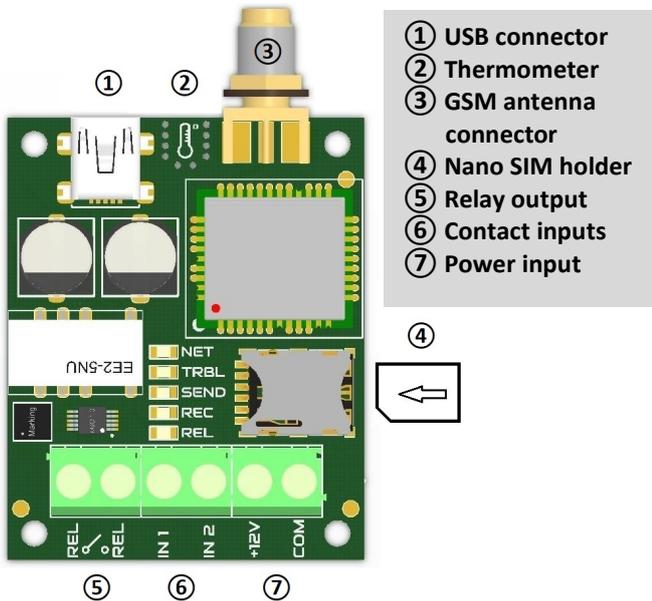## Brief description of operation

Contact controlled GSM phone caller, with free call controllable relay output, with temperature alarm and thermostat functions. Upon receiving input contact, provides alarm calls and text messages to a maximum of 4 phone numbers.

The output of the relay can be controlled from 4 phone numbers, with caller identification, at any time, plus from another 4 phone numbers on an occasional basis, up to an adjustable date. The dates for occasional control can be modified easily in a text message, thus an electronic key for AIRBNB can be provided and deleted. When set to operate without caller identification, an unlimited number of users can control the output relay.

The integrated thermometer of the unit can measure ambient temperature with an accuracy of ±2°C, which can be queried in a text message. Temperature alarm threshold values (lower, upper, or both) can be set, which trigger alarm calls, text messages, and even the output relay can be controlled like a thermostat, which resets after reaching the needed temperature.

In order to be connected to alarm systems, the unit has low power supply alarm below 11V, and automatic shutdown below 10.2V, for protecting the battery from deep discharge. For feedback of availability, heartbeat signalling can be set, and the SIM card will automatically forward balance info.

Structure of the SS21-GSM

① USB connector
② Thermometer
③ GSM antenna connector
④ Nano SIM holder
⑤ Relay output
⑥ Contact inputs
⑦ Power input

Configuration of the SS21-GSM

The module can be set up in 2 different ways. Through USB connection, using a PC software (with USB cable), or by SMS messages. In SMS messages, only the end user parameters can be modified, see the table of text message commands. For the configuration of settings the **SecurecomConfigurator** application must be installed, which can be downloaded from the http://www.securecom.eu/applications site. After running the program, the module has to be connected to the PC via an USB port, and the active COM port has to be selected.

Function and setup of relay output

The output **Relay control** can be configured for 3 different functions:

- control from the set phone numbers, by calls
- control by any calls, without caller identification
- control when reaching the given temperature threshold

Setup is accessible from the following menu of the PC software:

GENERAL SETTINGS	
SIM PIN	
Ring time (sec):	20
Call time (sec):	20
Alarm time (sec):	300
SMS limit/day:	20
Call limit/day:	20
Relay control:	Temperature limit
	Configured phone numbers
	All call
	Temperature limit

On time of the output relay can be set between 1 to 600 seconds in the PERIPHERIAL SETTINGS menu.

PERIPHERAL SETTINGS		
Name	Type	Interval
Input 1	NO	0,3 sec
Input 2	NO	0,3 sec
Relay control		5 sec

Setup of inputs

Upon control, inputs **IN1** and **IN2**, depending on the settings, send an alarm call and text message. Control can be configured compared to the **COM** connection of the negative pole of the power supply, as a short (NO) or open (NC) type. In addition, delay of the inputs can be set between 0 and 100 seconds, in increments of .1 second, as per the above photo.

Setup of temperature alarm

The integrated thermometer of the unit measure temperature with an accuracy of ±2°C. For greater accuracy, the thermometer should be installed in a ventilated or metal box, or perhaps left exposed. In a sealed box, it might report a different temperature, because of the box heating up.

Lower and upper temperature alarm threshold values can be set, which trigger the module to send an alarm call and/or text message. When crossing the threshold, relay control can be automatic, like a GSM thermostat. This requires, that the **Relay** function checkbox is checked, in the **GENERAL SETTINGS** window, and **Temperature limit** is selected for **Relay Control**.

PERIPHERAL SETTINGS and SMS NOTIFICATIONS					
Name	Limit	Range	Relay	SMS message	
Upper temp.	20 °C	Above	☑	High temperature alarm	TEST
Lower temp.	20 °C	Under	☐	Low temperature alarm	TEST

Temperature can be queried in a SMS text message, by sending **?** to the unit.

Notifications and user rights

The module is capable of sending alarm calls and text messages to a maximum of 4 phone numbers, in the following events:

- Input alarms (IN1, IN2)
- Temperature lower or higher than threshold

In addition, the maintenance notifications are sent to the first phone number only:

- Low voltage (SMS and call notification below 11V)
- Test period (SMS notification, adjustable 1-30 days)
- Incoming SMS (forwarding the balance information)

The phone numbers that you want to be notified can be set up as follows:

NOTIFICATON and PERMISSION SETTINGS					
Phone number	Call	SMS	ACK	Relay	SMSFW
00363033333333	☑	☑	☑	☑	☑
+3630111111111	☑	☑	☐	☑	☐
0630222222222	☑	☑	☐	☑	☐
	☐	☐	☐	☐	☐

In case the **ACK** (acknowledge) checkbox is marked, the alarm call will be repeated until one of the buttons (0-9) of the telephone is pushed.

The **SMSFW** (forwarding the incoming SMS) will be sent to the first phone number only by the module.

By marking the Relay checkbox, the phone number can control the relay by free call. It works only, if in the **Relay control** menu of the **GENERAL SETTINGS** is selected to "**Configured phone numbers**".

Temporary control

In addition to the phone numbers set, another 4 phone numbers can be authorised for relay control up to a given date.

This can be used to provide and delete temporary access to guesthouses, gates.

TEMPORARY CONTROL	
Phone number	Availability
0036209999999	20191106 🗓
	🗓

Control works only, if in the **Relay control** menu of the **GENERAL SETTINGS** is selected to "**Configured phone numbers**". After passing the validity date YYYY.MM.DD 23:59, authorisation for the given phone numbers expires.

Phone numbers can be modified remotely via SMS.

Format of the message: (use of separators is important!)
t1:phonenumber**/**YYYYMMDD**,t2:**phonenumber**/**YYYYMMDD**,**
t3:phonenumber**/**YYYYMMDD**,t4:**phonenumber**/**YYYYMMDD
Example:
t1:06301234567/20191231,t2:,t3:,t4:
Only t1 is authorised for temporary control until December 31, 2019.

Test report (heartbeat)

It can be turn on the test report, which confirms for the end users that the system is active, operational, and the SIM card is valid. The frequency of notification is adjustable between 1-30 days. (e.g. 7 days, it means test messages are sent weekly) The SMS will only be sent to the first set user's phone number, at 9:00 am on the given day. The content of the message can be modified.

SMS commands

SMS commands are exclusively accepted from the first phone number set in the **NOTIFICATIONS and PERMISSIONS SETTINGS** window.

Message sent	Description
?	Status query
t1:phonenumber**/**YYYYMMDD**,** **t2:**phonenumber**/**YYYYMMDD**,** **t3:**phonenumber**/**YYYYMMDD**,** **t4:**phonenumber**/**YYYYMMDD**,**	Setup of temporary control rights. After **t1-t4** the phone number of the authorised users, after the **/** sign the date in the needed format. The comma is the separator!
t1:,t2:,t3:,t4:	Deleting the phone numbers.
lowtemp:xy	Modification of the lower temperature alarm threshold
hightemp:xy	Modification of the upper temperature alarm threshold

In case the temperature threshold is negative, the – sign shall be put before the needed temperature, e.g.: **lowtemp:-15** thus the required lower alarm threshold is -15°C.

Installation

- Inserting SIM: contacts underneath, cut-off corner facing the SIM holder, see figure
- Antenna and terminal strip connected as per the figure
- Establish connection with PC through USB for configuration, run **SecurecomConfigurator**
- Set up SIM PIN for GSM network connection, but not necessary if the card has no PIN code
- Enter settings in PC software
- **Loading settings to the module, using the red icon!**
- Testing the operation of set up functions, using the **STATUS INDICATOR** window
- If the test is passed, the module can be installed

LED indications

	Continuous	Blinking
NET (green)	**Coverage OK**	**Coverage < 30%**
TRBL (red)	**Missing SIM**	**GSM connection**
SEND (red)	**Sending text message**	**Alarm call**
REC (zöld)	**Incoming call**	-
REL (yellow)	**RELAY control**	-

Technical data

- Structure: 2 inputs, 1 relay, 1 thermometer
- Inputs: NO or NC contact
- Relay: max. 60V/2A, contact independent, NO
- Range of thermometer -20°C / +50°C accuracy: ±2°C
- Communication: GSM 900/1800MHz
- SIM card: Nano-SIM (4FF)
- Power supply: 9-30V DC / 500mA min.
- USB connection: USB 2.0 mini-B
- Case size: 40x50mm

Content of the package

- SS21-GSM module
- GSM antenna
- USB 2.0 mini-B cable
- Plastic spacers
- Users manual