eldes

GSM SECURITY AND CONTROL SYSTEM

ESIM021

Manual v1.1

Safety instructions

Please read and follow these safety guidelines in order to maintain safety of operators and people around:

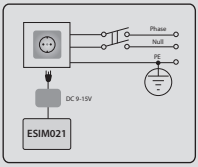
- Alarm and control system ESIM021 (later referenced as system) has radio transceiver operating in GSM850/900/1800/1900 bands.
- Don't use the system where it can be interfere with other devices and cause any potential danger.
- Don't use the system with medical devices.
- Don't use the system in hazardous environment.
- Don't expose the system to high humidity, chemical environment or mechanical impacts.
- Don't attempt to personally repair the system.
- System label is on the bottom side of the device.

System ESIM021 is a device mounted in limited access areas. Any system repairs must be done only by qualified, safety aware personnel.

The system must be powered by main 9-15V ⎓ 300mA power supply which must be approved by LST EN 60950-1 standard and be easily accessible.

Any additional devices linked to the system ESIM021 (computer, sensors, relays etc.) must be approved by LST EN 60950-1 standard.

External power supply must be reachable and can be connected to AC mains only inside installation room with automatic 2-pole circuit breaker capable of disconnecting circuit in the event of short circuit or over-current condition. Open circuit breaker must have a gap between connections of more than 3mm.



Mains power must be disconnected before any installation or tuning work starts. The system installation or maintenance must not be done during stormy conditions.

The device is switched off by 2-pole circuit breaker.

Fuse F1 type – miniSMDC 0,5A. Replacement fuses have to be exactly the same as indicated by the manufacturer.

The WEEE (Waste Electrical and Electronic Equipment) marking on this product (see right) or its documentation indicates that the product must not be disposed of together with household waste. To prevent possible harm to human health and/or the environment, the product must be disposed on in an approved and environmentally safe recycling process. For further information on how to dispose of this product correctly, contact the system supplier, or the local authority responsible for waste disposal in your area.

CE

Limited Liability

The buyer must agree that the system will reduce the risk of fire, theft, burglary or other dangers but does not guarantee against such events.
"ELDES UAB" will not take any responsibility regarding personal or property or revenue loss while using the system.
"ELDES UAB" liability according to local laws does not exceed value of the purchased system. "ELDES UAB" is not affiliated with any of the cellular providers therefore is not responsible for the quality of cellular service.

Manufacturer Warranty

The system carries a 24-month warranty by the manufacturer "ELDES UAB". Warranty period starts from the day the system has been purchased by the end user. The warranty is valid only if the system has been used as intended, following all guidelines listed in the manual and within specified operating conditions. Receipt must be kept as a proof of purchase date.
The warranty is voided if the system has been exposed to mechanical impact, chemicals, high humidity, fluids, corrosive and hazardous environment or other force majeure factors.

Package content:

1. ELDES ESIM021 ..... qty. 1
2. ESIM021 User Manual..... ..... qty. 1

About User Manual

This document describes GSM security and control system ESIM021, it's installation and operation. It is very important to read User Manual before start using the system.

1. General Information

1.1 Function

ESIM021 is a microcontroller based device used to inform users about the alarm in automatic or security systems and control one electric appliance – open collector.

1.2 Operation description

The GSM security and control system ESIM021 uses the GSM network for transmission of inputs (alarms generated by one of the system zones) to authorised users. In addition to being informed about triggers/resets of the inputs, the users can manage the system and use the system to control one electronic device.
The system has two digital inputs (normally open) called Zone1 and Zone2. ESIM021 can also control 1 electronic device (using an open collector) on receipt of the correct SMS text message from one of the authorised users. For example, users can turn on or off the heating, lighting, lift the gates, blinds etc. The system remembers the output setting if there is a temporary electricity failure. Once initialised, ESIM021 will function 24/7.
When an authorised number calls to the system, the device answers and the user can listen for 2 minutes to what is going on in the premises. This function works only when a microphone is connected. This microphone does not include into standard package content. The system will ignore SMS requests and voice calls coming from unknown telephone numbers. Users can be informed about triggered/reset inputs by SMS (see chapter 1.2.4) or CALL methods (see chapter 1.2.5). Users also can enable and disable either input (see chapter 2.2).
Any number format can be used, for example +37011111111, 861111111 or even short numbers like 111. International numbers must be entered with „+" or „00".

1.2.1 Entering users on the SIM card using a mobile phone

The SIM card should be inserted into the phone. The two user numbers must be entered into the SIM card memory under the names "User1" and "User2". These should be entered into the SIM phone book in your mobile phone. It is also possible to enter User1 only. Then the SIM card should be inserted into the ESIM021.

1.2.2 Entering user by phone call to the system

The SIM card should be inserted into the ESIM021. When ESIM021 starts it looks for User1 and User2 names in the SIM card memory. If the system can't find any of these users, it waits for a phone call, answers the call and saves the phone number as User1.

NOTE: with this type of setup, only User1 can be entered.

1.2.3 Entering users by SMS text message

The SIM card should be inserted into the ESIM021. Users can enter phone numbers via the following SMS format: NRx:yyyyyyyy, where x - 1 or 2 (User1 or User2), yyyyyyyy - user phone number. This method can be used to enter both User1 and User2 phone numbers. This method may be used to change entered users numbers with new ones.

NOTE: this method can be used only from authorized numbers – User1 and/or User2, so if there is no any entered user – this method will not work.

1.2.4 SMS method

When a digital input (Zone1 or Zone2) is triggered, the users are informed by an SMS message containing the text „Triggered ZONE1" or „Triggered ZONE2". When the digital input resets, the users are informed by an SMS message containing the text „Restored ZONE1" or „Restored ZONE2".

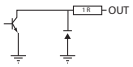
1.2.5 CALL method

When a digital input (Zone1 or Zone2) is triggered, the users are informed by call. The device will call both users, first calling User1 and afterwards User2. If a user answers the call, it will last for 10 seconds and then the device will hang up. This function works only when a microphone is connected. This microphone does not include into standard package content.

NOTE: When using the CALL method users will not know which input was triggered and also will not be informed about reset inputs.

1.3 Technical Specifications

Electrical and mechanical specifications

Supply voltage	9-15V ⎓ 300mA max
Current used in standby mode	30mA max
GSM modem frequency	850/900/1800/1900 Mhz
Number of digital inputs (normal open)	2
Allowable digital input voltage values	0-30V
Impulse duration	>600ms
Number of outputs	1
Output maximum switching ratings	Current - 500mA, voltage - 30V
Output circuit	 Open collector output. Output is pulled to COM when enabled.
Dimensions	108x52x30mm
Operating temperature range	-35…+55°C

1.4 Connector Functionality

Short explanation of the main units

GSM MODEM	GSM network 850/900/1800M/1900 MHz modem
SIM CARD	SIM card
LED	Light-emitting diodes indicator
ANT	GSM antena
MIC	Microphone

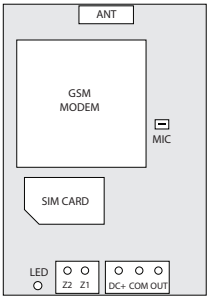


Fig. No. 1

Connector functionality

Labeling	Explanation
DC+	DC+ power in connector
COM	Earth pin
OUT	Controlled output (Open collector)
Z1	Digital input Z1
Z2	Digital input Z2

LED indicator status	Meaning
OFF	No network connection
Every 1 sec	Not synchronized with network
Every 2 sec	Synchronized with network

1.5 Connection Circuit

System ESIM021 and security unit COM must be connected.
ESIM021 can be powered from battery. The battery capacity shouldn't be higher than 7Ah.
Inputs Z1 and Z2 are connected to security unit PGM outputs if PGM are implemented as open collector circuit or any other circuit and if it commutates with COM.
It is also possible to connect Z1 and Z2 inputs to, for instance, motion sensor or any other sensor as well as automatics device provided the inputs are commutated with COM.

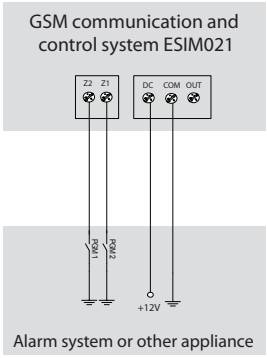


Fig. No. 2

1.6 System installation

The system box should be fixed with four screws to the wall. Since the ESIM021 has integrated GSM antenna, it should not be installed into the metal box. For the connection of power supply, output and inputs connectors should be used 1 thread 0,5mm2 cable. Cables should be connected to the connectors and brought through the special cover hole for cables.

1. Enter one or two numbers into SIM card under names "User1" and "User2".
2. Place SIM card in the holder but make sure that SIM card PIN code request is disabled (PIN code can be disabled by putting SIM card into mobile phone and following proper menus). SIM card should not have any remaining SMS messages. All SMS text messages from SIM card will be automatically deleted during system start.
3. Connect the circuit as shown in Fig. No.2. Power supply cables are connected last. When connecting ESIM021 to security central system power supply, usually the security system AUX output is used. Security system power supply must be disconnected before connecting ESIM021. The system should not be installed on metal surfaces.
4. When DC power supply is used, there is no need to connect any other power supplies.
5. The system will start in less than a minute.

To increase system reliability, it is recommended not to use prepaid SIM cards. The system would fail to send any messages upon depletion of prepaid account. Also it is recommended to disable call forwarding and voice mail.

It is worth to choose the same GSM cellular provider as most users use assuring fast and reliable SMS message delivery and phone call connection.

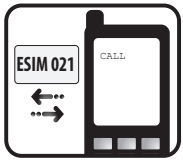
Even though alarm system ESIM021 installation is not complicated, it is recommended to be performed by a person with basic knowledge in electrical engineering and electronics to avoid any system damage.

2. System control commands

VERY IMPORTANT!!!
Underscore symbol '_' in this manual is used to represent space. When writing SMS messages, every underscore symbol should be replaced by single space symbol. Don't leave any space at the beginning and the end of the message.

To manage and configure the device can only entered User1 and User2 phone numbers.

2.1 Change the way system informs about events



By default the system is set to inform users about events via SMS message. To set system to inform users via calls, user have to send SMS message to Esim021:

```
CALL
```

To change back the system to inform users via SMS, user have to send SMS message to Esim021:

```
SMS
```

2.2 Enabling/disabling zones

Enabling Zone
Any zone can be enabled by sending the following SMS message:

```
ZONE1:ON or ZONE2:ON
```

Disabling Zone
Any zone can be disabled by sending the following SMS message:

```
ZONE1:OFF or ZONE2:OFF
```

The zones can be enabled/disabled together or separately one by one.
Both zones can be disabled by sending the following SMS message:

```
ZONE1:OFF_ZONE2:OFF
```

2.3 Managing Output Controller

Alarm system ESIM021 has open-collector controlled output. It can be used to control various electrical devices such as electric pumps, heating, lighting, etc. When outputs are enabled, it corresponds to output pins being pulled to ground (GND).

Enabling output:

```
OUT:ON
```

Disabling output:

```
OUT:OFF
```

3. Technical Support

3.1 Technical Support

Indication	Possible reason
Indicator is off or not blinking	· no external power supply · circuit not properly connected · blown fuse ·
System does not send any SMS messages and/ or does not ring	· SIM card account depleted · no network signal · user number is not programmed

If your problem could not be fixed by the self-guide above, please contact your distributor or manufacturer tech support by email support@delton.hu. More up to date information about your device and other products can be found at the manufacturer's website www.eldes.hu