COMMUNICATORS

Cellular communicator G16T

1. Description

Communicator can transmit event notifications to the Central Monitoring Station and work with Protegus simultaneously.

Cellular communicators G16T are certified to the highest EN50131 Grade 4 security rating.

1.1 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.

- 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 inputs, selectable type: NC; NO; NC/EOL; NO/EOL; NC/DEOL; NO/DEOL.
    - 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.

1.2 Communicator model types

This manual applies to these G16T models:

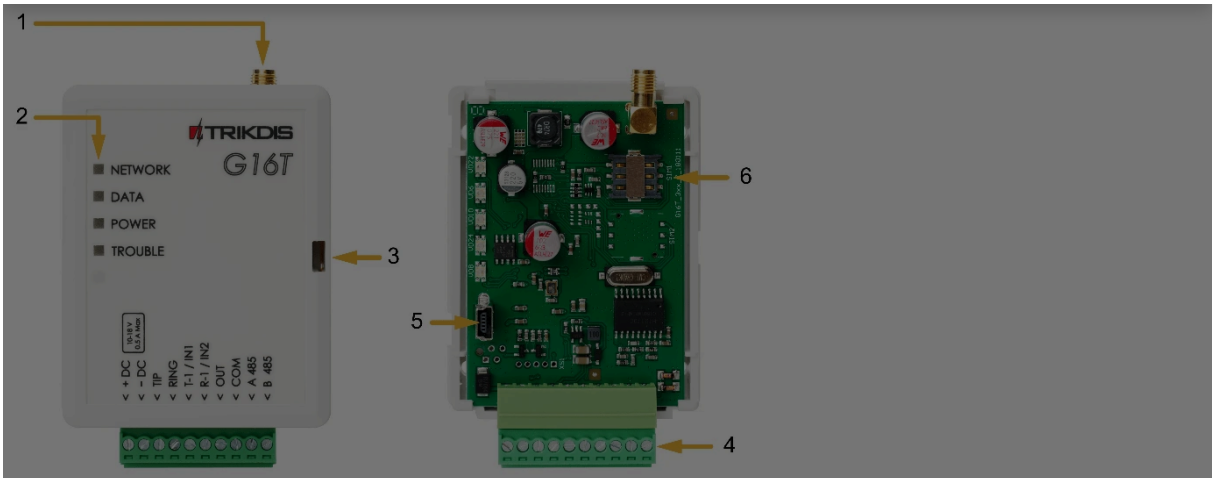
- G16T_321x – version 3, 2G modem, 1 SIM.
- G16T_331x – version 3, 3G modem, 1 SIM.
- G16T_341x – version 3, 4G modem, 1 SIM.
- G16_3M10 – 3 version, 1 SIM, LTE CatM1 & EGPRS modem.

1.3 Specifications

Parameter	Description
Connects to panel	Landline dialer (TIP RING contacts)
Inputs	2 selectable type inputs, NC;NO; NC/EOL; NO/EOL; NC/DEOL; NO/DEOL / 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 62 x 26 mm
Weight	80 g

1.4 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



1.5 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
T-1 / IN1	Terminal for monitoring the telephone line or an input terminal, selectable type: NC; NO; NC/EOL; NO/EOL; NC/DEOL; NO/DEOL
R-1 / IN2	Terminal for monitoring the telephone line or an input terminal, selectable type: NC; NO; NC/EOL; NO/EOL; NC/DEOL; NO/DEOL
OUT	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

1.6 LED indication of operation

1.6.2 DATA

Light status	Description
Off	No unsent events.
Green solid	Unsent events are stored in the buffer.
Green blinking	*(Configuration mode)* Data is being transferred to/from the communicator.

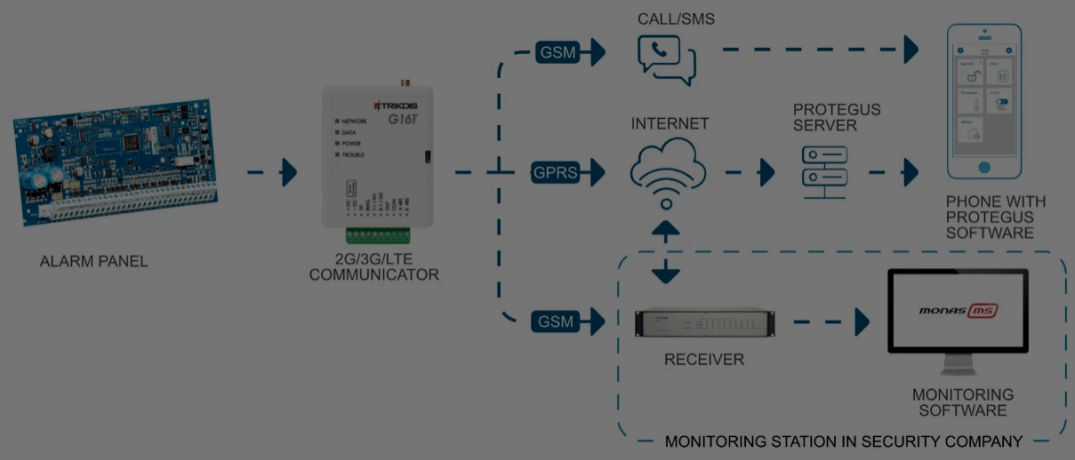
1.6.3 POWER

Light status	Description
Off	Power supply is off or disconnected.
Green solid	Power supply is on with sufficient voltage.
Yellow solid	Power supply voltage is not sufficient (≤11.5 V).
Green solid and yellow blinking	*(Configuration mode)* Communicator is ready for configuration.
Yellow solid (configuration mode)	*(Configuration mode)* No connection with the computer.

1.6.4 TROUBLE

Light status	Description
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 cellular 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 the control panel.
Red blinking	*(Configuration mode)* Memory fault.
Red solid	*(Configuration mode)* Firmware is corrupted.

1.7 Structural schematic with G16T usage



NOTE

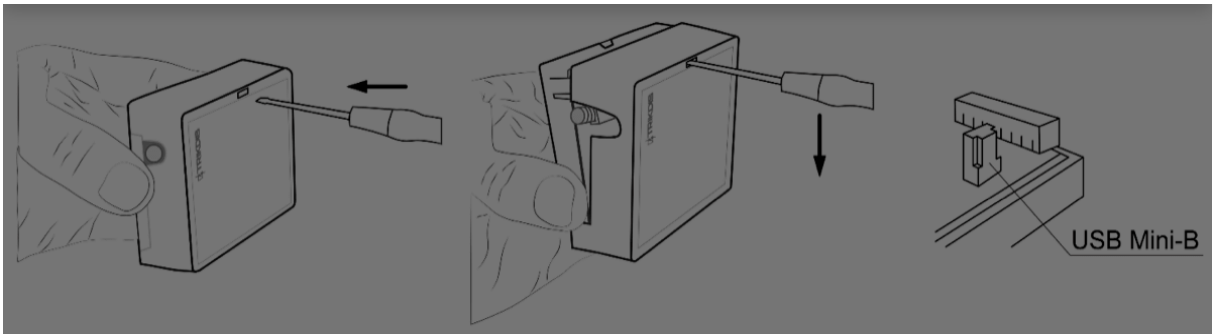
Before you begin, make sure that you have the necessary:

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.

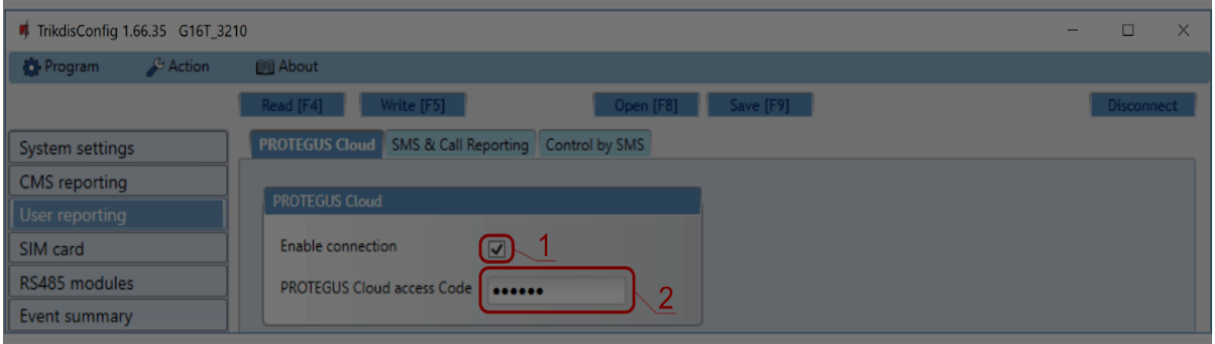


1. Using a USB Mini-B cable connect the G16T to the computer.
2. Run TrikdisConfig. The software will automatically recognize the connected communicator and will open a window for configuration.
3. Click **Read [F4]** to read the communicator's settings. If requested, enter the Administrator or Installer 6-digit code in the pop-up window.

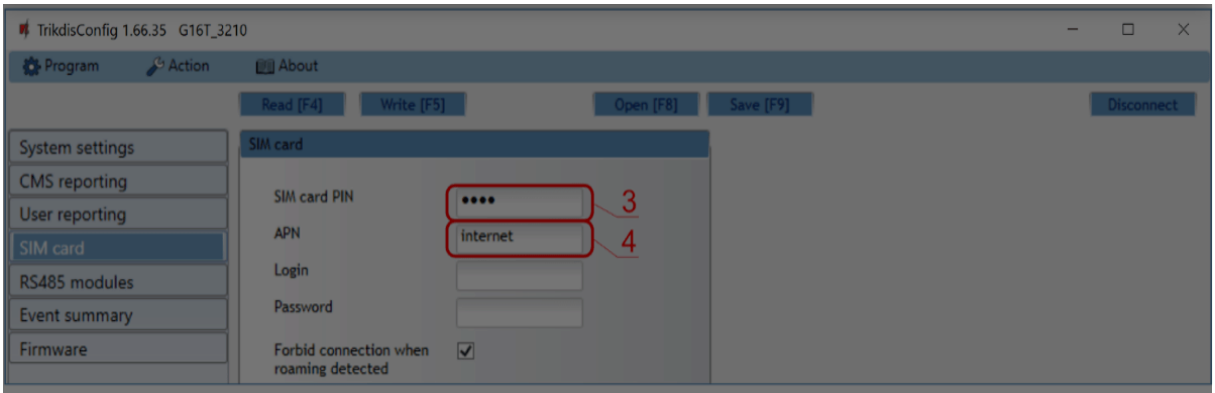
Below we describe what settings need to be set for the communicator to begin sending events to the Central Monitoring Station and to allow the security control to be controlled with the Protegus app.

2.1 Settings for connection with Protegus app

In "User reporting window" "PROTEGUS Cloud" tab:



1. Select checkbox **Enable connection** to the Protegus Cloud.



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.

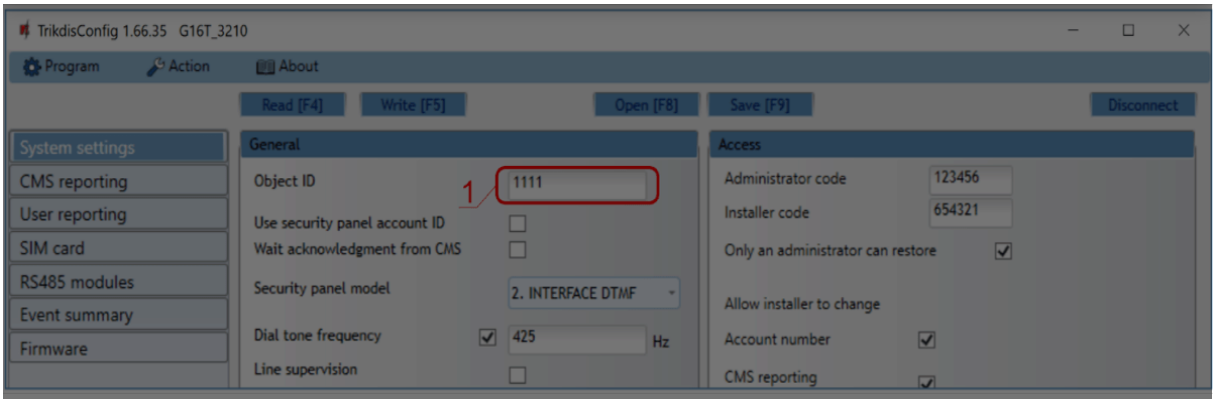
NOTE

For more information about other G16T settings in TrikdisConfig, see chapter **6 TrikdisConfig window description**.

IMPORTANT

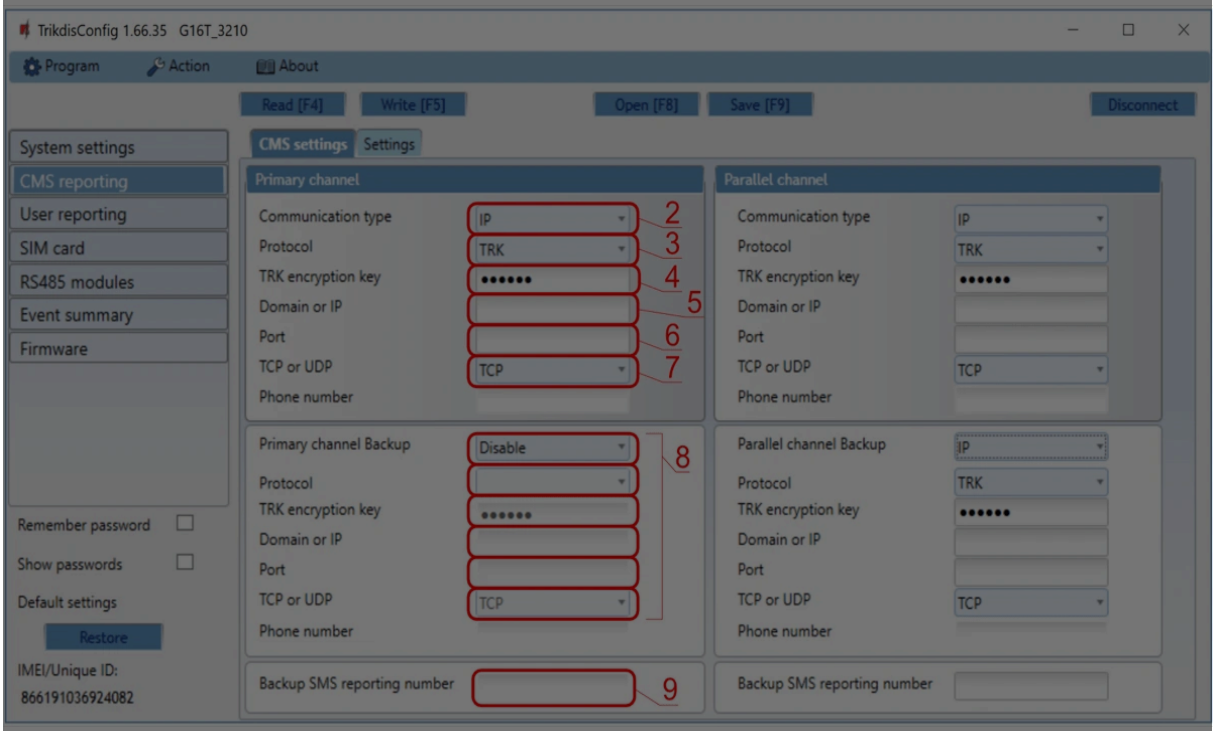
Do not forget to turn on the landline dialer of the alarm panel and set it up correctly, so that the panel would send the events. Alarm panel setup is described in chapter **4 Programming the control panel**.

2.2 Settings for connection with Central Monitoring Station



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":



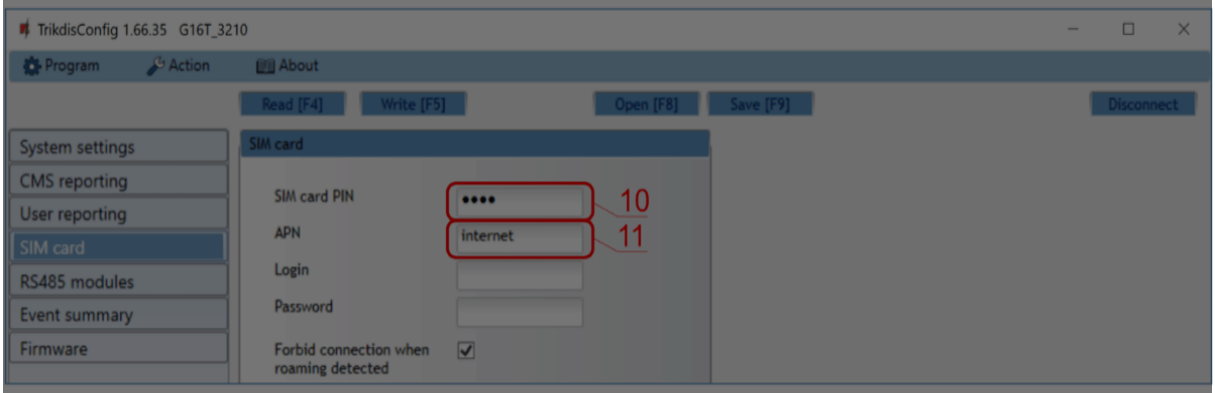
2. **Communication type** - select the **IP** connection method (we do not recommend SMS as

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.

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

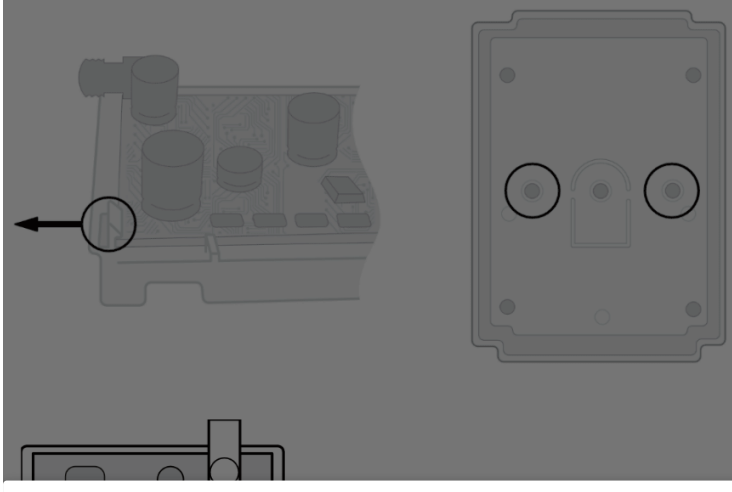
IMPORTANT

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.

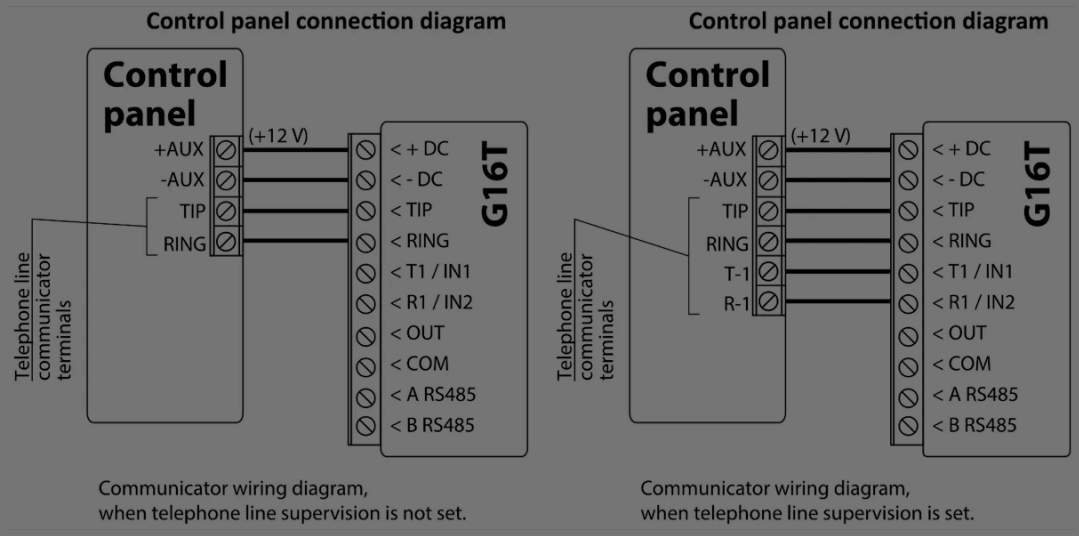


NOTE

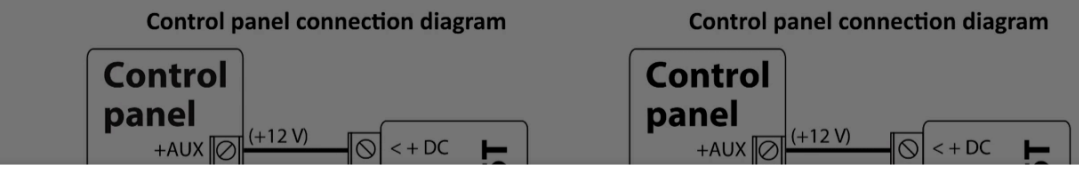
Ensure that the SIM card is activated. / Ensure that mobile internet service (mobile data) is enabled if Protegus app or IP connection with CMS will be used. / To avoid entering the PIN code in TrikdisConfig, insert the SIM card into your mobile phone and turn off the PIN request function.

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.



3.3 Schematics for connecting to panel keyswitch zone



Follow these schematics if the control panel will be armed/disarmed with the G16T PGM output turning on/off the panel's keyswitch zone.

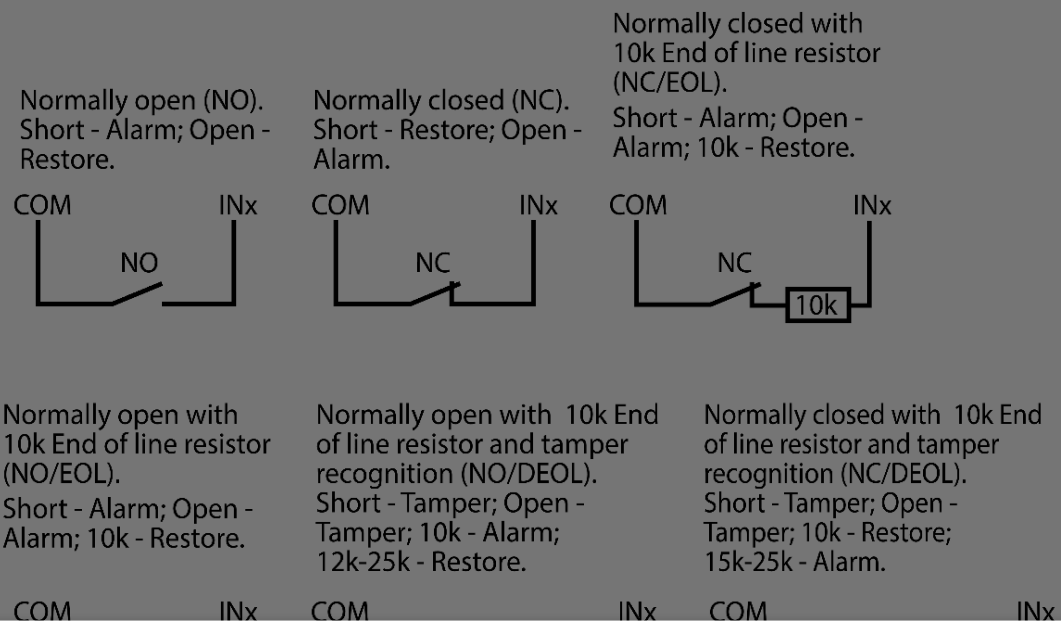
NOTE

The G16T communicator has one programmable output OUT, which can control one alarm system partition. In the TrikdisConfig window "System settings" output OUT1 mode needs to be set to **Remote control** (default setting).

3.4 Schematics for wiring inputs

The communicator has two input terminals (IN1, IN2) for connecting NO, NC, NO/EOL, NC/EOL, NO/DEOL, NC/DEOL type circuits. Default input setting - NO. The input type can be changed in the TrikdisConfig window **System settings -> Input IN1-IN2 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:

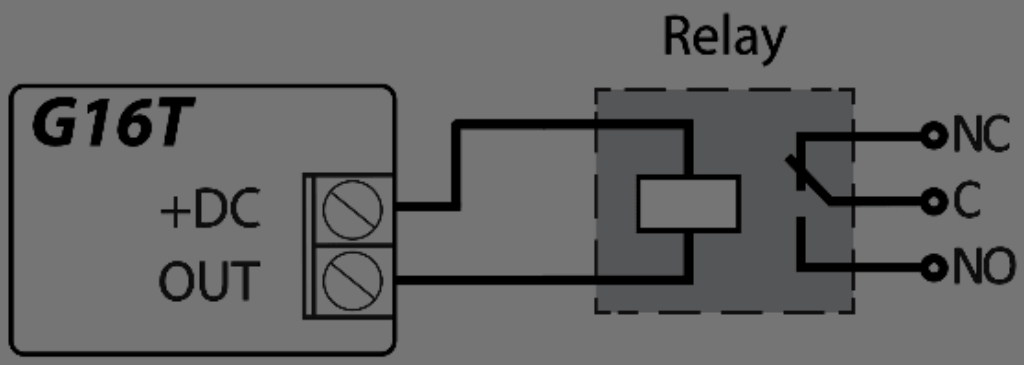


NOTE

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.

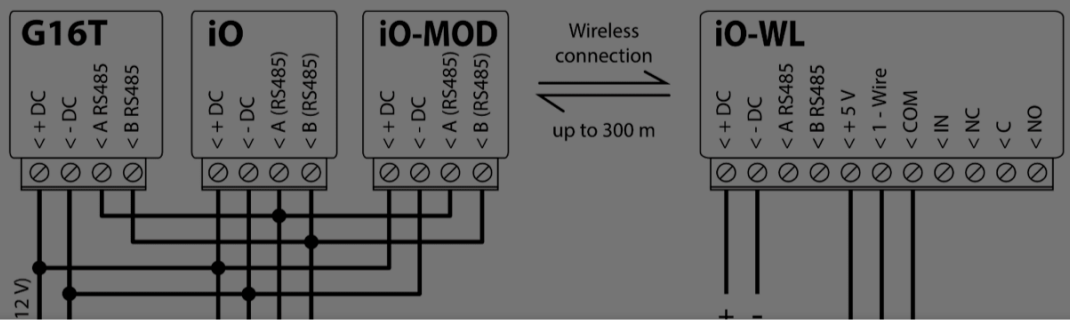
3.5 Schematics for wiring a relay

With relay contacts you can control (turn on/off) various electronic appliances.



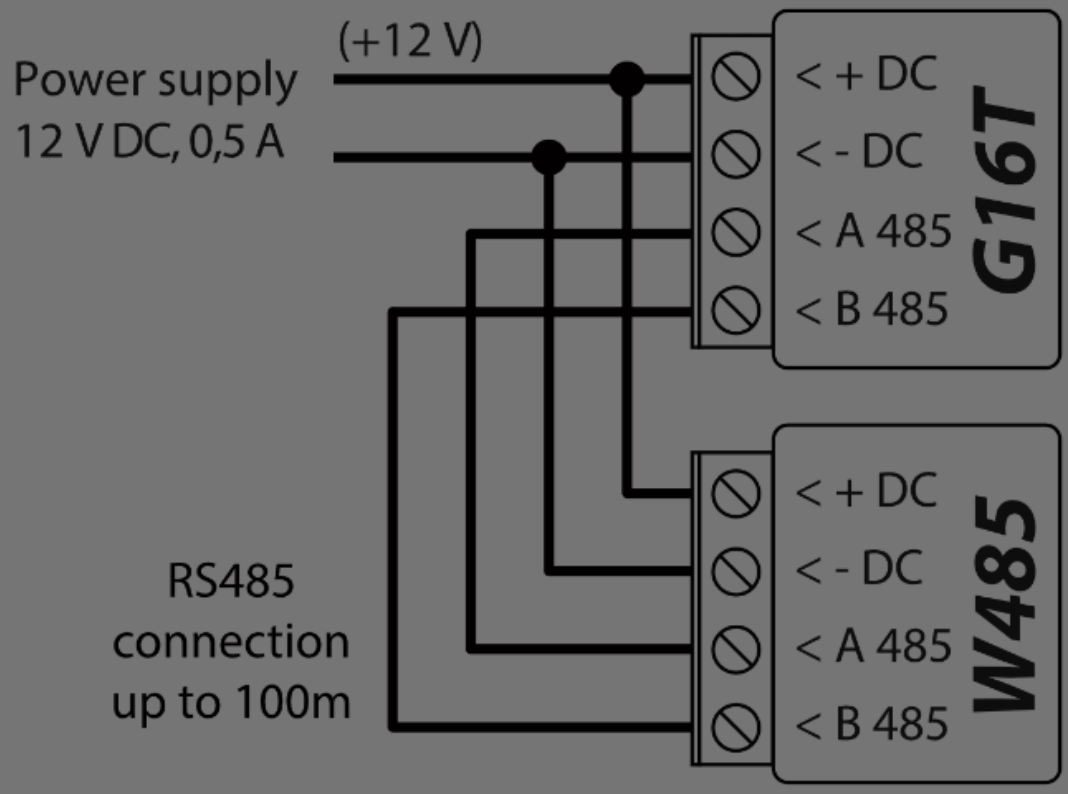
3.6 Schematics for connecting iO series expansion modules

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.



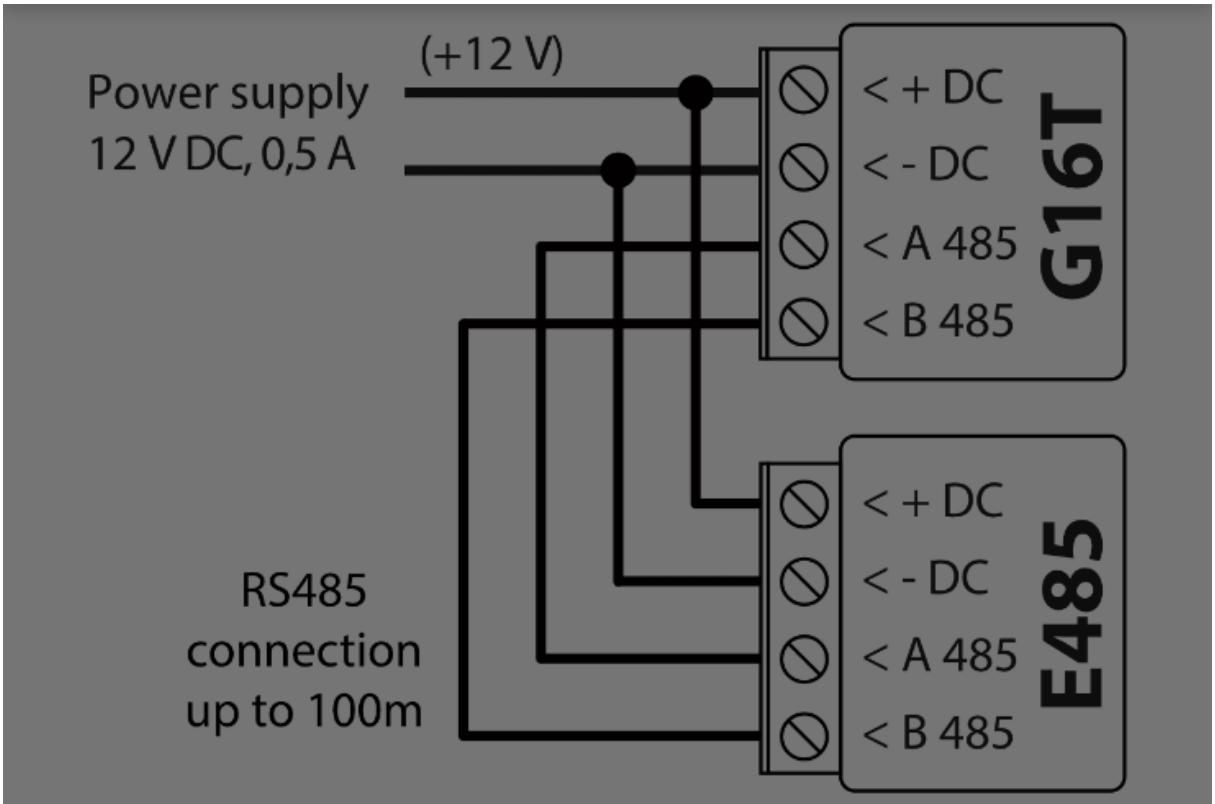
3.7 Schematic for connecting the *W485* WiFi module

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* sends event messages via the *W485* module. When WiFi connectivity is disrupted, the *G16T* sends messages via GPRS. When WiFi connectivity is re-established, the *G16T* returns to sending messages via *W485*. / Configuration of the *W485* WiFi module to work with the *G16T* is described in chapter 6.6. „„RS485 modules" window". / Insert SIM card into the communicator *G16T* 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*, CSP and *Protegus* messages are sent over wired Internet and mobile Internet is not used. If a wired internet connectivity



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 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

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 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 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 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;

4.2 Special settings for Honeywell Vista 48 panel

If you want to use G16T 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	*65	1	*74	1
*48	7	*66	1	*75	1
*50	1	*67	1	*76	1
*59	0	*68	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.

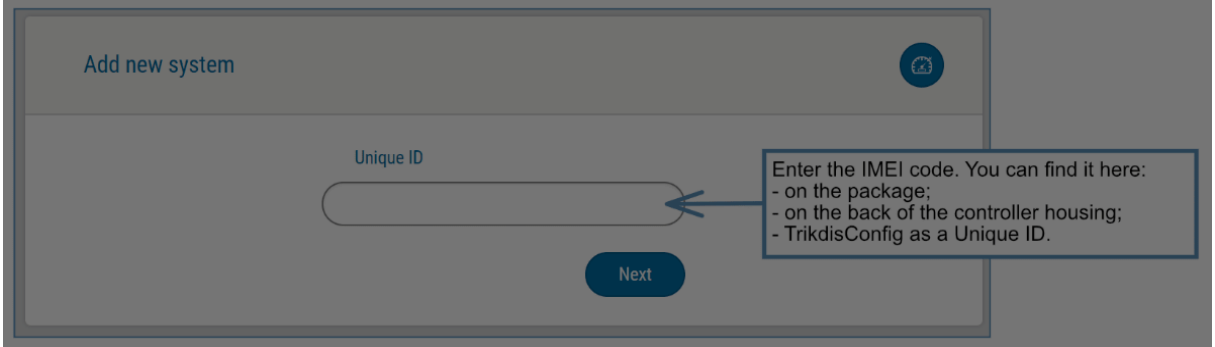
1. Download and launch the Protegus application or use the browser version: www.protegus.app.

NOTE

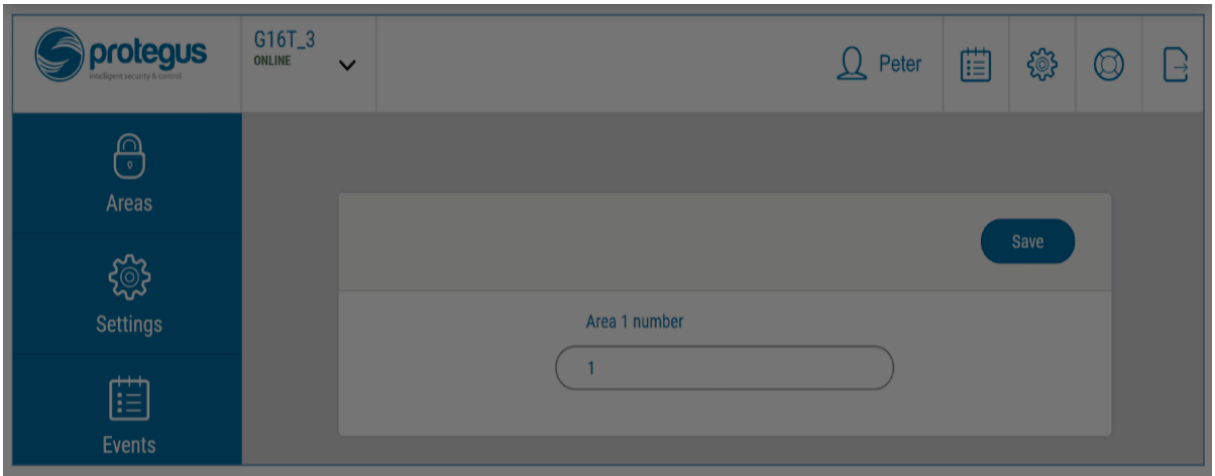
When adding the G16T to Protegus check if:

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's "*IMEI/Unique ID*" number. This number can be found on the device and the packaging sticker. After entering press **Next**.



4. 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**.



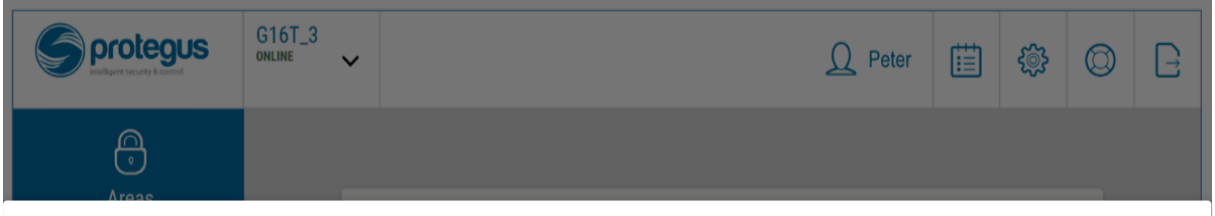
5.2 Additional settings to arm/disarm the alarm system using control panel's keyswitch zone

IMPORTANT

The control panel zone to which the G16T 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 output OUT, turning on/off the control panel keyswitch zone.

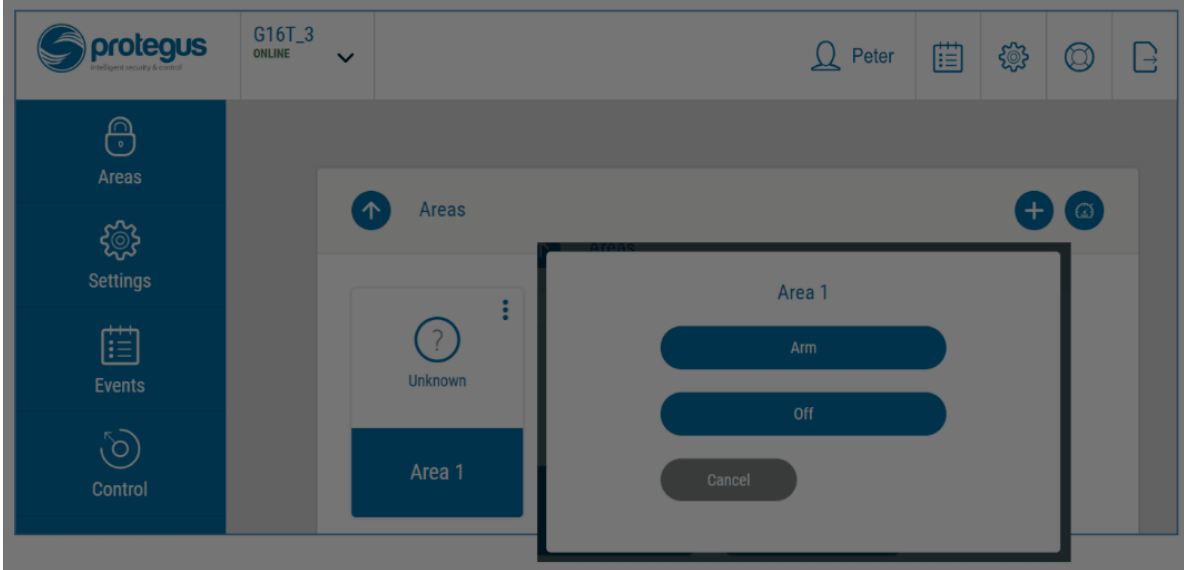
1. In the side menu press **Settings** and in the newly opened window press **Settings**. Select the box **Arm/Disarm with PGM** and specify which area the output will control. One output OUT can control only one area.



2. 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.
3. 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.

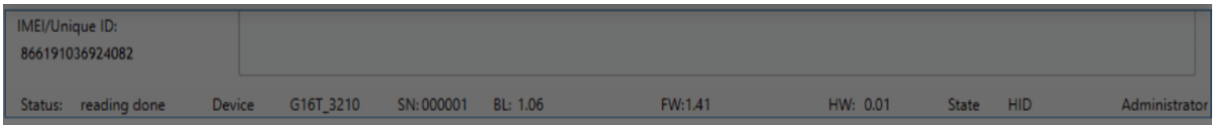


5.4 Configuration and control with SMS messages

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

5.4.1 SMS command list

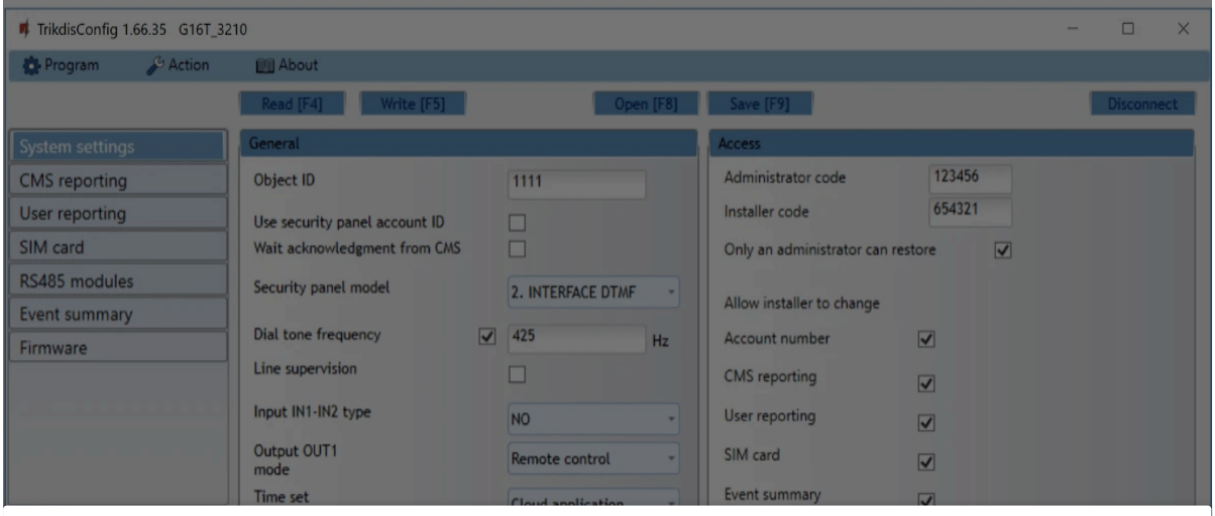
Command	Data	Description
INFO		Request information about the device. Response will be: communicator type, IMEI number, serial number and firmware version. E.g.: 123456 INFO
RESET		Restart the device. E.g.: 123456 RESET
OUTPUT1	ON	Turn on the OUTPUT1. E.g.: 123456 OUTPUT1 ON
OUTPUT1	OFF	Turn off the OUTPUT1. E.g.: 123456 OUTPUT1 OFF
OUTPUT1	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
CONNECT	Protegus=OFF	Disable access to Protegus service E.g.: 123456 CONNECT PROTEGUS=OFF
CONNECT	IP=0.0.0.0:8000	Set primary channel IP address and Port number. / E.g.: 123456 CONNECT IP=192.120.120.255:8000
CONNECT	ENC=123456	Set TRK encryption key. E.g.: 123456 CONNECT ENC=123456
CONNECT	APN=Internet	Set APN name. E.g.: 123456 CONNECT APN=INTERNET
CONNECT	USER=user	Set APN user. E.g.: 123456 CONNECT USER=User
CONNECT	PASS=password	Set APN password. E.g.: 123456 CONNECT PASS=Password
CONNECT	CP=	Disable the landline interface (1 - Disabled; 2 - Enabled). / E.g.: 123456 CONNECT CP=2



Object	Description
IMEI/Unique ID	Device IMEI number
Status	Operating condition
Device	Device type (G16T 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.*** Set the necessary settings according to the TrikdisConfig window descriptions given below.

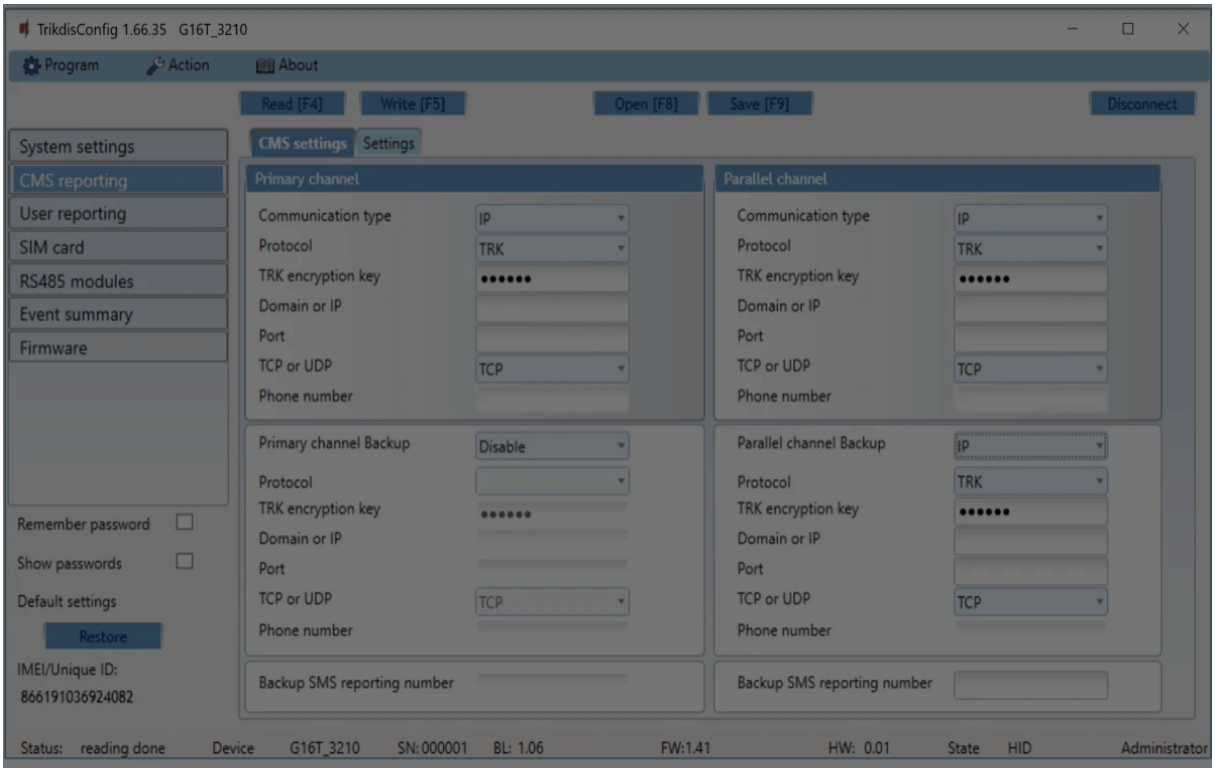
6.2 "System settings" window



- **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 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 with 4 wires (see chapter **3.2 Schematics for wiring the communicator to the security control panel**).
- **Input IN1-IN2 type** – select the input type from the list (NO, NC, NO/EOL, NC/EOL, NO/DEOL, NC/DEOL).
- **Output OUT1 mode** – select the output operation mode from the list.
- **Time set** – 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.



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.

- **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

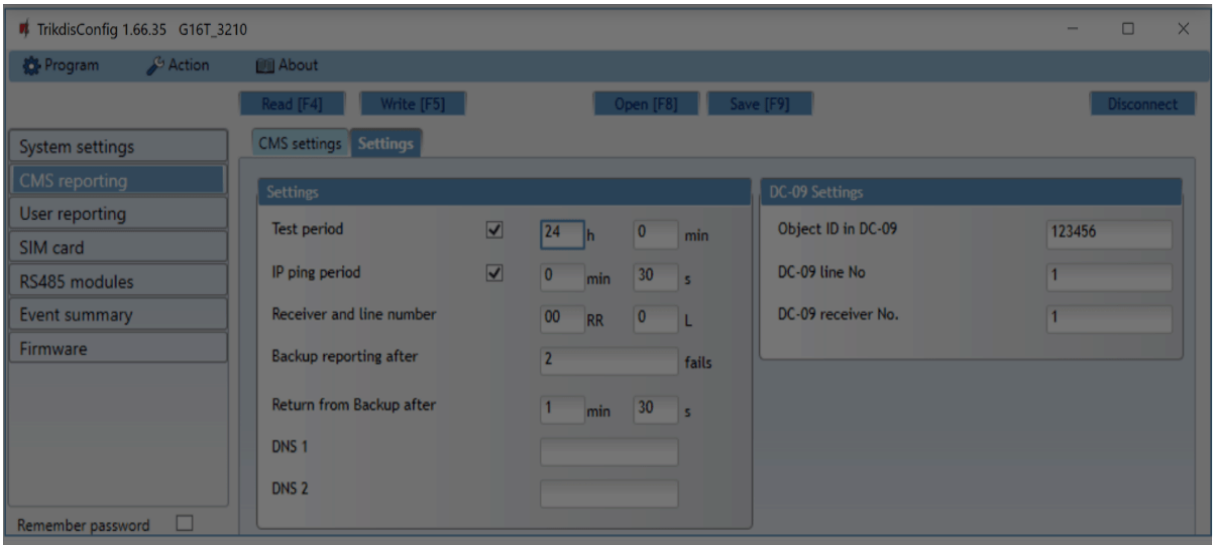
Through this channel events are transmitted in parallel with the primary channel. When the second channel is enabled, events can be sent simultaneously to two receivers (e.g., local and centralized monitoring stations). Parallel channel settings are the same as described above.

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.



"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.

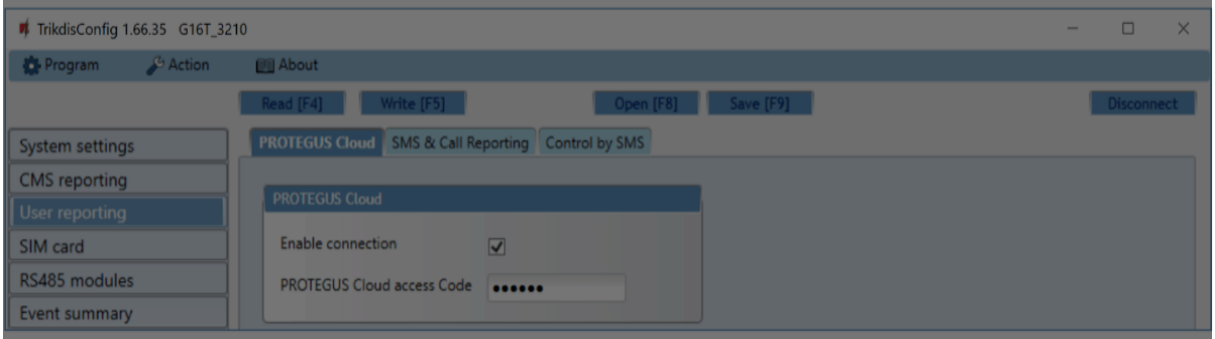
- **Backup reporting after** - indicates the number of unsuccessful attempts to send the message via Primary channel. If device fails to transmit specified number of times, it will

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

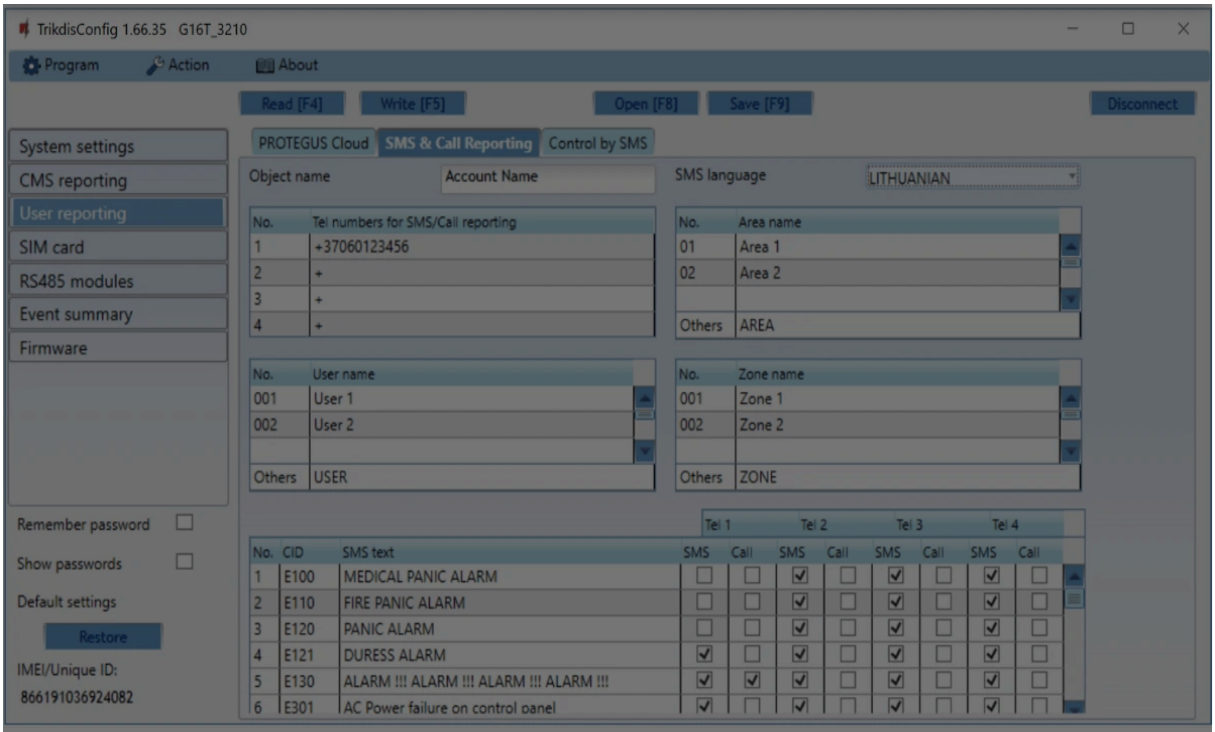


Protegus service allows users to remotely monitor and control the communicator. For more information about Protegus service, visit www.protegus.app.

"Protegus Cloud" settings group

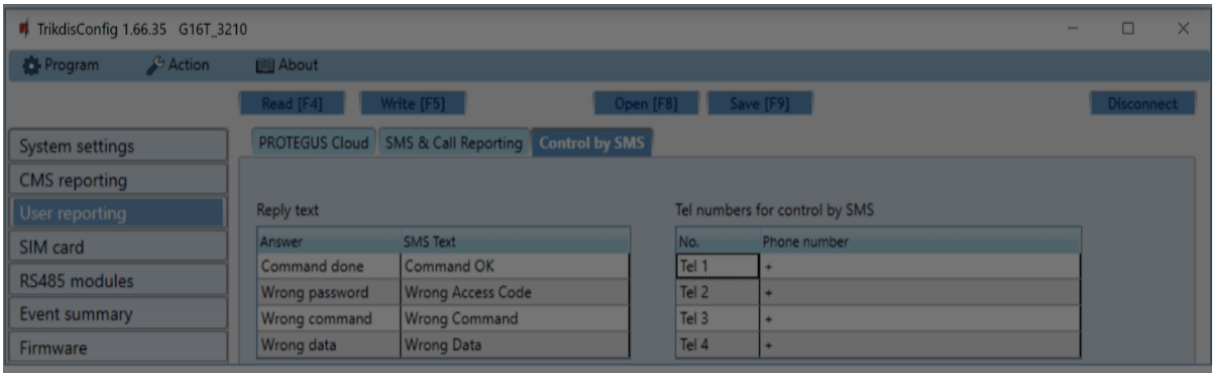
- **Enable connection** - enable Protegus service, G16T will be able to exchange data with Protegus app and to be remotely configured via ***TrikdisConfig***.
- **Protegus Cloud access Code -** 6-digit code for connecting to the Protegus app (default - 123456).

"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 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.

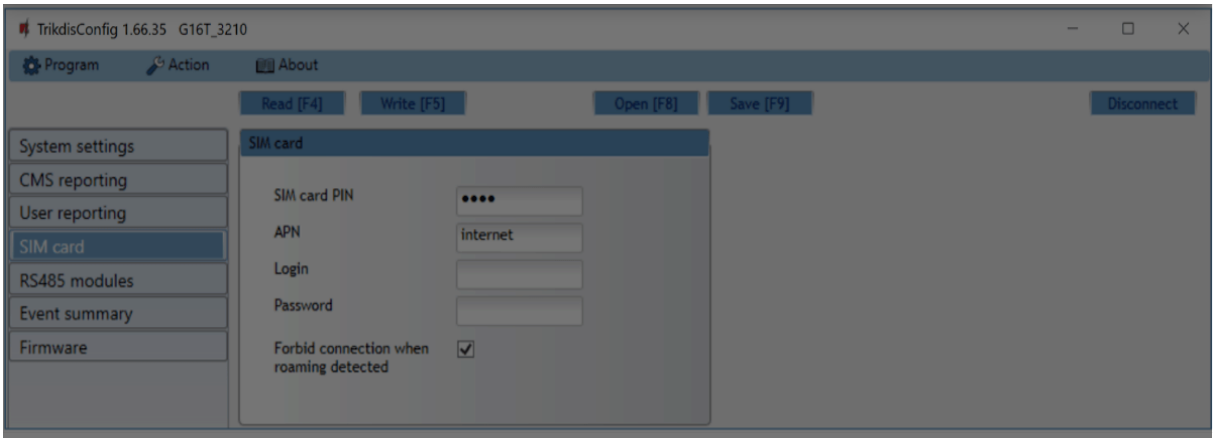
NOTE

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



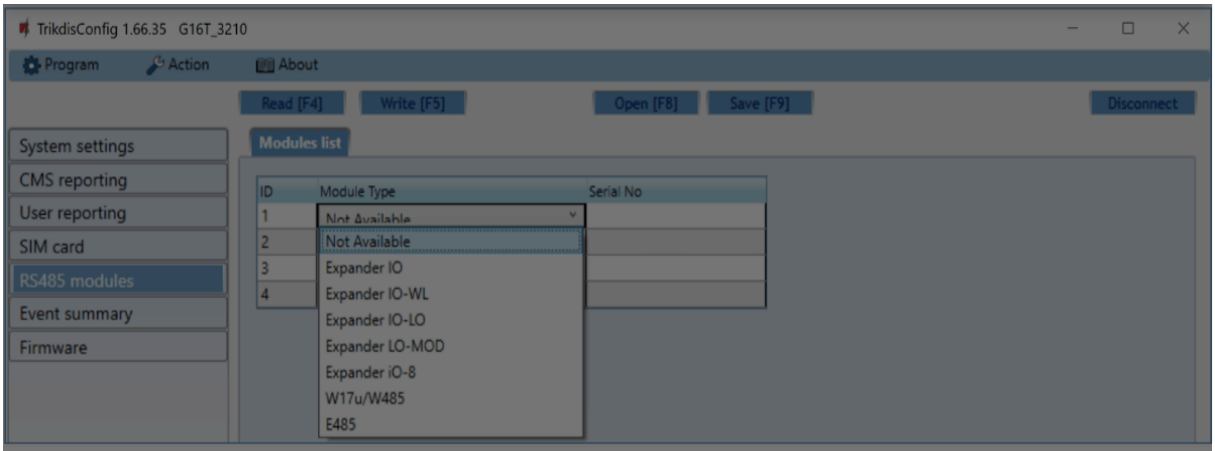
"SIM card" settings group

- **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 "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.



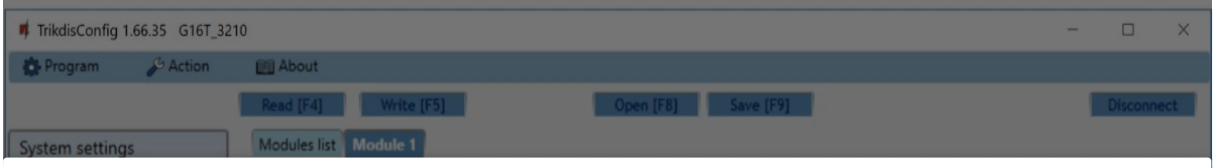
- **Module type** – select the module that is connected to the communicator via RS485 from the list.
- **Serial No –** enter the module serial number (6 digits), which is indicated on stickers on the module's case and packaging.

After selecting the connected module and entering its serial number, press the **Write [F5]** button. When the change is written, disconnect the USB Mini-B cable from the communicator. Wait one minute (the communicator has to register the connected module). Connect the USB Mini-B cable to the communicator. Click the **Read [F4]** button. 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.

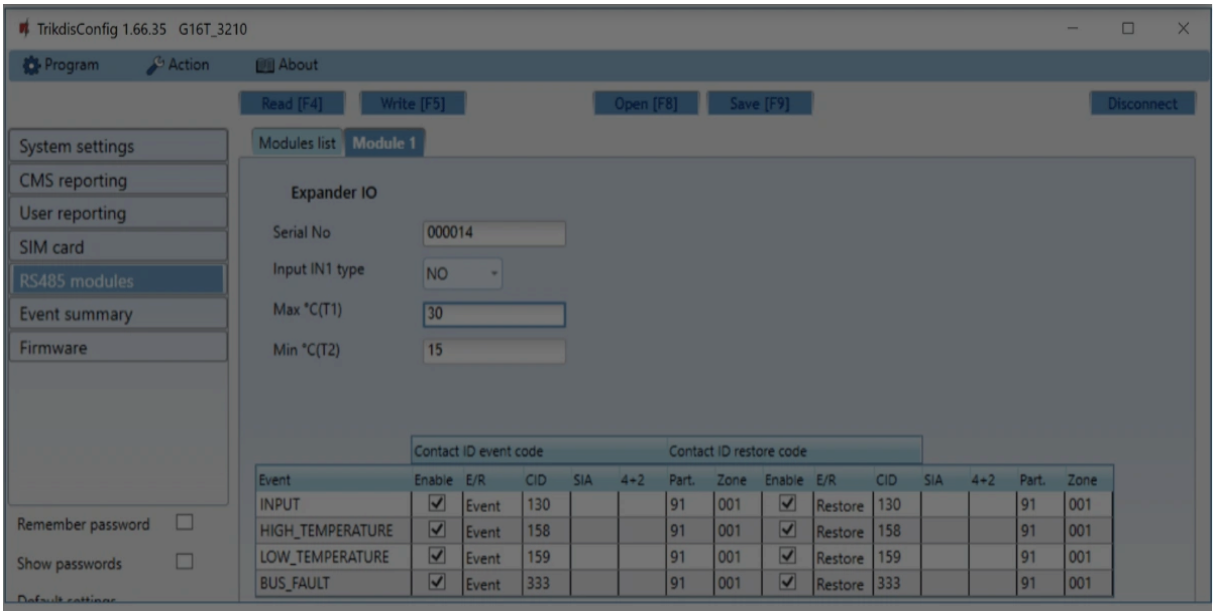
In the table inputs can be assigned Contact ID event and restore codes. After an input is triggered, the communicator will send an event with the set event code to the monitoring station receiver and to Protegus app.

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.
- **Object ID** - the input (IN) can be assigned an Object ID, which will differ from the Object ID of the communicator G16T.
- **Input type** – select the type of the input (NO or NC).



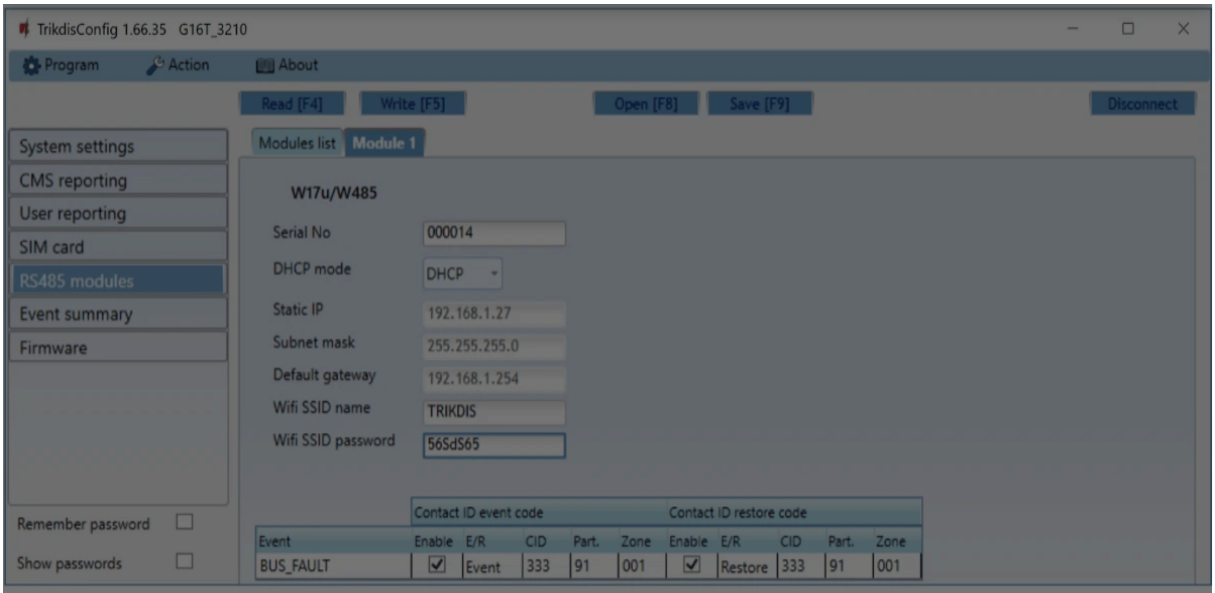
Expander iO has: terminals for 1 input, 1 output (relay contacts) and 1-Wire serial bus for connecting temperature sensors.

Relay output can be controlled according to logical (IF, THEN) conditions.

- **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

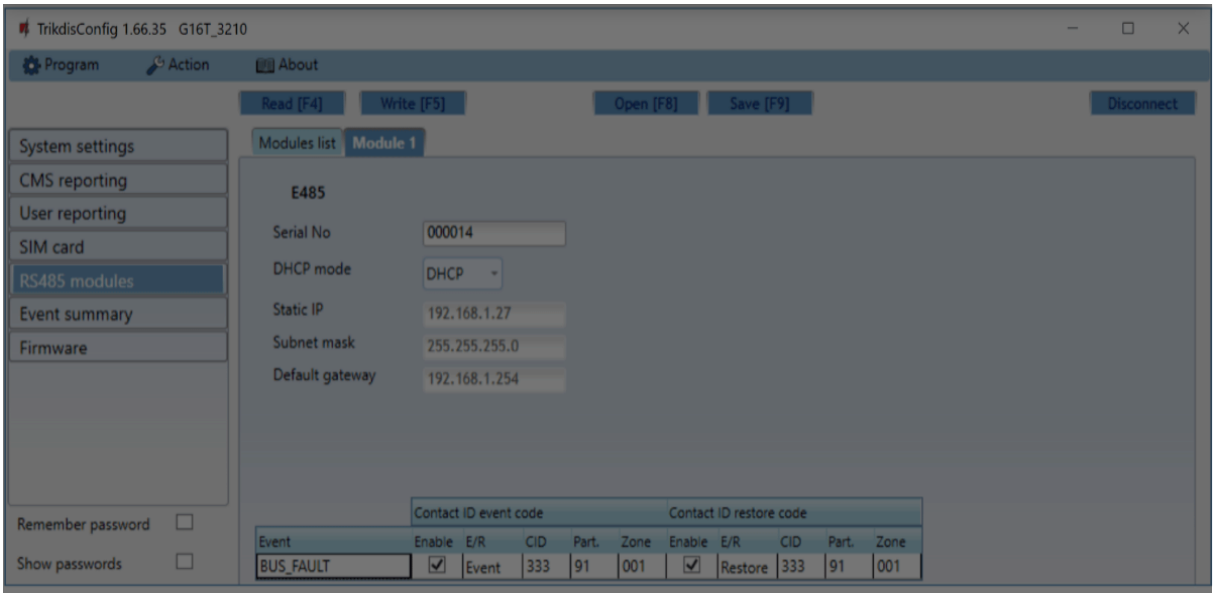


- **DHCP mode** – WiFi module's mode for registering to network (manual or automatic).
- **Static IP** – static IP address for when manual registering mode is set.
- **Subnet mask** – subnet mask for when manual registering mode is set.
- **Default gateway** – gateway address for when manual registering mode is set.
- **Wifi SSID name** – name of the WiFi network to which the W485 will connect.
- **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 is disrupted or re-established, the G16T will send a message with the assigned CID code to the CMS and Protegus app.

NOTE

You must configure the G16T 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* for *W485* to work.**

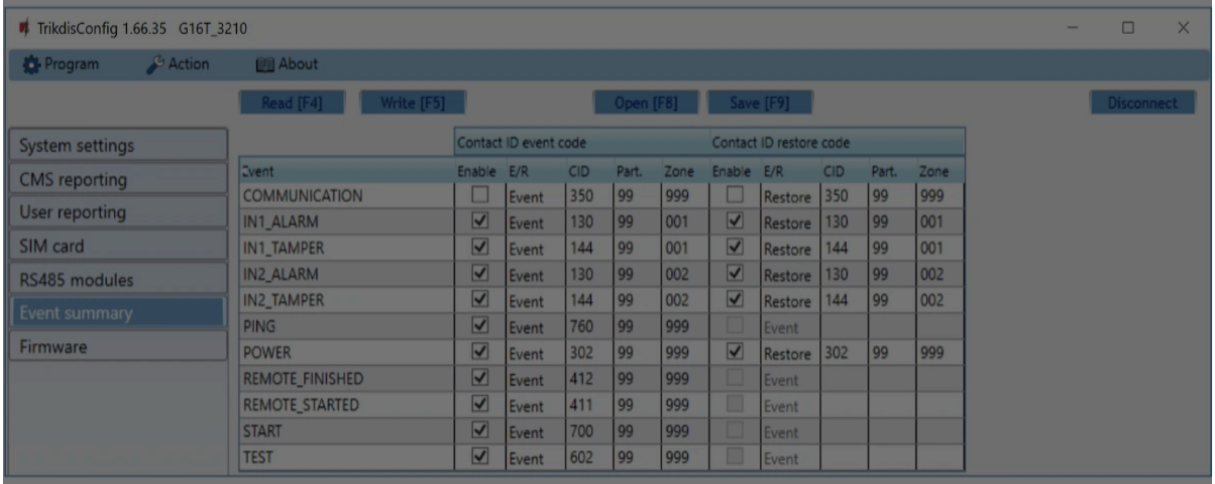


- **DHCP mode** – ethernet module's mode for registering to network (manual or automatic).
- **Static IP** – static IP address for when manual registering mode is set.
- **Subnet mask** – subnet mask for when manual registering mode is set.
- **Default gateway** – gateway address for when manual registering 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 is disrupted or re-established, the G16T will send a message with the assigned CID code to the CMS and Protegus app.

> **NOTE**
>
> You must configure the G16T 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* for *W485* to work.**

6.7 “Event summary” window



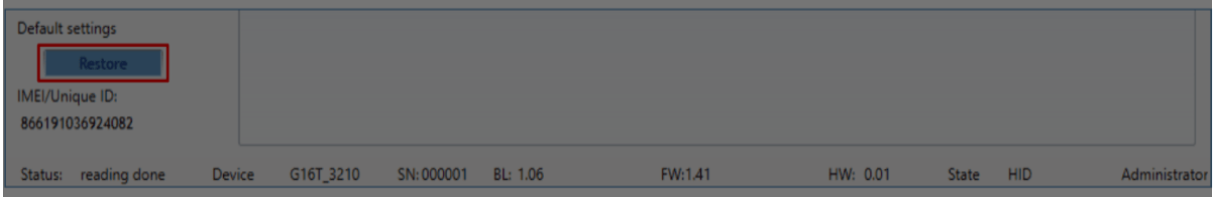
In this window, you can turn on, turn off or change the internal event messages sent by the device. After turning off an internal event in this window, it will not be sent irrespective of other settings.

- **COMMUNICATION** – message about connection error between the control panel and G16T, when line supervision is turned on.
- **IN_ALARM** – message about input (IN) circuit trigger.
- **IN_TAMPER** – message about input (IN) circuit tamper trigger.
- **PING** – PING heartbeat signal.
- **POWER** – message about low power supply voltage.
- **REMOTE_STARTED** – message about remote connection to configure G16T with TrikdisConfig.
- **REMOTE_FINISHED** – message about disconnection from remote configuration with TrikdisConfig.
- **START** – message about G16T connecting to the network.
- **TEST** – periodic test message.

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

6.8 Restoring factory settings

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



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.

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.

1. Make sure that the event arrives to the Central Monitoring Station and/or is received in the Protegus application.
2. To test communicator inputs, trigger them and make sure you receive the correct event.
3. To test the communicator outputs, activate them remotely and check their operation.
4. If the security control panel will be controlled remotely, arm/disarm the security system remotely by using the Protegus app.

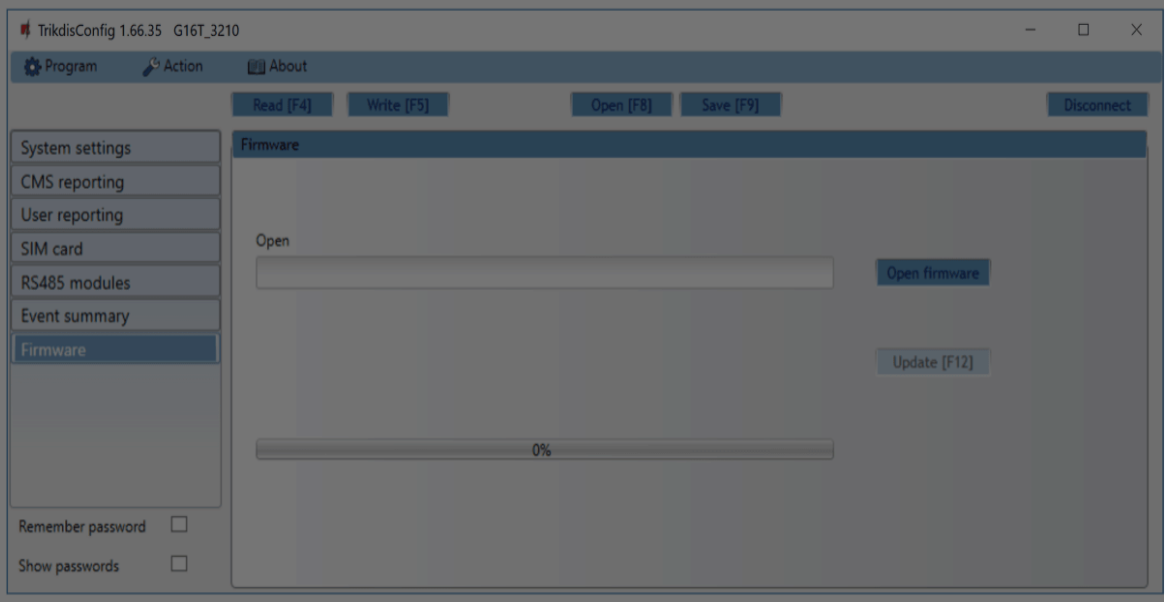
9. Manual firmware update

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.

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

1. Select the menu branch **Firmware**.
2. 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 communicator.
3. Press **Update [F12].**



4. Wait for the update to complete.
5. Click **OK** in the prompted window.

10. 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.

11. 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:	E110	"FA"
Water flow detected in zone:	E113	"SA"
Pull station alarm in zone:	E115	"FA"
Panic in zone:	E120	"PA"
Panic alarm by user:	E121	"HA"
Panic alarm in zone:	E122	"PA"
Panic alarm in zone:	E123	"PA"
Panic alarm in zone:	E124	"HA"
Panic alarm in zone:	E125	"HA"
Alarm active in zone:	E130	"BA"
Alarm active in zone:	E131	"BA"
Alarm active in zone:	E132	"BA"
Alarm active in zone:	E133	"BA"
Alarm active in zone:	E134	"BA"
Alarm active in zone:	E135	"BA"
Tamper active in zone:	E137	"TA"
Intrusion verified in zone:	E139	"BV"
Alarm active in zone:	E140	"UA"
System failure (143)	E143	"ET"
Tamper active in zone:	E144	"TA"
Tamper active in zone:	E145	"TA"
Alarm active in zone:	E146	"BA"
Alarm active in zone:	E150	"UA"
Gas detected in zone:	E151	"GA"
Water leakage detected in zone:	E154	"WA"
Foil break detected in zone:	E155	"BA"
High temperature at sensor:	E158	"KA"
Low temperature at sensor:	E159	"ZA"

System Event	CID Report Code	SIA Report Code
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: (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:	E373	"FT"
Trouble in zone:	E374	"EE"
Trouble in zone:	E378	"BG"
Trouble in zone:	E380	"UT"
Wireless zone fault:	E381	"US"

System Event	CID Report Code	SIA Report Code
Deferred disarm user	E405	"OR"
Alarm cancelled by user:	E406	"BC"
User disarmed remotely	E407	"OP"
Quick disarm	E408	"OP"
Remote disarm	E409	"OS"
Callback request made by CMS	E411	"RB"
Successful data download	E412	"RS"
Entry access denied for user	E421	"JA"
Entry by user	E422	"DG"
Forced Access zone	E423	"DF"
Exit access denied for user	E424	"DD"
Exit by user	E425	"DR"
User disarmed too early	E451	"OK"
User armed too late	E452	"OJ"
User Failed to Disarm	E453	"CT"
User Failed to Arm	E454	"CI"
Auto arm failed	E455	"CI"
Partial arm by user:	E456	"CG"
Exit violation by user:	E457	"EE"
System disarmed after alarm by user:	E458	"OR"
Recent arm user	E459	"CR"
Wrong code entered	E461	"JA"
Auto-arm time extended by user:	E464	"CE"
Device disabled (501)	E501	"RL"
Device disabled (520)	E520	"RO"
Wireless sensor disabled in zone: (552)	E552	"YS"
Zone bypassed	E570	"UB"
Zone bypassed	E571	"FB"
Zone bypassed	E572	"MB"

System Event	CID Report Code	SIA Report Code
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	E625	"JT"
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 :	R110	"FH"
No more water flow alarm in zone:	R113	"SH"
Panic alarm restored in zone:	R120	"PH"
Panic alarm cancelled by user:	R121	"HH"
Panic alarm restored in zone:	R122	"PH"
Panic alarm restored in zone:	R123	"PH"
Panic alarm restored in zone:	R124	"HH"
Panic alarm restored in zone:	R125	"HH"
No more alarm in zone:	R130	"BH"
No more alarm in zone:	R131	"BH"
No more alarm in zone:	R132	"BH"
No more alarm in zone:	R133	"BH"
No more alarm in zone:	R134	"BH"
No more alarm in zone:	R135	"BH"
No more tamper in zone:	R137	"TA"

System Event	CID Report Code	SIA Report Code
Foil break restored in zone:	R155	"BH"
Temperature has normalized at sensor:	R158	"KH"
Temperature has normalized at sensor:	R159	"ZH"
No more CO alarm in zone:	R162	"GH"
No more fire failure in zone:	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 reset restored in zone:	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"

System Event	CID Report Code	SIA Report Code
No more wireless module failure (382)	R382	"BR"
No more tamper in zone:	R383	"TR"
Battery OK in wireless zone:	R384	"XR"
No more trouble in zone: (391)	R391	"NS"
No more trouble in zone: (393)	R393	"NS"
User armed the system	R400	"CL"
User armed the system	R401	"CL"
Automatic arm	R403	"CA"
User armed remotely	R407	"CL"
Quick arm	R408	"CL"
Remote arm	R409	“CS”
User armed to Stay mode	R441	"CG"
User armed too early	R451	“CK”
User disarmed too late	R452	“CJ”
User Failed to Disarm	R454	“CI”
Partial Arm by user:	R456	"CG"
Recent disarm user	R459	“CR”
Device enabled (501)	R501	"RG"
Device enabled (520)	R520	"RC"
Wireless sensor enabled in zone: (552)	R552	"YK"
Zone bypass cancelled	R570	"UU"
Zone bypass cancelled	R571	"FU"
Zone bypass cancelled	R572	"MU"
Zone bypass cancelled	R573	"BU"
Group bypass by user: cancelled	R574	"CF"
Zone bypass cancelled	R576	"UU"
Zone bypass cancelled	R577	"UU"
Vent zone bypass cancelled	R579	"UU"
Walk test deactivated by user	R607	"TE"