



SECURECOM

SINGULAR WIFI, W2G, W4G

Model: 3

Remotely manageable alarm monitoring communicators
with Mobile App

Users manual v2.0



SINGULAR WIFI



SINGULAR W2G



SINGULAR W4G

Contents

1	General information	3
2	Appearance	4
3	Wiring diagram	5
4	Required settings of the security system	5
5	Status indicators	5
6	Configuring the Device	6
6.1	Mobile Network Connection Settings	7
6.2	Setting up the WIFI connection.....	7
6.3	Monitoring Station Settings	8
6.4	Status indicators.....	9
6.5	Displaying the text of events, statuses.....	9
6.6	Administrative window	9
7	Technical data.....	10
8	Content of the package	10

1 General information

SINGULAR (WIFI, W2G, W4G) signaling devices are a modern remote monitoring communicators which operates on the WIFI and 2G or 4G mobile network parallel. The device converts the Contact ID signals of alarm control panels into SIA DC-09 digital format and forwards to the predefined remote monitoring station's receivers.

The 3 above mentioned communicators are functionally identical, the difference is between their mobile network communication capabilities. While **SINGULAR WIFI** is only capable for 2.4GHz WIFI connection (IEEE 802.11 b/g/n), the **SINGULAR W2G** already has WIFI and 2G (EDGE) data connections and finally the top model **SINGULAR W4G** already has WIFI and 4G data (LTE) data connections.

Operation of remote monitoring signal transmission:

The communicator (simulating a landline towards the alarm system) receives the Contact ID report codes from the alarm panel, then forwarding those to the remote monitoring station via the mobile network (in the form of TCP/IP or UDP packets), as it is defined in the SIA DC-09 standard. If sending is successful, the acknowledgement received from the monitoring receiver is signalled to the alarm centre. In the same time it can forward the contact signals received on its own inputs, to the monitoring station.

Operation of signal transmission to Mobile App and controlling by user:

The communicator sends status information to a dedicated server about its operation.

When the alarm system sent the report codes to the communicator the SINGULAR sends the events to the IOT server too, and then the server forwards it to the user's phone in the form of a PUSH message. When the user want arm or disarm, the mobile phone will send the demand to server, and the communicator will receive and switch the appropriate relay for arm or disarm, up to 2 partitions. In stand-alone operation, when using the communicator without monitoring station, the device even forwarding the Contact ID signal of the alarms in „push notification“ format, to the PULOWARE phone application (on both Android and IOS platforms).

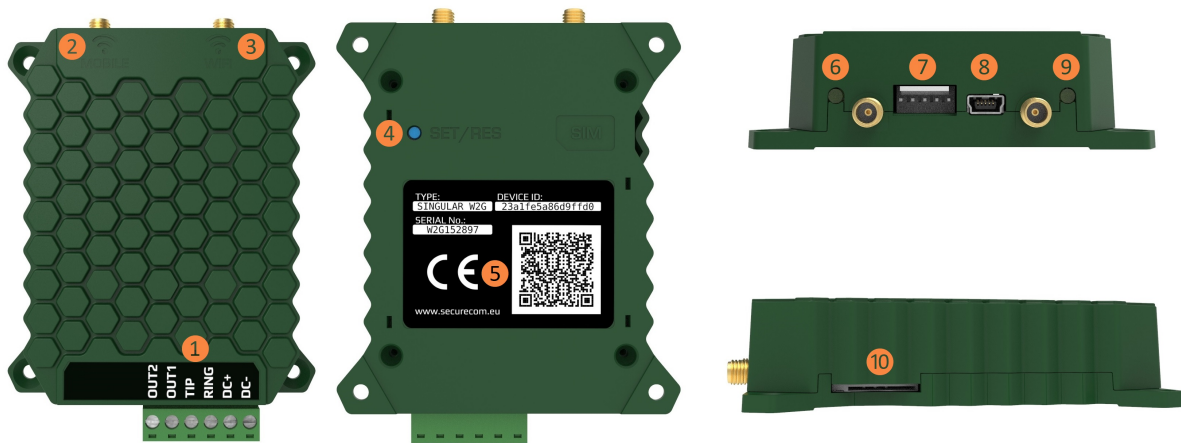
The difference between the types, is shown in the following table:

Type	WIFI connection	Mobile network connection
SINGULAR WIFI	✓	-
SINGULAR W2G	✓	2G (GPRS)
SINGULAR W4G	✓	4G (LTE)

Key features

- WIFI network connection (1 or 2 networks can be set up, primary and backup)
- Mobile network connection (2G or 4G, depending on type)
- Compatible with all control panels that communicate using the Contact ID format
- Contact ID signaling to 2 independent SIA DC-09 remote monitoring receivers
- 2 relay outputs to control the alarm system (arm/disarm up to 2 partitions)
- Unique messages assigned to Contact ID signals, using an event filter
- Alarm control and status monitoring from a smartphone application
- Measuring and signaling power supply and disconnection when is battery under voltage
- Serial port for the remote programming of alarms
- Parameter setting locally from a PC program, or remotely through WEB browser

2 Appearance



Pictured in green is the SINGULAR W2G model

Legends:

- 1 Terminal block for connecting to the alarm system (pluggable)

OUT2	OUT1	TIP	RING	DC+	DC-
Momentary switch type relay to DC- for partition 2 (open/close)	Momentary switch type relay to DC- for partition 1 (open/close)	Simulated phone line to AS TIP/RING port for Contact ID communication		Positive supply	Negative supply

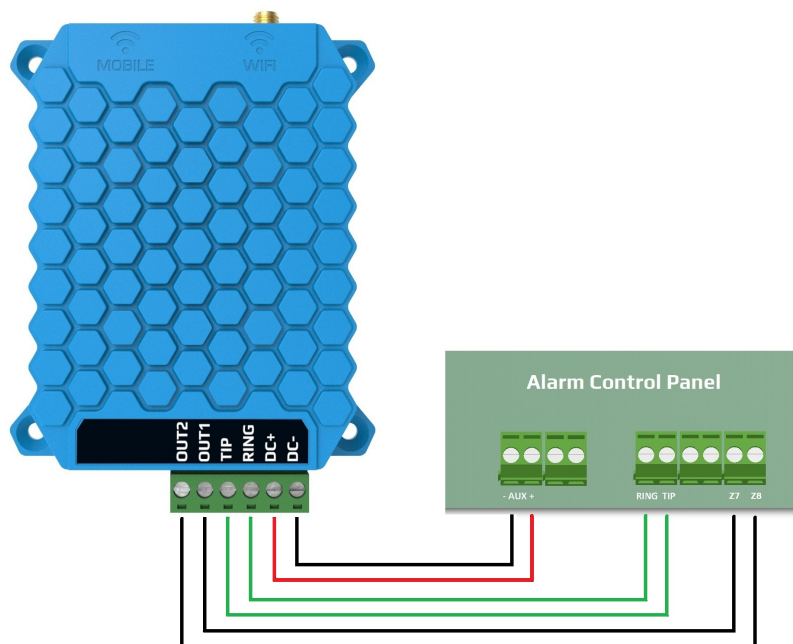
Switching of the outputs is compared to the DC- negative supply, which, by default, is NO (normally open)! Switching power max.: 60V @ 2A

- 2 Mobile antenna connector (SMA male)
- 3 WIFI antenna connector (SMA male)
- 4 Pushbutton to turn on WIFI hotspot mode, and to reset to factory defaults
- 5 Device ID sticker

TYPE:	SERIAL No:	DEVICE ID:	QR code
Type ID marking WIFI, W2G, or W4G	Serial number	Device ID for the mobile application and remote WEB access	Device ID for registration in the mobile application

- 6 WIFI connection status LED
- 7 Serial connector for remote programming of alarm systems
- 8 USB mini B connector for PC configuration
- 9 Mobile network connection status LED
- 10 SIM card holder for mobile data connection (mini SIM -2FF, push – push)

3 Wiring diagram



Pictured in blue is the SINGULAR WIFI model

4 Required settings of the security system

In the communication settings of the connected alarm system, the following actions are required:

- Phone communication should be enabled in the alarm centre
 - DTMF (Tone) dialling should be selected
 - A minimum 4 digit phone number should be set for dialling (anything is acceptable, e.g. 1111)
 - Object identifier should be set
 - Contact ID (Full) should be selected
 - It should be set, that disarm event can generates report after every disarm (not only after an alarm)
- After that the module receives the signals of the alarm centre as a remote monitoring receiver, and forwarding those to the receiver.

The alarm system arm/disarm control happens by 1 second relay pulses, starting by the in application. Thus the arm/disarm zone inputs, arming/disarming the alarm, should be set to momentary key switch, using NC type.

5 Status indicators

Status indicators **6** and **9** provides the following status information on the communicator.

	Mobile network status 9	WIFI network status 6
Continuous Red	APN or SIM missing	No network set
Blinking Red	Connection in progress	Faulty setting
Blinking Green	Normal operation	Normal operation
Continuous Green	Event reporting over mobile net	Event reporting over WIFI net
Green/Red	-	WIFI setup mode

6 Configuring the Device

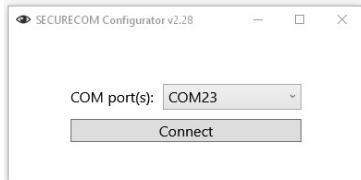
In order to setup the details of communication, install the SECURECOM CONFIGURATOR program first. The program can be downloaded from the site:

http://securecom.eu/applications/securecom_configurator

Detailed description of setup is provided on this page.



After running the SecurecomConfigurator program, connect the USB port of the device to the PC, and select the appropriate serial port, then push the “Connect” button. For example:



Once connected, device settings can be found on the following interface.

SECURECOM
TYPE: SINGULAR W2G [MODEL 3]
FIRMWARE: v1.14.273
Device ID: f9444e86fb3ff357

LATEST EVENTS
15:29:17.632: MS1 SIA response: ACK
15:29:19.477: Send MS1 SIA
15:29:19.680: CID RECV OK
15:29:19.680: MS1 SIA response: ACK
15:29:27.743: Send MS1 SIA
15:29:27.946: CID RECV OK
15:29:27.946: MS1 SIA response: ACK

WARNING! Remote programming of the security system during USB connection is not allowed!

MODULE STATUS		MONITORING STATION 1 SETTINGS		MONITORING STATION 2 SETTINGS	
Mobile network:	EDGE (2G) Vodafone	IP address:	siatest.securecom.eu	IP address:	
Network signal (%):	74%	Port:	9998	Port:	9998
Wifi network:	FAN THOMAS	Protocol:	UDP	Protocol:	UDP
Wifi signal:	100% [-42 dBm]	SIA prefix:		SIA prefix:	
Monitoring station 1:	OK	Object identifier:	0000	Object identifier:	0000
Monitoring station 2:		Replace obtained identifier:	NO	Replace obtained identifier:	NO
Dial capture:	ONHOOK	Link test period:	3 mins	Link test period:	3 mins
Output 1:	INACTIVE	Link test code:		Link test code:	
Output 2:	INACTIVE				
Supply voltage:	13.38V				

SERIAL PORT SETTINGS		MODEM AND GPRS SETTINGS		COMM. EVENT CODES	
Baud rate:	9600	PIN code:		Setup changed:	306
Data bits:	8	GPRS APN:	m2m.sim.com	OUT controlled:	205
Parity:	None	User:			
Stop bit:	1	Password:			

Operation of device requires the following basic settings:

- Setting of mobile network connection (APN for W2G and W4G)
- Setting of WIFI connection (required for SINGULAR WIFI, optional for W2G and W4G)
- Setting of remote monitoring receivers (optional, because the unit is operational standalone)

Attention: validity of the modified setting on the unit, require that the new variant is downloaded to the module!



To download, click on the icon, which will initiate the changes displayed in the STATUS INDICATOR window. After modification, the background of the icon becomes red, showing downloading is necessary..

6.1 Mobile Network Connection Settings

This setting for SINGULAR WIFI model is inactive in lack of a mobile unit.

In order to set up the network connection, insert a correct SIM card in the SIM card holder **10**, on the side of the device (according to the marking on the back), with the following requirements:

- mobile data capable
- active
- known data of APN connection
- PIN code of the card is known, or PIN is not required

If PIN is required for the SIM card, it has to be entered in the **SIM PIN code** field. In order to establish the data connection, the inserted SIM card's APN data have to be provided. (Generally there is no user name and password, only APN name)

MODEM AND GPRS SETTINGS	
PIN code:	
GPRS APN:	m2m.sim.com
User:	
Password:	

After downloading the data, the module restarts, and connects to the network typically within 30 to 60 seconds. Successful connection is indicated by the green flash of status indicator LED **9**, while an error is indicated by a red flash. In addition the information window shows the appropriate status message as well.

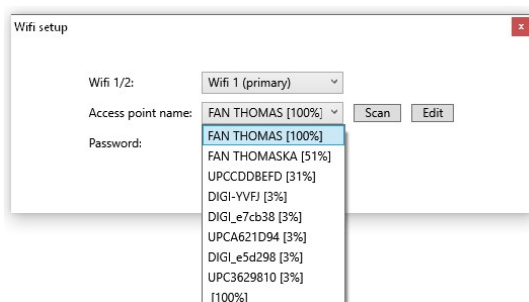
6.2 Setting up the WIFI connection

Setting up a WIFI connection reduces the data traffic on the SIM card, and also increases the signaling transfer speed. If a WIFI network is available at the installation, we recommend setting up access to the network in the unit. However for setting up of SINGULAR WIFI device the local WIFI network access is required, moreover access to 2 different WIFI networks can be set, thus further increasing functional safety!

1. Setup is started by clicking on the gear icon of the **WIFI network** value field in the **MODULE STATUS** window.



2. Accessible WIFI networks are listed by clicking on the **Explore** button.



3. After selecting the appropriate network, and entering the valid password, click on the **Save** button to establish the WIFI connection. Successful connection is indicated by the green flash of status indicator LED **6**, while an error is indicated by a red flash. In addition the information window shows the appropriate status message as well.

6.3 Monitoring Station Settings

Setting is optional, to be entered only if required reporting to monitoring station because the device can be operating in standalone mode too.

Connection with SIA DC-09 remote monitoring receivers (e.g. IPR-5000) requires the following settings:

MONITORING STATION 1 SETTINGS	
IP address:	siatest.securecom.eu
Port:	9998
Protocol:	UDP ▾
SIA prefix:	
Object identifier:	6789
Replace obtained identifier:	NO ▾
Link test period:	3 mins ▾
Link test code:	

IP address	IP address or domain name of the receiving station. (e.g. siatest.securecom.eu)
Port	End point of the IP address subnet, where the receiving computer is directed on the router
Protocol	Selectable communication transfer protocol: TCP or UDP
SIA prefix	2-character addition, it is necessary when the monitoring receiver expects a 6-character client ID, but the one generated by the alarm is only 4-character long
Object identifier	Account number of communicator unit (to send own reports: link test code, errors)
Replace obtained identifier	When enabled, replaces the original Account number in Contact ID report to the characters given in Object identifier , in all CID signals coming from the alarm
Dialed number by alarm system	The dialed phone number forces the actual signaling towards the given receiver Eg. general reports go to receiver 1, while service events are sent to receiver 2
Link test period	Setting the frequency of the test report
Link test code	Setting the code sent in the test report. If left empty, the null test set in the standard, is sent to the receiver.

The communicator can keep contact up to 2 remote monitoring receivers. The primary direction is the MONITORING STATION 1, thus all signals are sent to this address, until the test report or other signals are successfully completed. If there is no successful acknowledgement from MONITORING STATION 1, the unit switches to the direction of MONITORING STATION 2, and forwarding the signals of the alarm and inputs there.

In case acknowledgement from MONITORING STATION 1 becomes successful again, sending is directed back to the address of the primary receiver.


In case you want to send some of the signals (e.g. service reports) to STATION 2, a different phone number has to be entered in the **Dialed number by alarm system** field of STATION 2 in the device. This will force the communicator to send the given report to STATION 2, instead of the primary one.

The communicator takes any phone number from the alarm system, thus can be adapted to old systems without modification the dialled phone number of the alarm system.

The replacement of the client ID enables inserting old systems in the client registry system of the remote monitoring company.

6.4 Status indicators

The current status of the module is shown in the MODULE STATUS window.

MODULE STATUS		
Mobile network:	EDGE (2G) Vodafone	→ SIM card status, and the name of the mobile provider
Network signal (%):	74%	→ Signal strength of the mobile network (0-100)
Wifi network:	FAN THOMAS 	→ Name of WIFI network
Wifi signal:	100% [-42 dBm]	→ Signal strength of WIFI network
Monitoring station 1:	OK	→ REMOTE MONITORING RECEIVER 1 connection status
Monitoring station 2:		→ REMOTE MONITORING RECEIVER 2 connection status
Dial capture:	ONHOOK	→ Status of the alarm dialler (TIP/RING)
Output 1:	INACTIVE	→ Status of output relay 1
Output 2:	INACTIVE	→ Status of output relay 2
Supply voltage:	13.38V	→ Value of supply voltage

6.5 Displaying the text of events, statuses

In the **LATEST EVENTS** window of the configurator, the communication between the communicator and the alarm system, the sending of report codes to the receiver, and the actual operation messages of the unit, can be monitored.







6.6 Administrative window

The administrative window of the **SecurecomConfigurator** software contains the following important data of the device.



- Type ID of the product
- Program version of the micro controller
- Unique device ID code
- Administrative tools
- Selection of language

Function of the administrative tools is as follows:

- | | |
|---|---|
|  | Re-starting the module |
|  | Opening saved settings and loading to the screen |
|  | Saving settings in a file |
|  | Download and activation of settings on the device |
|  | Test of relay OUT1 |
|  | Test of relay OUT2 |

Using the unique device ID code, the product can be accessed remotely from a WEB page, similarly to the PC setup program. These options are described in a separate document.

7 Technical data

- Supply Voltage 10.5 to 30V DC
- Current consumption, idle 120mA
- Current consumption, max. 500mA
- Operating Temperature -20°C to +70°C

8 Content of the package

- SINGULAR WxG communicator (WIFI, W2G, W4G, depending on type)
- Antenna (for WIFI: 1pc, for W2G and W4G: 2pcs)
- Users manual
- Warranty