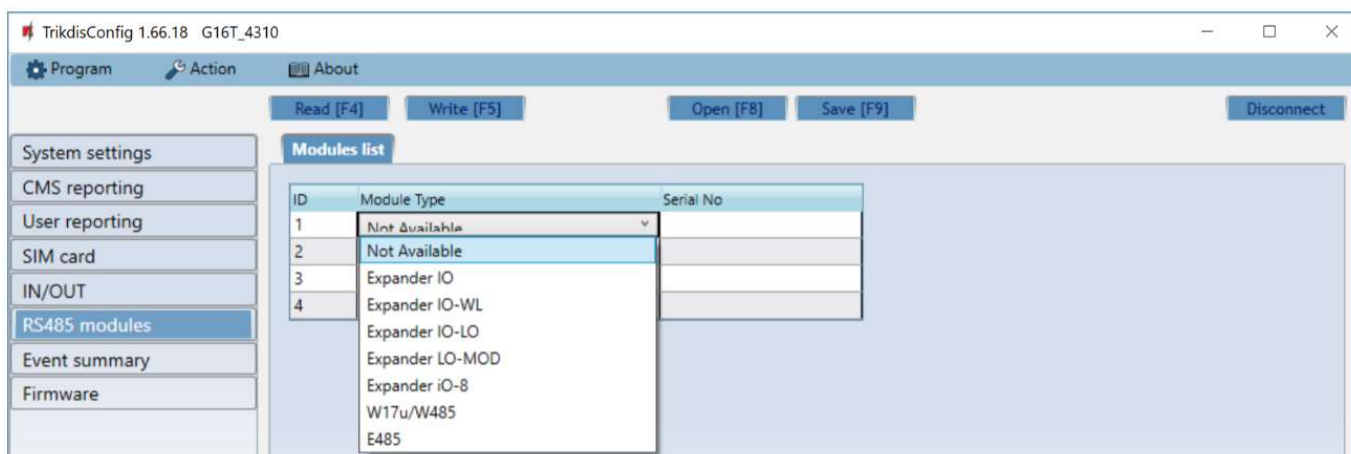
Additional sensors can be connected to the communicator inputs. When the sensor is triggered, the communicator will send an event message. The input is assigned a Contact ID code, which will be sent to CSP and *Protegus*.

- **Enable** – checked event fields where messages will be sent to CMS and *Protegus*.
- **E/R** – choose what type of event will be sent when input is triggered – **Event** or **Restore**.
- **CID** – enter the event code or leave the default value. Upon entering the event, the event code will be sent to *Protegus* and CMS.
- **Part.** – enter the partition (area) number that will be sent when an internal event occurs and the system is restored.
- **Zone** - enter the zone number that will be sent when an internal event occurs and the system is restored.

6.7 "RS485 modules" window

"Modules list" tab

iO series expanders can be connected to the communicator to add additional inputs, outputs and serial buses for temperature sensors. Connected expanders must be added to the **Modules list** table.

- **Module type** – select the module that is connected to the communicator via RS485 from the list.
- **Serial No** – enter the module serial number (6 digits), which is indicated on stickers on the module's case and packaging.

After selecting the connected module and entering its serial number. Go to **RS485 modules → Module.**

"Module" tabs

After adding the expander to the communicator as described above, in the **RS485 modules** window a new tab will appear with this module's settings. The tab will be given a number. Below we describe the settings for *iO-8* and *iO* series expanders, for the WiFi module **W485**, for „Ethernet" module **E485**.

iO-8 expander settings window

Expander *iO-8* has 8 universal (input/output) terminal contacts. Up to four *iO-8* expanders can be connected.

- **Input Count** – select what number of terminal contacts should be set to input (IN) mode. The rest of the terminal contacts will become outputs (OUT).

Outputs are configured directly in *Protegus* app.

In the table inputs can be assigned Contact ID event and restore codes. After an input is triggered, the communicator will send an event with the set event code to the monitoring station receiver and to *Protegus* app.
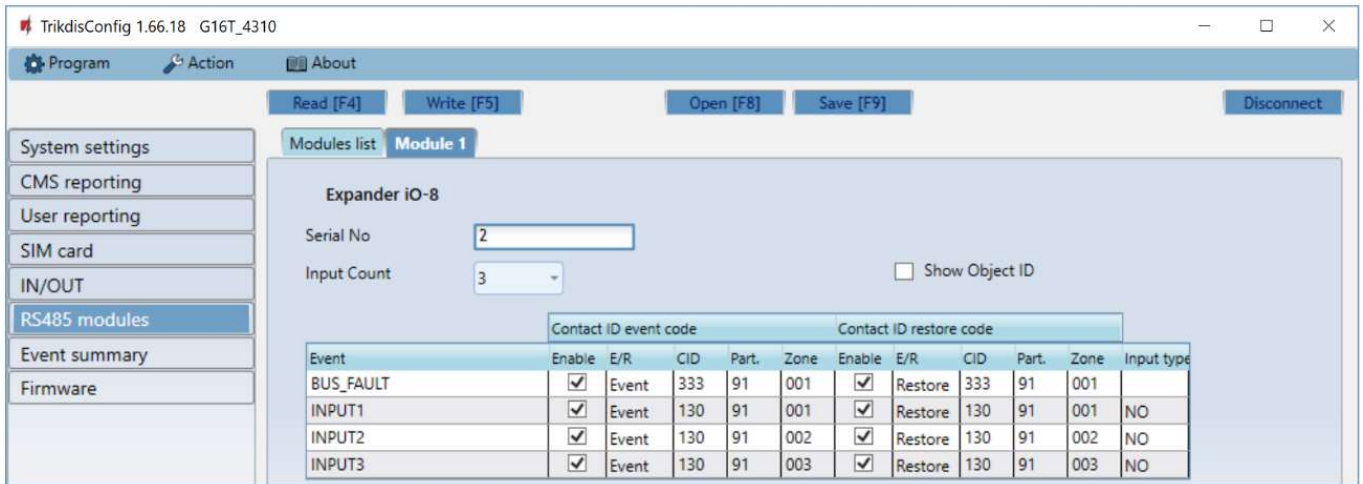
Contact ID event code:
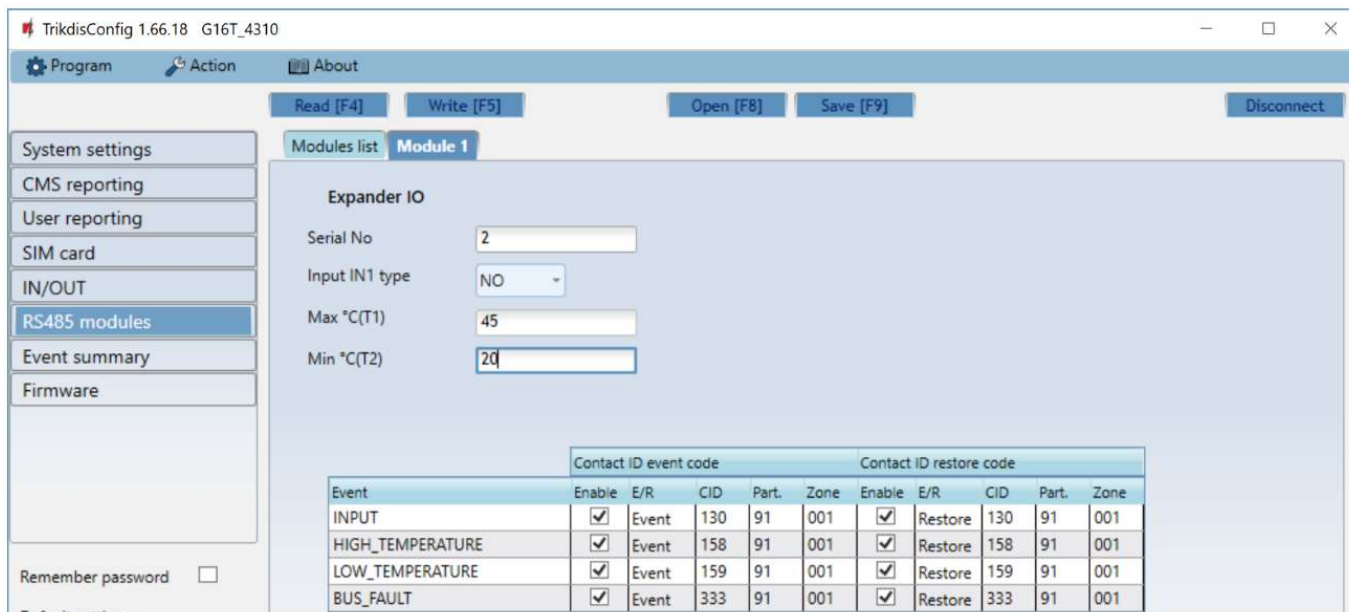
- **Enable** – allow message transmission, when the input is triggered.
- **E/R** – choose what type of event will be sent when input is triggered – **Event** or **Restore**.
- **CID** – assign a Contact ID event code to the input.
- **Part.** – assign a partition (area) to the input. It is set automatically: if the module no. is 1, then the area is 91; if the module no. is 4, then the area is 94.
- **Zone** – set the zone number for the input.

Contact ID restore code:

- **Enable** – allow message transmission when the input is restored.
- **E/R** – choose what type of event will be sent when input is restored – **Restore** or **Event**.
- **CID** – assign a Contact ID restore code to the input.
- **Part.** – assign a partition (area) to the input. It is set automatically: if the module no. is 1, then the area is 91; if the module no. is 4, then the area is 94.
- **Zone** – set the zone number for the input.
- **Input type** – select the type of the input (NO or NC).

For customers to receive SMS messages or calls about input triggers, enter the Contact ID event code that is assigned to input to the table in **"SMS & Call Reporting"** tab.

iO expander settings window

Expander *iO* has: terminals for 1 input, 1 output (relay contacts) and 1-Wire serial bus for connecting temperature sensors.

- **Input IN1 type** – set the input type (NO or NC).
- **Max °C(T1)** – when the temperature is higher than this setting, an event message will be generated. For an event message to be generated, it must be enabled in the table.
- **Min °C(T2)** – when the temperature is lower than this setting, an event message will be generated. For an event message to be generated, it must be enabled in the table.

In the table inputs can be assigned Contact ID event and restore codes. After an input is triggered, the communicator will send an event with the set event code to the monitoring station receiver and to *Protegus* app. Set as described in the previous page about **iO-8 expander settings window**.

WiFi module W485 settings window

- **DHCP mode** – WiFi module's mode for registering to network (manual or automatic).
- **Static IP** – static IP address for when manual registering mode is set.
- **Subnet mask** – subnet mask for when manual registering mode is set.
- **Default gateway** – gateway address for when manual registering mode is set.
- **Wifi SSID name** – name of the WiFi network that the *W485* will connect to.

- **Wifi SSID password** - WiFi network password.

In the table, you can assign Contact ID event and restore codes to the RS485 data bus fault event. When connection between the **W485** and **G16T_4x1x** is disrupted or re-established, the **G16T_4x1x** will send a message with the assigned CID code to the CMS and **Protegus** app.

Note:	You must configure the **G16T_4x1x** to send messages to CMS and **Protegus**, see chapters 2.2 "Settings for connection with Central Monitoring Station" and 2.1 "Settings for connection with Protegus app".
	Insert SIM card into the communicator G16T_4x1x for W485 to work.

"Ethernet" module E485 settings window
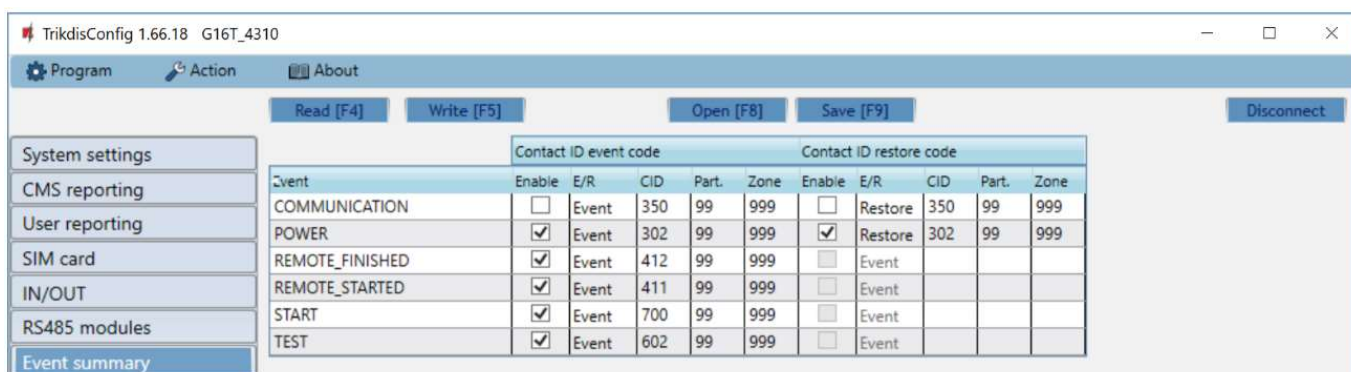
- **DHCP mode** – ethernet module's mode for registering to network (manual or automatic).
- **Static IP** – static IP address for when manual registering mode is set.
- **Subnet mask** – subnet mask for when manual registering mode is set.
- **Default gateway** – gateway address for when manual registering mode is set.

In the table, you can assign Contact ID event and restore codes to the RS485 data bus fault event. When connection between the **E485** and **G16T_4x1x** is disrupted or re-established, the **G16T_4x1x** will send a message with the assigned CID code to the CMS and **Protegus** app.

Note:	You must configure the **G16T_4x1x** to send messages to CMS and **Protegus**, see chapters 2.2 "Settings for connection with Central Monitoring Station" and 2.1 "Settings for connection with Protegus app".
	Insert SIM card into the communicator G16T_4x1x for W485 to work.

6.8 "Event summary" window

In this window, you can turn on, turn off or change the internal event messages sent by the device. After turning off an internal event in this window, it will not be sent irrespective of other settings.

- **COMMUNICATION** – message about connection error between the control panel and *G16T_4x1x*, when line supervision is turned on.
- **POWER** – message about low power supply voltage.
- **REMOTE_FINISHED** – message about disconnection from remote configuration with *TrikdisConfig*.
- **REMOTE_STARTED** – message about remote connection to configure *G16T_4x1x* with *TrikdisConfig*.
- **START** – message about *G16T_4x1x* connecting to the network.
- **TEST** – periodic test message.

> **Note:** To enable periodic TEST messages and set their period, go to **CMS reporting -> Settings -> Test period**.

- **Enable** – when selected, the sending of messages is enabled.

You can change the Contact ID code for each event, and also the zone and partition number.

6.9 Restoring factory settings

To restore the communicator's factory settings, you need to click the **Restore** button in the *TrikdisConfig* window.

Status: atkūrimas nepavyko Device   G16T_4310   SN: 000001   BL: 1.07   FW:1.36   HW: 0.01   State   HID   Administrator

7 Remote configuration

1. Start the configuration program *TrikdisConfig*.

> **Note:** Remote configuration will work only if:
> 1. The inserted SIM card is activated and the PIN code is either entered or disabled;
> 2. *Protegus cloud* is enabled. How to enable cloud is described in chapter 6.4 ""User reporting" window";
> 3. Power supply is connected ("POWER" LED illuminates green);
> 4. Registered to the network ("NETWORK" LED illuminates green and flashes yellow).

2. In the **Remote access** field, enter the communicator's **IMEI/Unique ID** number. This number can be found on the device and the packaging sticker.
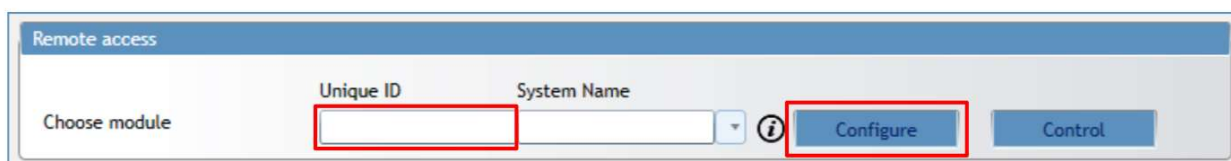
3. (Optional) In the **System name** field, enter the desired name for the *G16T_4x1x* with this Unique ID.
4. Press **Configure**.
5. In the newly opened window click **Read [F4]**. If required, enter the administrator or installer code.
6. Set the necessary settings and when finished, click **Write [F5].**

8 Test communicator performance

When configuration and installation is complete, perform a system check:
1. Generate an event:
   - by arming/disarming the system with the control panel keypad;
   - triggering a zone alarm when the security system is armed.

2. Make sure that the event arrives to the Central Monitoring Station and/or is received in the *Protegus* application.

3. To test communicator inputs, trigger them and make sure you receive the correct event.

4. To test the communicator outputs, activate them remotely and check their operation.

5. If the security control panel will be controlled remotely, arm/disarm the security system remotely by using the *Protegus* app.

9 Manual firmware update

Note:	When the communicator is connected to *TrikdisConfig*, the program will automatically offer to update the device's firmware if updates are present. Updates require an internet connection. Antivirus software, firewall or strict access to internet settings can block the automatic firmware updates.

G16T_4x1x firmware can also be updated or changed manually. After an update, all previously set settings will remain unchanged. When writing firmware manually, it can be changed to a newer or older version. To update:

1. Run *TrikdisConfig*.

2. Connect the *G16T_4x1x* via USB Mini-B cable to the computer or connect to the *G16T_4x1x* communicator remotely.

   - If a newer firmware version exists, the software will offer to download the newer firmware version file.

3. Select the menu branch **Firmware**.

4. Press **Open firmware** and select the required firmware file. If you do not have the file, the newest firmware file can be downloaded by registered users from www.trikdis.com , under the download section of the *G16T_4x1x* communicator.

5. Press **Update [F12].**
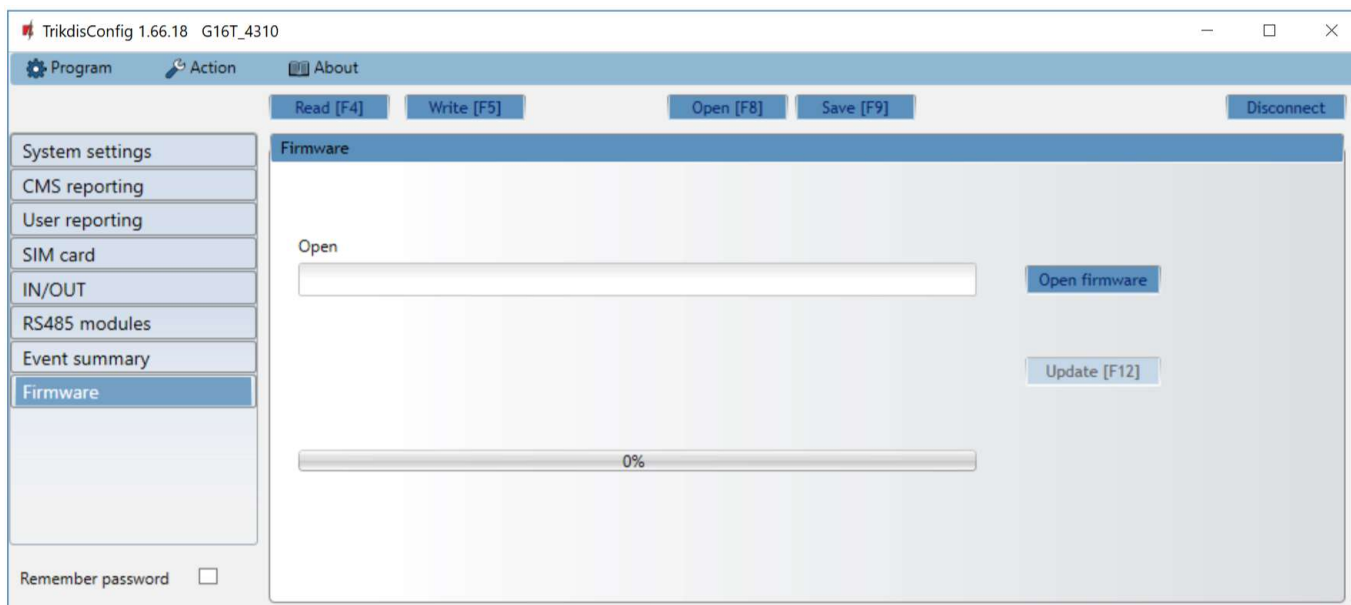
6. Wait for the update to complete.

10 Annex

The communicator can work with a SUR-GARD receiver. The communicator converts Contact ID codes received from the alarm control panel into SIA codes.

Contact ID to SIA code conversion table

System Event	CID Report Code	SIA Report Code
Medical alarm	E100	"MA"
Personal emergency	E101	"QA"
Fire in zone: <z>	E110	"FA"
Water flow detected in zone: <z>	E113	"SA"
Pull station alarm in zone: <z>	E115	"FA"
Panic in zone: <z>	E120	"PA"
Panic alarm by user: <v>	E121	"HA"
Panic alarm in zone: <z>	E122	"PA"
Panic alarm in zone: <z>	E123	"PA"
Panic alarm in zone: <z>	E124	"HA"
Panic alarm in zone: <z>	E125	"HA"
Alarm active in zone: <z>	E130	"BA"
Alarm active in zone: <z>	E131	"BA"
Alarm active in zone: <z>	E132	"BA"
Alarm active in zone: <z>	E133	"BA"
Alarm active in zone: <z>	E134	"BA"
Alarm active in zone: <z>	E135	"BA"
Tamper active in zone: <z>	E137	"TA"
Intrusion verified in zone: <z>	E139	"BV"
Alarm active in zone: <z>	E140	"UA"
System failure (143)	E143	"ET"
Tamper active in zone: <z>	E144	"TA"
Tamper active in zone: <z>	E145	"TA"
Alarm active in zone: <z>	E146	"BA"
Alarm active in zone: <z>	E150	"UA"
Gas detected in zone: <z>	E151	"GA"
Water leakage detected in zone: <z>	E154	"WA"
Foil break detected in zone: <z>	E155	"BA"
High temperature at sensor: <n>	E158	"KA"
Low temperature at sensor: <n>	E159	"ZA"
CO detected in zone: <z>	E162	"GA"
Fire failure in zone: <z>	E200	"FS"
Monitored alarm	E220	"BA"
System failure (300)	E300	"YP"
AC power supply loss	E301	"AT"
Low battery	E302	"YT"
System failure (304)	E304	"YF"

System Event	CID Report Code	SIA Report Code
System reset in zone: <z>	E305	"RR"
Panel programming changed	E306	"YG"
System shutdown	E308	"RR"
Battery failure (309)	E309	"YT"
Ground fault	E310	"US"
Battery failure (311)	E311	"YM"
Power supply overcurrent (312)	E312	"YP"
Engineer reset by user: <v> (313)	E313	"RR"
Sounder/Relay failure	E320	"RC"
System failure (321)	E321	"YA"
System failure (330)	E330	"ET"
System failure (332)	E332	"ET"
System failure (333)	E333	"ET"
System failure (336)	E336	"VT"
System failure (338)	E338	"ET"
System failure (341)	E341	"ET"
System failure (342)	E342	"ET"
System failure (343)	E343	"ET"
System failure (344)	E344	"XQ"
System communication failure (350)	E350	"YC"
System communication failure (351)	E351	"LT"
System communication failure (352)	E352	"LT"
System failure (353)	E353	"YC"
System communication failure (354)	E354	"YC"
System failure (355)	E355	"UT"
Fire trouble in zone: <z>	E373	"FT"
Trouble in zone: <z>	E374	"EE"
Trouble in zone: <z>	E378	"BG"
Trouble in zone: <z>	E380	"UT"
Wireless zone fault: <z>	E381	"US"
Wireless module failure (382)	E382	"UY"
Tamper active in zone: <z>	E383	"TA"
Low battery in wireless zone: <z>	E384	"XT"
Trouble in zone: <z> (389)	E389	"ET"
Trouble in zone: <z> (391)	E391	"NA"
Trouble in zone: <z> (393)	E393	"NC"
User <v> disarmed the system	E400	"OP"
User <v> disarmed the system	E401	"OP"
Automatic disarm	E403	"OA"
Deferred disarm <v> user	E405	"OR"
Alarm cancelled by user: <v>	E406	"BC"

System Event	CID Report Code	SIA Report Code
User <v> disarmed remotely	E407	"OP"
Quick disarm	E408	"OP"
Remote disarm	E409	"OS"
Call back request made by CMS	E411	"RB"
Successful data download	E412	"RS"
Entry access denied for user <v>	E421	"JA"
Entry by user <v>	E422	"DG"
Forced Access <z> zone	E423	"DF"
Exit access denied for user <v>	E424	"DD"
Exit by user <v>	E425	"DR"
User <v> disarmed too early	E451	"OK"
User <v> armed too late	E452	"OJ"
User <v> Failed to Disarm	E453	"CT"
User <v> Failed to Arm	E454	"CI"
Auto arm failed	E455	"CI"
Partial arm by user: <v>	E456	"CG"
Exit violation by user: <v>	E457	"EE"
System disarmed after alarm by user: <v>	E458	"OR"
Recent arm <v> user	E459	"CR"
Wrong code entered	E461	"JA"
Auto-arm time extended by user: <v>	E464	"CE"
Device disabled (501)	E501	"RL"
Device disabled (520)	E520	"RO"
Wireless sensor disabled in zone:<z> (552)	E552	"YS"
Zone <z> bypassed	E570	"UB"
Zone <z> bypassed	E571	"FB"
Zone <z> bypassed	E572	"MB"
Zone <z> bypassed	E573	"BB"
Group bypass by user: <v>	E574	"CG"
Zone <z> bypassed	E576	"UB"
Zone <z> bypass cancelled	E577	"UB"
Vent zone bypass	E579	"UB"
Walk test activated by user:<v>	E607	"TS"
Manual test report	E601	"RX"
Periodic test report	E602	"RP"
System event (605)	E605	"JL"
System event (606)	E606	"LF"
Periodic test report with trouble	E608	"RY"
System event (622)	E622	"JL"
System event (623)	E623	"JL"
Time/Date was reset by user <v>	E625	"JT"

System Event	CID Report Code	SIA Report Code
Inaccurate Time/Date	E626	"JT"
System programming started	E627	"LB"
System programming finished	E628	"LS"
System event (631)	E631	"JS"
System event (632)	E632	"JS"
System not active (654)	E654	"CD"
Medical alarm restored	R100	"MH"
Personal emergency restored	R101	"QH"
No more fire alarm in zone :<z>	R110	"FH"
No more water flow alarm in zone:<z>	R113	"SH"
Panic alarm restored in zone:<z>	R120	"PH"
Panic alarm cancelled by user: <v>	R121	"HH"
Panic alarm restored in zone:<z>	R122	"PH"
Panic alarm restored in zone: <z>	R123	"PH"
Panic alarm restored in zone: <z>	R124	"HH"
Panic alarm restored in zone: <z>	R125	"HH"
No more alarm in zone: <z>	R130	"BH"
No more alarm in zone: <z>	R131	"BH"
No more alarm in zone: <z>	R132	"BH"
No more alarm in zone: <z>	R133	"BH"
No more alarm in zone: <z>	R134	"BH"
No more alarm in zone: <z>	R135	"BH"
No more tamper in zone: <z>	R137	"TA"
No more alarm in zone:<z>	R140	"UH"
No more system failure (143)	R143	"UR"
No more tamper in zone: <z>	R144	"TR"
No more tamper in zone: <z>	R145	"TR"
No more alarm in zone: <z>	R146	"BH"
No more alarm in zone: <z>	R150	"UH"
No more gas alarm in zone:<z>	R151	"GH"
No more water leakage alarm in zone: <z>	R154	"WH"
Foil break restored in zone: <z>	R155	"BH"
Temperature has normalized at sensor: <n>	R158	"KH"
Temperature has normalized at sensor: <n>	R159	"ZH"
No more CO alarm in zone: <z>	R162	"GH"
No more fire failure in zone: <z>	R200	"FV"
Monitored restore alarm	R220	"BH"
No more system failure (300)	R300	"YA"
AC power supply OK	R301	"AR"
Battery OK	R302	"YR"
No more system failure (304)	R304	"YG"

System Event	CID Report Code	SIA Report Code
System reset restored in zone: <z>	R305	"RR"
No more battery failure (309)	R309	"YR"
Restore ground fault	R310	"UR"
No more battery failure (311)	R311	"YR"
Restore power supply overcurrent (312)	R312	"YQ"
No more sounder/Relay failure	R320	"RO"
No more system failure (321)	R321	"YH"
No more system failure (330)	R330	"ER"
No more system failure (332)	R332	"ER"
No more system failure (333)	R333	"ER"
No more system failure (336)	R336	"VR"
No more system failure (338)	R338	"ER"
No more system failure (341)	R341	"ER"
No more system failure (342)	R342	"ER"
No more system failure (344)	R344	"XH"
No more system communication failure (350)	R350	"YK"
No more system communication failure (351)	R351	"LR"
No more system communication failure (352)	R352	"LR"
No more system failure (353)	R353	"YK"
No more system communication failure (354)	R354	"YK"
No more system failure (355)	R355	"UJ"
Fire trouble restored in zone: <z>	R373	"FJ"
No more trouble in zone: <z>	R374	"EA"
No more trouble in zone: <z>	R380	"UJ"
No more wireless zone fault: <z>	R381	"UR"
No more wireless module failure (382)	R382	"BR"
No more tamper in zone: <z>	R383	"TR"
Battery OK in wireless zone: <z>	R384	"XR"
No more trouble in zone: <z> (391)	R391	"NS"
No more trouble in zone: <z> (393)	R393	"NS"
User <v> armed the system	R400	"CL"
User <v> armed the system	R401	"CL"
Automatic arm	R403	"CA"
User <v> armed remotely	R407	"CL"
Quick arm	R408	"CL"
Remote arm	R409	"CS"
User <v> armed to Stay mode	R441	"CG"
User <v> armed too early	R451	"CK"
User <v> disarmed too late	R452	"CJ"
User <v> Failed to Disarm	R454	"CI"
Partial Arm by user: <v>	R456	"CG"

System Event	CID Report Code	SIA Report Code
Recent disarm <v> user	R459	"CR"
Device enabled (501)	R501	"RG"
Device enabled (520)	R520	"RC"
Wireless sensor enabled in zone: <z> (552)	R552	"YK"
Zone <z> bypass cancelled	R570	"UU"
Zone <z> bypass cancelled	R571	"FU"
Zone <z> bypass cancelled	R572	"MU"
Zone <z> bypass cancelled	R573	"BU"
Group bypass by user: <v> cancelled	R574	"CF"
Zone <z> bypass cancelled	R576	"UU"
Zone <z> bypass cancelled	R577	"UU"
Vent zone bypass cancelled	R579	"UU"
Walk test deactivated by user <v>	R607	"TE"
Time/Date was reset by user <v>	R625	"JT"
System active (654)	R654	"CD"