



Cellular controller SHS GSM1

Installation manual

December, 2018

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Safety precautions

Cellular controller should only be installed and maintained by qualified personnel. Please read this manual carefully prior to installation in order to avoid mistakes that can lead to malfunction or even damage to the equipment.

Always disconnect the power supply before making any electrical connections. Any changes, modifications or repairs not authorized by the manufacturer shall render the warranty void.

Please adhere to your local waste sorting regulations and do not dispose of this equipment or its components with other household waste.

1. Description

Cellular controller Deguva SHS GSM1 for use with gas equipment. A gas pressure switch and an electric heater 12 V 3.6 W are connected to the controller. The user receives reports of the pressure switch actuations. The user can turn on / off the electric heater by SMS or by calling.

1.1 Purpose of terminals



1. SMA type connector for GSM antenna.
2. LED indicator lights.
3. Slot for opening the top lid.
4. Terminal blocks for external connection.
5. USB Mini-B port for programming the **SHS GSM1**.
6. Nano SIM card slot.

Terminal	Description
AC / +DC	Power supply terminal (16-18 V AC or positive 16-24 V DC)
AC / -DC	Power supply terminal (16-18 V AC or negative 16-24 V DC)
BAT+	Positive terminal of the 12 V backup battery
BAT-	Negative terminal of the 12 V backup battery
+5 V	Positive 5 V power terminal for <i>1-Wire</i> devices
1 WIRE	<i>1-Wire</i> data bus terminal
A 485	Terminal A of <i>RS485</i> bus
B 485	Terminal B of <i>RS485</i> bus
1 IN	1 st input (NC, NO, EOL=10 kΩ)

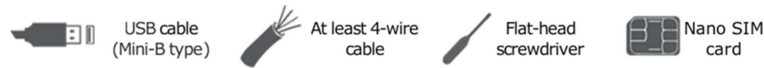
Terminal	Description
2 I/O	Input / output terminal: 2 nd input terminal (NC, NO, EOL=10 kΩ) or output terminal of OC type (up to 0,1 A)
COM	Common negative terminal
3 I/O	Input / output terminal: 3 th input terminal (NC, NO, EOL=10 kΩ) or output terminal of OC type (up to 0,1 A)
4 I/O	Input / output terminal: 4 th input terminal (NC, NO, EOL=10 kΩ) or output terminal of OC type (up to 0,1 A)
+12 V	Positive 12 V power terminal for external devices
5 OUT	Output terminals of OC type (up to 1 A)
6 OUT	Output terminals of OC type (up to 1 A)

1.2 LED indication of operation

Indicator	Light status	Description
NETWORK	Green solid	Connected to GSM network
	Yellow blinking	Indication of GSM signal strength from 0 to 5. Sufficient strength is 3.
DATA	Green solid	Message is being sent
	Yellow solid	There are unsent events in the data buffer
	Green and yellow blinking	Configuration mode is on
POWER	Green blinking	The power supply voltage is sufficient
	Yellow blinking	The power supply voltage is insufficient
	Green and yellow blinking	Configuration mode is on
TROUBLE	Off	No operational problems
	1 blink	No SIM card inserted
	2 blinks	The PIN code of the SIM card is incorrect
	3 blinks	Unable to connect to GSM network
	4 blinks	Unable to connect to the IP receiver using the primary channel
	5 blinks	Unable to connect to the IP receiver using the backup channel
	6 blinks	Internal clock of the SHS GSM1 is not set
	7 blinks	Insufficient power supply voltage from the backup supply
	8 blinks	No AC power
9 blinks	Problems with the connection to the <i>RS485</i> module	

1.3 Components necessary for installation

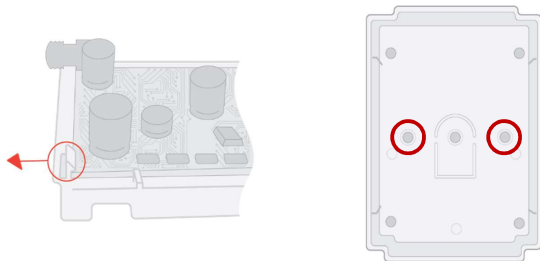
Before beginning installation, make sure you have the necessary components that you can order from your local retailer.



2. Schematics and installation process

2.1 Mounting

1. Before beginning, make sure that the GSM signal level is sufficient in the place where the **SHS GSM1** will be mounted.
2. Remove the top lid, remove the plug parts of both terminal blocks.
3. Remove the PCB.



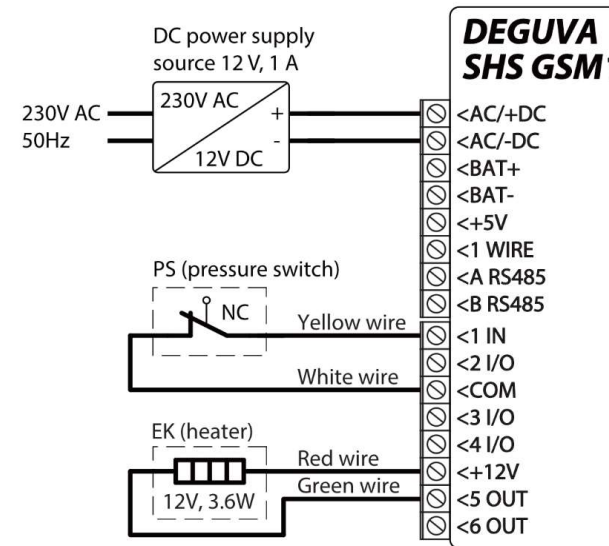
4. Fasten the base of the casing in the desired place using screws.
5. Reinsert the PCB and terminal blocks.
6. Screw the GSM antenna in.
7. Insert a nano-SIM card. The SIM card must already be activated in the GSM network and all required services must be enabled, i.e., the card must be able to call, send and receive SMS messages, use mobile internet. Ask your SIM card's mobile network operator how to enable the required services.

Note: Make sure that the SIM card is activated.
 Make sure that the mobile internet service is turned on if connection via the IP channel will be used for remote control of the controller.
 If you do not want to enter the PIN code in **TrikdisConfig**, insert the SIM card into a mobile phone and disable PIN code requests.



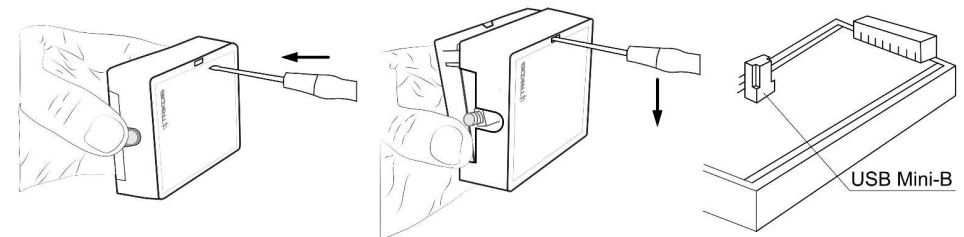
8. Close the top lid.

2.2 Schematic for connecting controller Deguva SHS GSM1



3. Setting parameters using **TrikdisConfig** software

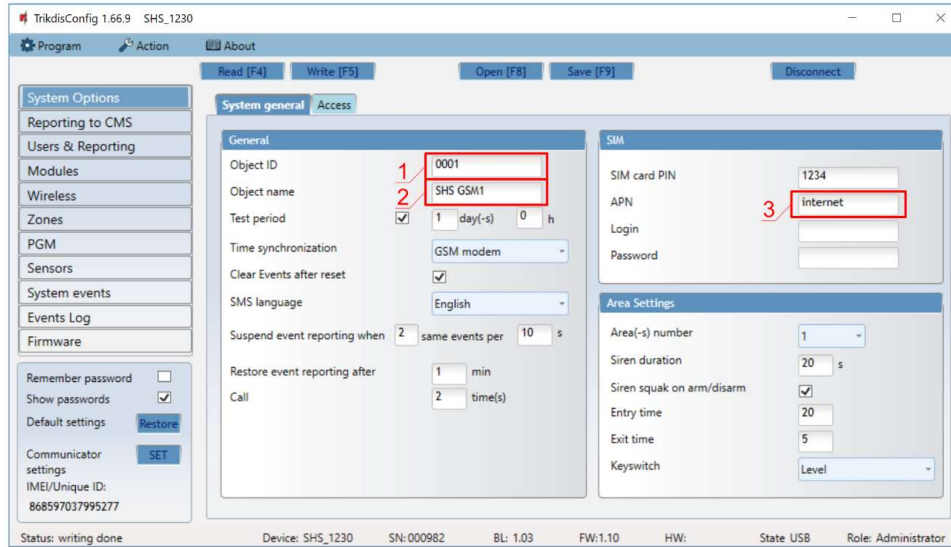
1. Download the configuration software **TrikdisConfig** from www.trikdis.com/ (enter "TrikdisConfig" in the search field) and install it.
2. Remove the lid of the **SHS GSM1** using a flat-head screwdriver as shown below:



3. Connect the **SHS GSM1** to a computer using a USB Mini-B cable.
4. Launch the configuration program **TrikdisConfig**. The program will automatically recognize the connected device and will automatically open the **SHS GSM1** configuration window.
5. Click the **Read [F4]** button to see the current parameters of the **SHS GSM1**. If prompted, enter the **administrator** or **installer** code (default password 123456) in the pop-up window.

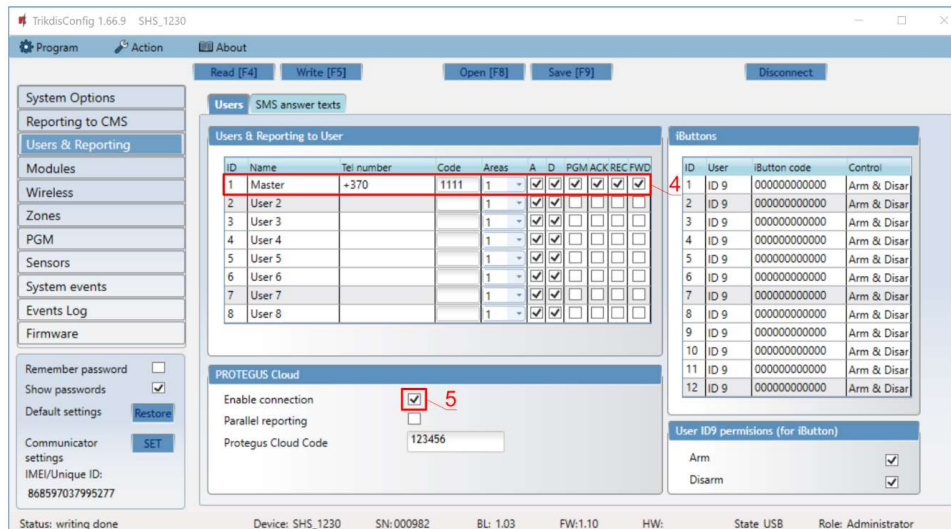
Below we describe the settings that need to be changed so that the controller starts up.

„System Options” window
„System general” tab



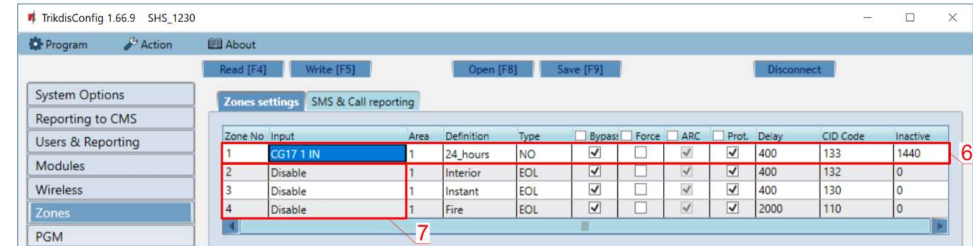
- 1) Enter Object ID.
 - 2) Enter Object name.
 - 3) Change APN name. APN can be found on the website of the SIM card operator.
- Leave the values for all other parameters as set by the manufacturer.

„Users & Reporting” window



- 4) Enter the user’s phone numbers.
- 5) Tick the checkbox **Enable connection** to the *Protegus* Cloud. (Enable *Protegus* Service, *TriklisConfig* will allow you to configure *SHS GSM1* remotely.)

„Zones” window
„Zones settings” tab



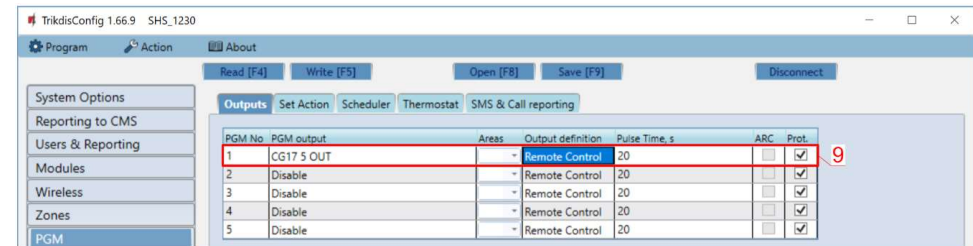
- 6) Set 1 IN Definition 24_hours, Type NO, Inactive 1440.
- 7) For other Input you need to set the Disable.

„SMS & Call reporting” tab



- 8) Write the SMS text that the user will get when event/restore 1 IN (PS - Pressure Switch).

„PGM” window
„Outputs” tab



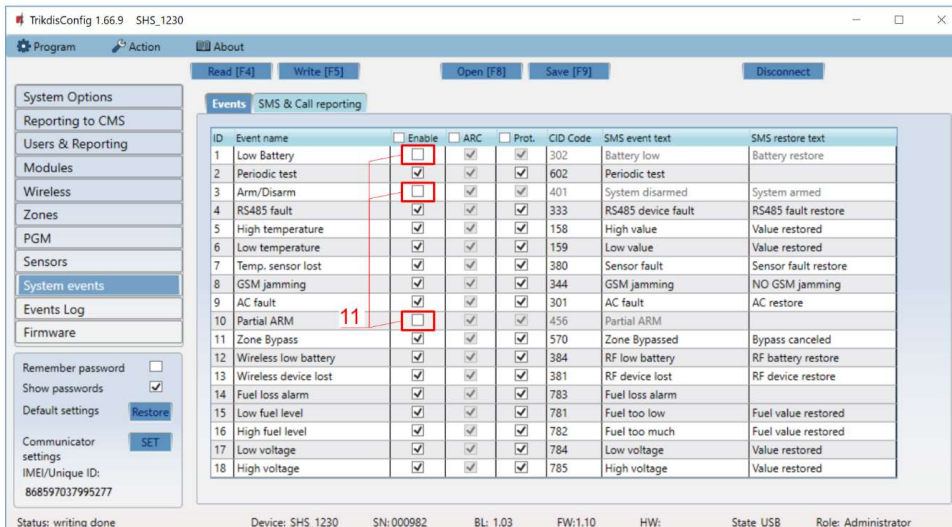
- 9) Set 5 OUT Remote control.

„SMS & Call reporting“ tab



10) Write **SMS text** that the user will receive when it is turn on/turn off 5 OUT (electric heater).

„System events“ window
„Events“ tab



11) Unselected the checkbox for 1, 3, 10 events.

Leave the values for all other parameters as set by the manufacturer.

Set the necessary settings and when finished, click **Write [F5]**. Disconnect the USB cable. Power on the **SHS GSM1** controller.

4. Control using SMS commands

1. Change the administrator password

To ensure safety, change the default administrator SMS password. Send an SMS message of this format:

PSW 123456 xxxxxx

123456 Default administrator password
xxxxxx New 6-symbol administrator password

2. Allow other users to control

Only phone numbers on the user list can control the system using SMS messages or phone calls. From an administrator phone, send SMS messages with other people’s phone numbers and names to allow them to control the system:

SETN xxxxxx PHONEx=+PHONENR#NAME

xxxxxx 6-symbol administrator password
x User’s number on the list. (If you write 1 as the user number, you will transfer your administrator’s rights to another user).

PHONENR User’s phone number
NAME User’s name

3. Enable PGM output

Remotely enable PGM output via SMS:

OUTPUT1 xxxxxx ON

xxxxxx 6-symbol administrator password

4. Disable PGM output

Remotely disable PGM output via SMS:

OUTPUT1 xxxxxx OFF

xxxxxx 6-symbol administrator password

SMS commands list

Command	Data	Description
INFO		Request information about the controller. Controller type, IMEI number, serial number and firmware version will be included in the answer. E.g.: INFO 123456
RESET		Reset the device. E.g.: RESET 123456
OUTPUTx	ON	Turn on an output, “x” is the output number. E.g.: OUTPUT1 123456 ON
	OFF	Turn off an output, “x” is the output number. E.g.: OUTPUT1 123456 OFF
	PULSE=ttt	Turn on an output for a specified time - “x” is the OUT output number, and “ttt” is a three-digit number that specifies pulse time in seconds. E.g.: OUTPUT1 123456 PULSE=002
PSW	<i>Naujas slaptažodis</i>	Change password. E.g.: PSW 123456 654123
TIME	<i>YYYY/MM/DD,12:00:00</i>	Set date and time. E.g.: TIME 123456 2018/01/03,12:23:00
TXTA	<i>Objekto pavadinimas</i>	Save an object name. E.g.: TXTA 123456 House
TXTE	<i>Z1=<Text></i>	Customize zone alarm SMS message: Z1...Z12 – input zone number. E.g.: TXTE 123456 Z1=ALARM in Zone1

Command	Data	Description
	Z12=<Text>	
TXTR	Z1=<Text> Z12=<Text>	Customize zone restore text: Z1...Z12 – input zone number. E.g.: TXTR 123456 Z1=Restore Zone1
RDR	PhoneNR#SMS<Text>	Forward SMS messages to the specified number. The phone number must start with a "+" sign and international country code. E.g.: RDR 123456 +37061234567#forwarded text
ASKI		Send SMS message about statuses of inputs IN. E.g.: ASKI 123456
ASKO		Send SMS message about statuses of outputs OUT. E.g.: ASKO 123456
SETN	PhoneX=PhoneNR#Name	Add a phone number, username and assign it to user "x". "x" is the phone number's line on the list. The phone number must start with a "+" symbol and international country code. The phone number and username must be separated by a # symbol. E.g.: SETN 123456 PHONES=+37061234567#JOHN
	PhoneX=DEL	Delete user's phone number and name. E.g.: SETN 123456 PHONES=DEL
CONNECT	Protegeus=ON	Connect to Protegeus cloud service. E.g.: CONNECT 123456 PROTEGUS=ON
	Protegeus=OFF	Disconnect from Protegeus cloud service. E.g.: CONNECT 123456 PROTEGUS=OFF
	Code=123456	Protegeus cloud service code. E.g.: CONNECT 123456 CODE=123456
	APN=Internet	APN name. E.g.: CONNECT 123456 APN=INTERNET
	USER=user	APN user. E.g.: CONNECT 123456 USER=User
	PSW=password	APN password. E.g.: CONNECT 123456 PSW=Password

5. Control using phone call

Note: If no users have been added to the system, the first one to call the **SHS GSM1** will become the system administrator and will be the only one who can control the **SHS GSM1** using phone calls and SMS commands.
If you want to allow other users to control the system using phone calls, add them with **TrikdisConfig** or with SMS commands.

SHS GSM1 phone call control commands

Controlling outputs OUT using phone calls:

- If the user is assigned the right to control outputs OUT and the output OUT is assigned the type "Remote control" (using **TrikdisConfig**): call the **SHS GSM1**. The **SHS GSM1** will answer the call and you can dial commands using the phone keyboard (see table below).

Mobile phone keyboard commands list

Keyboard buttons	Function	Description
[2][output no][#][state no][*]	Control selected output OUT	Controls a specified output OUT. State: [0] – output turned off; [1] – output turned on; [2] – turned off for pulse time; [3] – turned on for pulse time; (pulse time is specified in the TrikdisConfig software, "PGM" table) [*] – this symbol shows the end of the command. E.g. (turn on the output 5OUT): 21#1* E.g. (turn off the output 5OUT): 21#0* E.g. (turn on the output 5OUT for Pulse time specified in the TrikdisConfig "PGM" table): 21#3*

6. Setting parameters remotely

IMPORTANT: Remote configuration will only work when:

- An activated SIM card is inserted and the PIN code is entered or disabled;
- The power is on ("POWER" LED is green solid);
- Is connected to the network ("NETWORK" LED is green solid and blinks yellow);
- The **Protegeus cloud** service is enabled. (Send an SMS message to **SHS GSM1** controller: **CONNECT 123456 PROTEGUS=ON,APN=INTERNET**).



- Download the software **TrikdisConfig** from www.trikdis.com
- Make sure that the controller is connected to the Internet and that connection with **Protegeus** is enabled.
- Launch the configuration software **TrikdisConfig** and in the **Unique ID** field of the **Remote Access** group enter the IMEI number of your **SHS GSM1** (the IMEI number can be found on stickers on the back of the device and on the packaging).
- In the field **System Name** give a name to the **SHS GSM1** with this IMEI. Click **Configure**.

5. Click the button **Read [F4]** and the program will read the parameter values currently set on the **SHS GSM1**. If a window for entering the *Administrator code* appears, enter the 6-symbol *administrator* code (default password 123456). If you want the program to remember the code, tick the box next to **Remember password** and click the button **Write [F5]**.
6. Make the desired changes to the settings of the **SHS GSM1** and click **Write [F5]**. If you want to disconnect from the **SHS GSM1** click **Disconnect** and exit the *TrikdisConfig* program.

7. SHS GSM1 controller testing

When configuration and installation are finished, test the system:

1. Check if the power is on;
2. Check the network connectivity (NETWORK indicator): sufficient GSM signal strength is level 5 (green solid for 4 seconds and five yellow flashes). Sufficient 3G signal strength is level 3 (green solid for 4 seconds and three yellow flashes). If the red TROUBLE light blinks 5 times, find another place to mount the **SHS GSM1**;
3. To test the **SHS GSM1**'s 1 inputs (pressure switch PS), enable them and check if the correct messages reach the recipients;
4. Turn on the output 5OUT by SMS. Check if the correct messages reach the recipients and the PGM output is turned on;
5. Turn off the output 5OUT by SMS. Check if the correct messages reach the recipients and the PGM output is turned off;
6. Turn on the output 5OUT by call. Check if the correct messages reach the recipients and the PGM output is turned on;
7. Turn off the output 5OUT by call. Check if the correct messages reach the recipients and the PGM output is turned off.